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Via Electronc Mail

June 25, 2021

Mr. Christopher Smith EPA Project Manager U.S. Environmental Protection Agency New England Region Five Post Office Square, Suite 100 Boston, MA 02109

#### Re: GE-Pittsfield/Housatonic River Site Rest of River (GECD850) Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas

Dear Mr. Smith:

In accordance with EPA's conditional approval letter dated April 26, 2021, enclosed is General Electric Company's *Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas*. Please let me know if you have any questions about this revised work plan.

Very truly yours,

Kevin G. Mooney Senior Project Manager – Environmental Remediation

Enclosure

Cc: (via electronic mail) Dean Tagliaferro, EPA Tim Conway, EPA Christopher Ferry, ASRC Primus Thomas Czelusniak, HDR Inc. Scott Campbell, Taconic Ridge Environmental Izabella Zapisek, Taconic Ridge Environmental Michael Gorski, MassDEP Elizabeth Stinehart, MassDEP John Ziegler, MassDEP Ben Guidi, MassDEP Michelle Craddock, MassDEP Jonathan Regosin, MassDFW Molly Sperduto, USFWS Betsy Harper, MA AG Traci lott, CT DEEP Susan Peterson, CT DEEP Nate Joyner, Pittsfield Dept. of Community Development Andrew Silfer, GE Eric Merrifield, GE James Bieke, Sidley Austin Michael Werth, Anchor QEA Public Information Repository at David M. Hunt Library in Falls Village, CT GE Internal Repository



June 2021 Housatonic River – Rest of River



# Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas

Prepared for General Electric Company Pittsfield, Massachusetts June 2021 Housatonic River – Rest of River

## Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas

**Prepared for** General Electric Company 1 Plastics Avenue Pittsfield, Massachusetts 01201 **Prepared by** Anchor QEA, LLC 290 Elwood Davis Road Liverpool, New York 13088

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## **ABBREVIATIONS**

2017 Work Plan	Floodplain Pre-Design Investigation Work Plan – Reach 5A
CD	Consent Decree
CMSP	Housatonic River – Rest of River, Corrective Measures Study Proposal
DGPS	Differential Global Positioning System
DQO	Data Quality Objective
EA	Exposure Area
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
GE	General Electric Company
GIS	Geographic Information System
HHRA	Human Health Risk Assessment
ITRC	Interstate Technology and Regulatory Council
MassDFW	Massachusetts Division of Fisheries and Wildlife
mg/kg	milligrams per kilogram
NHESP	Natural Heritage and Endangered Species Program
PCB	polychlorinated biphenyl
PDI	Pre-Design Investigation
RCMS	Housatonic River - Rest of River, Revised Corrective Measures Study Report
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
Revised Non-Residential Floodplain PDI Work Plan	Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas
Revised Residential Floodplain PDI Work Plan	Revised Pre-Design Investigation Work Plan for Reach 5A Floodplain Residential Properties
SI	Supplemental Investigation
SOP	standard operating procedure
UCL	Upper Confidence Limit
Woodlot	Woodlot Alternatives, Inc.
WWTP	Wastewater Treatment Plant

## 1 Introduction

### 1.1 Background

Pursuant to the Modified Resource Conservation and Recovery Act (RCRA) Permit issued by the U.S. Environmental Protection Agency (EPA) to the General Electric Company (GE) on October 24, 2016, for the Rest of River portion of the GE-Pittsfield/Housatonic River Site, GE submitted a *Floodplain Pre-Design Investigation Work Plan for Reach 5A* to EPA on October 6, 2017 (2017 Work Plan). That work plan described GE's proposed pre-design soil sampling program for the Exposure Areas (EAs) within Reach 5A of the Rest of River floodplain and associated survey activities and proposed activities to identify potential vernal pools.

On January 25, 2018, EPA issued a letter conditionally approving the portions of the 2017 Work Plan pertaining to the identification of potential vernal pools in Reach 5A and the assessment of the accessibility of the various habitats within that reach of floodplain (Section 4.3 and portions of Section 6 related to proposed activities to identify potential vernal pools). GE subsequently conducted those activities and submitted final reports on them in July 2020, which were approved by EPA. These reports were the *Final Report on Potential Vernal Pool Investigations*, dated July 16, 2020 (Final Vernal Pool Report; AECOM 2020) and the *Final Morphology and Accessibility Survey Report*, also dated July 16, 2020 (Final Accessibility Report; AECOM and Anchor QEA 2020). On February 4, 2021, GE submitted a letter to EPA modifying its identification and evaluation of vernal pools (GE 2021).

On a separate track, on March 28, 2018, EPA conditionally approved portions of the 2017 Work Plan that addressed sampling of residential properties that extend into the Reach 5A floodplain. That letter required GE to submit a separate work plan for soil sampling for polychlorinated biphenyls (PCBs) on those properties. In response, GE submitted a *Pre-Design Investigation Work Plan for Reach 5A Floodplain Residential Properties* on August 15, 2018. Thereafter, following the execution of a Rest of River Settlement Agreement by GE, EPA, and other parties in February 2020, EPA issued a conditional approval letter for that work plan on June 9, 2020. In response, GE submitted a *Revised Pre-Design Investigation Work Plan for Reach 5A Floodplain Residential Properties* (Revised Residential Floodplain PDI Work Plan) on July 9, 2020, which was approved by EPA on July 23, 2020. GE then completed sampling activities at the subject residential properties pursuant to that revised work plan. Subsequently, on March 31, 2021, GE submitted an Addendum to the Revised Residential PDI Work Plan that summarized the results from the prior sampling and provided a proposal for supplemental sampling where needed. That addendum was conditionally approved by EPA on April 20, 2021. GE anticipates completing that supplemental sampling during the summer of 2021.

In the meantime, on December 16, 2020, EPA issued a Revised Final RCRA Permit Modification (Revised Final Permit), which reflected the terms of the February 2020 Settlement Agreement and

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replaced the 2016 Modified Permit. Section II.B.3 of the Revised Final Permit contains the applicable requirements for sampling and remediation of the Rest of River floodplain soils, including both residential properties and non-residential areas, and vernal pools within the floodplain. The sampling requirements are specified in Sections II.B.3.a.(2)(a) and II.B.3.b.(2)(b) of the Revised Final Permit.

In a letter dated April 26, 2021, EPA conditionally approved the remainder of the 2017 Work Plan, which primarily focused on the non-residential EAs in Reach 5A of the floodplain, requiring GE to submit a revision to that plan to reflect the current state of the project (i.e., to account for other floodplain pre-design investigation [PDI] work completed to date, as summarized above) and to make a number of changes to the sampling approach and locations as specified in EPA's letter. This *Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas* (Revised Non-Residential Floodplain PDI Work Plan) constitutes that revised plan.

## 1.2 Description of Reach 5A Floodplain

Under the Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site (EPA/GE 2000), the Rest of River is 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 of the East and West Branches of the Housatonic River (the Confluence) in Pittsfield, Massachusetts. Within Reaches 5 and 6 (i.e., between the Confluence and Woods Pond Dam), the CD defines the Rest of River site boundary as the floodplain area extending laterally to the 1 milligram per kilogram (mg/kg) PCB isopleth, which corresponds approximately to the 10-year floodplain.

This Revised Non-Residential Floodplain PDI Work Plan is limited to the floodplain in Reach 5A approximately the first five miles of the Rest of River from the Confluence to the Pittsfield Wastewater Treatment Plant (WWTP). The floodplain in Reach 5A covers approximately 325 acres and ranges in width from 100 feet at its narrowest point to approximately 2,500 feet at its widest point (BBL and QEA 2003). It is shown on Figure 1-1. The relatively wide floodplain in most of Reach 5A is a result of the gentle slope of the local topography (which is illustrated by relatively few elevation contours within the 1 mg/kg PCB isopleth on Figure 1-1, particularly in the widest floodplain area in the northern portion of Reach 5A). Since the PDI requirements for the properties within the Reach 5A floodplain that are subject to the residential Performance Standards in the Revised Final Permit have been and are being addressed under separate work plans, this Revised Non-Residential Floodplain PDI Work Plan addresses the EAs within the Reach 5A floodplain that are subject to the non-residential Performance Standards. Those EAs are referred to herein as "non-residential EAs," although some of them include portions of residential properties that are subject to non-residential Performance Standards.

Vegetation in the floodplain varies from short grasses to mature trees. Historical characterization of the Housatonic River floodplain between the Confluence and Woods Pond Dam, performed by

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Woodlot Alternatives, Inc. (Woodlot), on behalf of EPA (Woodlot 2002), resulted in the identification of 18 vegetation community types within this reach. Palustrine communities cover most of the floodplain (approximately 67%), while riverine, terrestrial, and lacustrine communities cover approximately 21%, 10%, and 2% of the floodplain, respectively (BBL and QEA 2003).

Reach 5A also contains numerous vernal pools. GE's 2020 Final Vernal Pool Report (AECOM 2020) stated that a total of 68 vernal pools had been identified and were determined to meet both the biological and physical criteria for certification of vernal pools based on guidelines issued by the Natural Heritage and Endangered Species Program (NHESP). After receipt of comments from NHESP, GE revised its evaluation and, in its February 4, 2021 letter, noted that nine of those 68 pools did not, in fact, meet the applicable vernal pool criteria, leaving 59 identified vernal pools in the Reach 5A floodplain (GE 2021). EPA approved that revised evaluation on March 9, 2021. The 59 confirmed vernal pools in Reach 5A are shown on Figure 1-1. This Revised Non-Residential Floodplain PDI Work Plan includes a proposal for sampling in those vernal pools.

## 1.3 Summary of Applicable Requirements

Section II.B.3 of the Revised Final Permit sets forth the Performance Standards for Rest of River floodplain soil and vernal pools. Section II.B.3.a.(2)(a) requires GE to conduct additional sampling of floodplain soil (as needed) to determine the total PCB exposure point concentration (EPC) for each EA using a Thiessen polygon approach. Footnote 12 of the Revised Final Permit further states that, for the non-residential EAs, "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 95% 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." These methods are summarized in Section 2.2. For vernal pools, Section II.B.3.b.(2)(b) of the Revised Final Permit requires GE to conduct additional sampling of vernal pools to generate baseline data on the concentrations of total PCBs.<sup>1</sup> In addition to the sampling requirements, the Revised Final Permit specifies numerical Performance Standards (i.e., soil PCB concentrations) for the floodplain EAs (summarized in Tables 1 and 2 of the Revised Final Permit) and for vernal pools (specified in Section II.B.3.b.(1)(a) of the Revised Final Permit).

<sup>&</sup>lt;sup>1</sup> That provision also requires GE to perform an ecological characterization of the vernal pools, including collection of information on the presence and abundance of animal species, as well as water and soil chemistry. That characterization work will be performed as part of the Baseline Restoration Assessment to be conducted under the Final Revised Permit and the forthcoming Revised Rest of River Statement of Work.

## 1.4 Work Plan Organization

The remainder of this Revised Non-Residential Floodplain PDI Work Plan is organized into the following three sections:

- Section 2 provides a summary and assessment of the existing floodplain soil PCB data for Reach 5A and a discussion of the method of calculation of floodplain EPCs for the non-residential EAs, where appropriate, based on the soil PCB sampling data combined with certain other spatial features, such as human accessibility mapping established by EPA in its *Human Health Risk Assessment* (HHRA; EPA 2005).
- Section 3 contains a summary of Data Quality Objectives (DQOs) for the PDI of the non-residential EAs, a description of the approach used to identify proposed additional floodplain soil sample locations to meet those DQOs, an identification of the proposed sample locations in the non-residential EAs in the Reach 5A floodplain, and a brief summary of the sampling and analytical procedures.
- Section 4 provides a schedule for performance of the floodplain soil sample collection activities described herein and a description of how the floodplain PDI data collection activities and analytical results for the Reach 5A non-residential EAs will be reported.

## 2 Assessment of Existing Reach 5A Floodplain Soil PCB Data

#### 2.1 Data Summary

A number of studies dating back to the late 1980s were conducted to characterize PCB concentrations in floodplain soil. Between 1988 and 1998, GE collected over 1,000 floodplain soil samples along the Massachusetts portion of the Rest of River, nearly 500 of which were located in Reach 5A. An additional comprehensive sampling of the Rest of River floodplain was conducted by EPA as part of its Supplemental Investigation (SI) between 1998 and 2002. EPA collected nearly 5,000 floodplain soil samples (including in vernal pools) during the SI; approximately 1,400 of these samples were collected in Reach 5A. Following the SI, GE collected approximately 100 soil samples in 2005 to further characterize the extent of PCBs in certain portions of the Rest of River floodplain, including approximately 40 in Reach 5A.

The above-described soil data collected within the Rest of River floodplain formed the basis for the floodplain evaluations performed for the *Housatonic River – Rest of River, Revised Corrective Measures Study Report* (RCMS; Arcadis, Anchor QEA, and AECOM 2010). The use of these data (which was previously approved by EPA), including the earlier "historical" floodplain soil samples, was deemed appropriate for the RCMS evaluations because floodplain soils are not as dynamic a medium as surface water or sediment and are thus not expected to have significant changes in PCB concentrations over time.

In addition to these data, GE collected nearly 1,700 floodplain soil PCB samples (approximately 700 in Reach 5A) between 2013 and 2015 in a PDI for the Removal Action Area known as the Housatonic River Floodplain Current Residential Properties Downstream of Confluence – Actual/Potential Lawns (hereafter referred to as "Downstream Floodplain Residential A/P Lawn Properties"). Many of those properties are located adjacent to non-residential EAs; and in some cases, the samples collected under that program have Thiessen polygons extending into the non-residential EAs. Thus, the data from those properties can be and have been used to supplement the interpolation of soil PCB concentrations within the EAs (as described in Section 2.2) near the boundaries with these residential properties, at locations where the elevation, habitat, and flood characteristics are similar in the adjacent residential and non-residential areas (as provided in Condition #2 in EPA's April 26, 2021 conditional approval letter for the 2017 Work Plan).

In addition, GE collected 450 floodplain soil PCB samples in Reach 5A during 2020 in the PDI for the Reach 5A floodplain residential properties subject to the residential Performance Standards (hereafter referred to as "Reach 5A Floodplain Residential Properties"). As with the Downstream Floodplain Residential A/P Lawn Properties, many of the Reach 5A Floodplain Residential Properties are located adjacent to (or overlap with) non-residential EAs; and some of the samples collected under that program have Thiessen polygons extending into the EAs. Thus, the data from those

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properties can also be used to supplement the interpolation of soil PCB concentrations within the EAs at locations where the elevation, habitat, and flood characteristics are similar in the adjacent residential and non-residential areas.

The data collection proposed in this Revised Non-Residential Floodplain PDI Work Plan will supplement the historical floodplain soil data set considered in the RCMS as well as the additional relevant data collected since then as part of the sampling of the Downstream Floodplain Residential A/P Lawn Properties and the Reach 5A Floodplain Residential Properties. The existing and proposed data will be used during the Rest of River remedial design to delineate non-residential floodplain remediation areas based on comparison of the EPCs to the applicable Performance Standards.

# 2.2 Floodplain Exposure Point Concentrations Based on Existing PCB Data

EPA's HHRA divided the Rest of River floodplain into 90 EAs (excluding Downstream Floodplain Residential A/P Lawn Properties) for the assessment of direct human contact with floodplain soils. Although those EAs were initially defined by EPA starting with property boundaries, the EAs covered by this work plan are limited to the portions of the floodplain between the edge of the Housatonic River and the Rest of River floodplain boundary.<sup>2</sup> Specific non-residential exposure scenarios and receptors were then assigned to each such EA. Several of those EAs contain overlying direct contact subareas, which are typically characterized by a different and/or more frequent exposure scenario.<sup>3</sup> In addition, in the RCMS, GE identified "heavily used subareas" within EAs that were identified as "frequently used" in the *Housatonic River – Rest of River, Corrective Measures Study Proposal* (CMSP; Arcadis BBL and QEA 2007). These heavily used subareas are referred to as "Frequently Used Subareas" in the Revised Final Permit and are also referred to as such in this Revised Non-Residential Floodplain PDI Work Plan. It should be noted that the Frequently Used Subareas were originally defined at a relatively coarse spatial resolution in the CMSP based on aerial photography; the actual extent of the area that appears to be frequently used was surveyed in the field in 2019, as documented in GE's Final Accessibility Report.

<sup>&</sup>lt;sup>2</sup> As described in Section 4.3.5 of the HHRA, EAs were defined by EPA starting with individual tax parcels. The parcels were kept intact, subdivided, or combined with adjacent parcels based on similarity of land use, similarity of ownership, and/or number of available soil samples. In many cases, parcel boundaries extend beyond the lateral boundaries of the Rest of River (defined in the CD as the 1 milligram per kilogram PCB isopleth in Reaches 5 and 6, which is approximated by the 10-year floodplain, and as the extent of PCBs in Reaches 7 through 9); however, the EAs evaluated for potential soil remediation are limited to the portion of the floodplain between the edge of the Housatonic River and the Rest of River floodplain boundary.

<sup>&</sup>lt;sup>3</sup> Specifically, as described in the HHRA, several EAs were divided into subareas based on the observation that distinct activities could occur at different locations within the EA. In these cases, a risk assessment was conducted for the activity in the subarea in addition to the activity in the EA as a whole.

Of the 90 EAs identified in the HHRA, 38 are located within Reach 5A, as shown on Figure 2-1. However, as required by the Revised Final Permit, the properties that comprise six of those EAs (EAs 3, 9, 23, 25, 28, and 30) have subsequently been sampled as part of the PDI sampling of the Reach 5A Floodplain Residential Properties and will be evaluated as part of those properties under the residential Performance Standards.<sup>4</sup> Although those six EAs remain listed in Table 1 of the Revised Final Permit, their sampling and evaluation will be conducted as part of the Reach 5A Floodplain Residential Properties, and the need for remediation at them will be governed by the residential Performance Standards in Table 3 of the Revised Final Permit, rather than the non-residential Performance Standards in Table 1. Thus, those EAs are not covered by this Revised Non-Residential Floodplain PDI Work Plan. The 32 remaining non-residential EAs and three Frequently Used Subareas located within Reach 5A are identified on Figure 2-1. As provided in Section II.B.3.a.(1) of the Revised Final Permit, EPCs for these EAs are to be calculated for the top one foot of soil, while those for the Frequently Used Subareas are to be calculated for the top three feet of soil.

Consistent with Footnote 12 of the Revised Final Permit, EPCs for the non-residential EAs were (and will continue to be) calculated using the methods described in Appendix D to GE's CMSP and subsequent revisions described in Section 4.4 of the RCMS. As described in the CMSP, calculation of the EPCs requires incorporation of several spatially varying features within the floodplain. To facilitate these calculations, a Geographic Information System (GIS)-based application was developed that employs a raster data model, whereby floodplain features, such as locations of EAs and soil PCB concentration data (among others described below), are translated to 3×3-meter grid cells over the floodplain.

The spatial interpolation method using Thiessen polygons was utilized to generate a continuous PCB data coverage over the portions of the floodplain that include or affect the non-residential EAs (referred to in the rest of this section as "the subject floodplain"). Consistent with the method used by EPA in the HHRA, generation of Thiessen polygons in the subject floodplain for Reaches 5 and 6 considered topographic and hydrologic information in the interpolation process. Because PCBs are typically transported onto the floodplain during overbank flow conditions, the PCB distribution in floodplain soils is linked to the topographic and hydrologic features that also influence the distribution of wetland habitats. In Reaches 5 and 6, six "super habitats" (i.e., grouped habitats having similar characteristics, developed from the Woodlot habitat survey [Woodlot 2002]) were introduced by EPA in the HHRA to guide the spatial interpolation of PCBs in the subject floodplain. However, as documented in GE's 2020 Final Accessibility Report, portions of the Reach 5A floodplain had significant changes in super habitat boundaries since the 2002 Woodlot habitat survey resulting

<sup>&</sup>lt;sup>4</sup> Those properties are Tax Parcels I6-1-42 (EA 3), J6-2-3 (EA 9), J3-1-11, -12, -13, and -14 (EA 23), J3-2-2, -3, -4, -5, and -6 (EA 25), K3-1-2 (EA 28), and K2-1-10 (EA 30).

from hydrologic changes; therefore, GE updated the super habitat mapping using a combination of high-resolution aerial imagery of the Reach 5A floodplain collected using an unmanned aerial system (i.e., drone survey) in 2018 and field surveys. Figure 2-2 shows the EAs and revised 2018 super habitats within Reach 5A.

To generate the spatially interpolated PCB data coverage over the entire subject floodplain, Thiessen polygons were first generated for each individual super habitat using only the data from within that super habitat boundary. The Thiessen polygons generated for all six super habitats were then merged to form a single PCB polygon raster coverage for the subject floodplain in Reaches 5 and 6. For illustrative purposes, Figure 2-3 shows 0- to 6-inch (panel A) and 6- to 12-inch (panel B) PCB polygons interpolated using this method for the EAs in the subject floodplain.<sup>5</sup>

The Rest of River floodplain contains numerous samples at the surface (particularly in Reaches 5 and 6); however, sample density decreases with depth. In general, the Housatonic River floodplain soil cores were processed in six-inch intervals. To account for the variable sample density with depth, PCB polygons were generated in six-inch intervals, and the 0- to 1-foot and 0- to 3-foot average PCB concentrations for a given EA or Frequently Used Subarea, respectively, were computed by vertically averaging the PCB polygon raster grids from the appropriate depth layers. For illustration, Figure 2-3 shows the calculated 0- to 12-inch average PCB concentration (panel C).

Using the interpolated PCB data set, average soil PCB concentrations were then computed for each EA or Frequently Used Subarea as the 95% Upper Confidence Limit (UCL) on the spatially weighted mean of the data for that EA or subarea. Consistent with the method developed by EPA in the HHRA and used by GE in the RCMS, the 95% UCL was calculated using the Modified Halls Bootstrap Method (described in HHRA, Volume I, Attachment 4). Once the UCL was calculated for a given EA or Frequently Used Subarea, it was compared to the maximum data value within that area, and the lower of those two values was used as the EPC (i.e., the EPC is not allowed to exceed the maximum interpolated value within a given area). The method developed by EPA for the 95% UCL calculations also included application of accessibility weighting factors (hereafter referred to as "use factors") in Reaches 5 and 6. Specifically, the subject floodplain in those reaches was mapped into four accessibility categories (walkable, wadable, difficult, and boatable) in the HHRA, corresponding to weighting factors of 1.0, 0.2, 0.2, and 0.0 for each of these areas, respectively. The areas

<sup>&</sup>lt;sup>5</sup> Since the interpolation shown on this figure is presented solely to illustrate the procedure to be used and will be replaced by an interpolation using the additional data collected, it was generated using existing floodplain soil PCB data and the original super habitats based on the 2002 Woodlot habitat survey (not the revised 2018 super habitats). Also, for purposes of this Revised Non-Residential Floodplain PDI Work Plan, it was not necessary to develop polygons and existing EPCs for depth increments down to three feet in the Frequently Used Subareas in Reach 5A. However, the existing sampling data at depths down to three feet within or near those subareas were considered in assessing the need for and extent of PDI sampling in the 1- to 3-foot depth increment in those subareas.

corresponding to these accessibility categories were also updated consistent with the revised 2018 super habitat mapping in Reach 5A and are shown on Figure 2-2. Consistent with the methodology applied by EPA in the HHRA (described in Section 4.4.1.1.1 of the HHRA), these use factors were applied as multipliers on the interpolated PCB concentrations "to account for the variation in accessibility and overall attractiveness of these habitats to children and adults engaged in recreational or residential and other activities" (e.g., areas considered walkable would be accessed more frequently than areas considered difficult to access).

## 3 Floodplain Pre-Design Investigation Activities

## 3.1 Data Quality Objectives

Section II.B.3.a.(2)(a) of the Revised Final Permit requires GE to conduct additional sampling of floodplain soil as needed to develop EPCs for the non-residential EAs. Specific DQOs for the floodplain PDI soil sampling and analysis activities described herein are as follows:

- DQO 1. Obtain soil PCB data within the Reach 5A floodplain to supplement the existing floodplain soil PCB data set, as appropriate, to provide ample spatial coverage and sample density that captures the variability in floodplain soil PCB concentrations, and to be used for calculation of representative 0- to 1-foot PCB EPCs for the non-residential EAs in the Reach 5A floodplain and 0- to 3-foot PCB EPCs for the Frequently Used Subareas in that reach;
- DQO 2. Provide a dataset of 0- to 1-foot and 0- to 3-foot EPCs that can be used to demonstrate that the applicable Performance Standards for the non-residential EAs in the Reach 5A floodplain either are currently achieved or will be achieved through the performance of remediation activities to be specified during remedial design; and
- DQO 3. Provide sufficient floodplain soil PCB data to support future remedial design and remedial action evaluations and work plans for the non-residential EAs in the Reach 5A floodplain. While supplemental data may be needed, the combined data sets should support delineation of the remediation extent to meet applicable Performance Standards, including preliminary access and constructability considerations.

The data collection activities that will be performed to achieve these DQOs are described in Section 3.2. Section 3.2.1 presents the approach used to determine the number and locations of proposed floodplain PDI sampling in each of the subject EAs. This approach is primarily grid-based, with the appropriate grid spacing informed by an examination of the degree of spatial correlation in the existing floodplain soil PCB data set.

## 3.2 Pre-Design Soil Sampling Activities for PCBs

## 3.2.1 Approach to Identifying Proposed Sampling Locations

For each of the 32 non-residential EAs and the three Frequently Used Subareas in Reach 5A, the locations and depths of prior samples and the corresponding PCB concentrations were reviewed. Based on the results of that review, additional pre-design soil sampling locations were selected for each EA as needed to meet the above DQOs. As noted above, sampling locations were generally determined using a grid-based sampling approach, and grid spacing was informed by the results of an evaluation of spatial correlation in the existing floodplain soil PCB data set. The presence of spatial correlation reduces the need for closely spaced samples. For overall program efficiency,

adjacent samples can be separated by a distance over which spatial correlation is limited or nonexistent.

Consistent with guidance issued by the Interstate Technology and Regulatory Council (ITRC) related to Geospatial Analysis for Optimization at Environmental Sites (ITRC 2021), a geostatistical analysis of the existing surface soil (0- to 6-inch) PCB data in the Reach 5A floodplain was conducted to inform the initial grid spacing. Figure 3-1a shows a semivariogram that was constructed using those data.<sup>6</sup> The semivariogram summarizes the degree of correlation between sample points based on the distance between them. The horizontal axis on Figure 3-1a represents the distance between pairs of data points. The vertical axis presents the semivariance. Semivariance is inversely related to the degree of correlation; low variance at short spacings (near the origin on the horizontal axis) means that data points are well correlated. The semivariance increases as distance between neighboring points increases, achieving approximately the population variance at a spacing of about 800 feet (termed the range). That is, points spaced more than 800 feet apart are not correlated. This suggests that a spacing of 800 feet would eliminate all or nearly all correlation between adjacent sampling points. The ITRC guidance suggests the application of a more conservative sample spacing, approximately equal to half the range (or approximately 400 feet). However, based on the relative size of the EAs and various super habitats in the Reach 5A floodplain, an initial grid spacing of 400 feet was judged to be too coarse, and a slightly more conservative value of 300 feet was selected.

In accordance with Condition #5b in EPA's April 26, 2021 conditional approval letter, sampling density was increased nearer to the river because of the greater likelihood of flooding and thus the potential for higher PCB concentrations and more variability. Figure 3-1b shows the relationship between existing surface soil (0- to 6-inch) PCB concentrations and distance from the river shoreline in Reach 5A. The black line represents median concentrations of data binned by distance from the river. The median concentrations are approximately 10 to 20 mg/kg, with no consistent trend, until a distance of approximately 100 feet from the river shoreline, beyond which concentrations generally decline. Based on this pattern in the data, the spacing between samples was reduced to approximately 100 feet of the river.

The observed decrease in soil PCB concentrations with distance away from the river is expected given that floodplain inundation frequency generally decreases with distance from the river. However, in

<sup>&</sup>lt;sup>6</sup> The semivariogram was created using GeoR. The GeoR package uses the variogram estimator suggested by Hawkins and Cressie (1984), which provides a robust alternative to the classical estimator (Cressie 1993). To construct the semivariogram, the total PCB data were log-transformed. State Plane coordinates were used. The maximum lag was set to approximately 1,400 feet and was divided into 19 bins, producing a lag spacing of 78 feet. The nugget (i.e., the semivariance at a distance of zero) was approximately 1. The red symbols on this figure are averages of the data; the number of pairs of points included in each average is posted. The horizontal blue dashed line represents the overall population semivariance (equal to 2.9), calculated with the inclusion of all samples within Reach 5A no matter the spacing between them.

recognition of the fact that that floodplain inundation frequency is also a function of topography and elevation, the 100-foot sample spacing was applied in some limited low-elevation areas that extended more than 200 feet away from the river shoreline.

In addition to the initial 100-foot/300-foot sample spacing described above, sample spacing was modified as follows:

- Condition #6 in EPA's April 26, 2021 letter states that proposed sampling locations need to
  provide adequate spatial coverage in each super habitat area and avoid being projected
  across non-contiguous super habitats (unless those super habitats are relatively close to one
  another) or across the river. Based on this directive, a minimum of two sample locations were
  placed in each unique super habitat area, even if it required locating samples closer together
  than 100 or 300 feet (based on distance from the river). Judgments regarding whether or not
  adjacent (non-contiguous) super habitats were close enough to each other to be considered
  one area were made on a case-by-case basis.
- Proposed sample locations within vernal pools were spaced approximately 100 feet apart, regardless of distance from the river. Also, a minimum of two sample locations were placed in each vernal pool, even if it required locating samples closer than 100 feet apart.
- Proposed sample locations within Frequently Used Subareas were spaced approximately 100 feet apart, regardless of distance from the river.

With respect to vertical segmentation, Condition #7 in EPA's April 26, 2021 letter states that, in large areas where only the 0- to 6-inch interval (or only the 6- to 12-inch interval) was previously sampled, GE needs to conduct additional sampling as appropriate to provide data for the full 0- to 12-inch interval. It should be noted that there are many areas of the Reach 5A floodplain where samples were collected only from the 0- to 6-inch interval, and those sample locations are spaced much closer together than the 100-foot/300-foot grid spacing that was deemed appropriate to achieve the DQOs (described above). As such, it is not necessary to provide data for the full 0- to 12-inch interval at all of those existing locations. However, to support calculation of EPCs that use the entire historical data set, new PDI samples representing the top foot of soil will be segmented into 0- to 6-inch and 6- to 12-inch intervals. At selected locations where the 0- to 6-inch interval already exists, only the 6to 12-inch interval will be submitted for PCB analysis initially, and the new 0- to 6-inch interval will be archived for potential future analysis if necessary based on the result from the 6- to 12-inch interval. At proposed locations within the Frequently Used Subareas where sampling is required to a depth of three feet, samples will be collected in 0- to 6-inch, 6- to 12-inch, 12- to 24-inch, and 24- to 36-inch intervals. At selected locations where the 0- to 6-inch and 6- to 12-inch intervals already exist, only the 12- to 24-inch and 24- to 36-inch intervals will be submitted for PCB analysis initially, and the new 0- to 6-inch and 6- to 12-inch intervals will be archived for potential future analysis if necessary based on the results from the deeper intervals.

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Section 4.2.2 provides a detailed description of PDI sampling needs in each non-residential EA. Each subsection includes a summary of the EA, including a count and list of properties (i.e., tax parcels) or portions of properties within the EA, the exposure scenario(s) evaluated in the HHRA and RCMS for that EA (including any subarea[s] and/or Frequently Used Subareas evaluated in the RCMS), and a summary of the existing soil PCB data coverage. Following this background information, the proposed PDI sample locations are specified. Figures 3-2 through 3-25 show the following for each non-residential EA:

- EA and subarea boundaries;<sup>7</sup>
- Revised 2018 super habitats, accessibility categories, and Frequently Used Subareas (where present), as documented in GE's 2020 Final Accessibility Report;
- Vernal pools, as defined in GE's Final Vernal Pool Report (AECOM 2020), as modified by GE's subsequent re-evaluation (GE 2021);
- Core Area 1 habitat, if any;<sup>8</sup>
- Existing floodplain soil PCB samples, including: (1) the historical EPA and GE data described in Section 2.1 that formed the basis for the floodplain evaluations performed for the RCMS in 2010;<sup>9</sup> (2) the PDI data from the Downstream Floodplain Residential A/P Lawn Properties; and (3) the PDI data from the Reach 5A Floodplain Residential Properties;
- An approximate 100-foot grid and a line showing a distance of approximately 200 feet from the river shoreline (to provide a visual indication of the targeted inter-sample spacing, not to specifically determine sample locations); and
- Proposed PDI sample locations at the non-residential EAs.

<sup>&</sup>lt;sup>7</sup> EA boundaries for EAs that are adjacent to the river were adjusted to match the revised river shoreline shown in GE's 2020 Final Accessibility Report. The original EA boundaries obtained from EPA were developed based on the river hydrology available at the time of the risk assessment (approximately 2001); however, GE's recent morphology surveys show that the position of the river shoreline has changed since that time.

<sup>&</sup>lt;sup>8</sup> As defined in the Revised Final Permit, Core Area 1 habitat consists of areas identified by MassDFW as areas with "the highest quality habitat for species that are most likely to be adversely impacted by PCB remediation activities," most of which species are plants because they are not mobile (Attachment B to Revised Final Permit).

<sup>&</sup>lt;sup>9</sup> As documented in GE's Response to Specific Comment 98 in its *Response to EPA's Interim Comments on CMS Report* (GE 2009), this historical PCB concentration data coverage was based on the floodplain data set provided by EPA on October 2, 2008, that was deemed appropriate by EPA for use in the RCMS evaluations.

## 3.2.2 Proposed Sampling Locations

Sections 3.2.2.1 through 3.2.2.28 provide summary information regarding each of the 32 non-residential EAs in Reach 5A<sup>10</sup> and describe the proposed PDI sample locations, sample depths, and rationale for the number, location, and depth of the samples proposed in each such EA.

#### 3.2.2.1 Exposure Area 1

EA 1 occupies approximately 15 acres and is located near the Confluence. This EA consists of a portion of Pittsfield Tax Parcel H6-4-105 (owned by MassDFW), as shown on Figure 3-2. EA 1 was classified by EPA as a medium-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). A relatively large portion of this EA (nearly half) is considered to be difficult to access, with a small portion considered boatable. There are four vernal pools within this EA, but no Core Area 1 habitat or Frequently Used Subareas.

Previous soil PCB sampling in EA 1 resulted in the analysis of 64 samples from the 0- to 6-inch depth interval and 29 samples from the 6- to 12-inch depth interval. Most of the existing data are located in the northern portion of the EA (Figure 3-2). GE proposes to collect samples from the top foot of soil at 63 locations within this EA. The locations of those proposed samples are shown on Figure 3-2. At 55 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining eight locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.2 Exposure Area 2

EA 2 occupies approximately 31 acres consisting of Pittsfield Tax Parcels I6-1-41 and I6-1-27 (both owned by MassDFW), as shown on Figure 3-3. EA 2 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). This EA contains a number of trails, including two maintained utility easements that are evaluated separately as EAs 4 and 61 (see Section 3.2.2.3). EPA also identified two subareas within EA 2 (Subareas 2a and 2b). Subarea 2a is located in the northwest portion of EA 2 and was classified as a low-use general recreation area for older children, and Subarea 2b is an area located near residences and trails that was classified as a high-use general recreation area for older children. There are eight vernal pools within this EA. Most of EA 2 is

<sup>&</sup>lt;sup>10</sup> As noted above, six of the identified EAs in Reach 5A (EAs 3, 9, 23, 25, 28, and 30) have now been sampled and will be evaluated as part of the Reach 5A Floodplain Residential Properties. Thus, even though those EAs remain listed in Table 1 of the Revised Final Permit, there is no need for separate sampling and evaluation of them as non-residential EAs; therefore, those EAs are thus not included in this section.

classified as walkable. There is no Core Area 1 habitat and no Frequently Used Subareas within this EA.

Previous soil PCB sampling in EA 2 resulted in the analysis of 105 samples from the 0- to 6-inch depth interval and 35 samples from the 6- to 12-inch depth interval. Most of the existing 0- to 6-inch soil data are located along the northern and eastern boundaries of the EA at a considerable distance away from the river (Figure 3-3). A similar clustering of the data exists in the 6- to 12-inch depth interval, and the data density in this depth interval is considerably lower. GE proposes to collect soil samples from the top foot of soil at 66 locations within EA 2 (including nine locations in Subarea 2a and three locations in Subarea 2b). The locations of those proposed samples are shown on Figure 3-3.<sup>11</sup> At 47 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining 19 locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.3 Exposure Areas 4 and 61

EA 4 is a 3.2-acre maintained utility easement located in Pittsfield that intersects portions of EA 2 (Pittsfield Tax Parcel I6-1-41), EA 5 (Pittsfield Tax Parcels I6-1-1 and I6-2-1), and EA 7 (Pittsfield residential Tax Parcels I6-3-13 and I6-3-1), as shown on Figure 3-4. Because recreational activities were observed in this area, it was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for young child, older child, and adult receptors. A portion of this EA also includes an established foot trail that is defined as a Frequently Used Subarea in the Revised Final Permit. EA 61 is a 3.3-acre utility easement located on Pittsfield Tax Parcel I6-1-27 that is maintained for overhead wires. This EA overlaps the portion of EA 4 that runs north to south (i.e., the portion containing the Frequently Used Subarea) and extends farther south to the river. EA 61 was evaluated in the HHRA and RCMS for the utility worker scenario. Both EAs 4 and 61 are considered walkable, are located outside of Core Area 1 habitat, and contain no vernal pools.

GE proposes to collect PDI soil samples to a depth of one foot at six locations in EAs 4 and 61 and soil samples to a depth of three feet at 27 locations in these EAs, as shown on Figure 3-4.<sup>12</sup> At four of

<sup>&</sup>lt;sup>11</sup> Figure 3-3 also shows 18 proposed soil sampling locations to a depth of three feet within the boundary of EA 2. These samples are located within the Frequently Used Subarea portion of EA 4 and are discussed in Section 3.2.2.3.

<sup>&</sup>lt;sup>12</sup> Nine of these 27 three-foot sampling locations are within the Frequently Used Subarea portion of EA 4. The remaining 18 locations are within the portion of EA 4 that runs east to west associated with the City of Pittsfield sewer right-of-way. In a June 16, 2020 conditional approval letter on a prior version of GE's Final Accessibility Report, EPA noted (in Condition #4) that because this area is overgrown with dense vegetation, EPA does not consider this a Frequently Used Subarea in its current condition. However, EPA directed that, because the City of Pittsfield could perform maintenance in the future that would remove this dense vegetation, which could lead to a significant increase in recreational use, GE should collect samples to a depth of three feet in this area during the non-residential exposure area sampling program.

the top-foot soil sampling locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining two top-foot sampling locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived. At five of the 27 three-foot sampling locations, 0- to 6-inch and 6- to 12-inch data already exist, so only the 12- to 24-inch and 24- to 36-inch intervals will be submitted for PCB analysis initially. Likewise, at four of the 27 three-foot sampling locations, 0- to 6-inch data already exist, so only the 6- to 12-inch, 12- to 24-inch and 24- to 36-inch intervals will be submitted for PCB analysis initially. The overlying intervals from these three-foot sampling locations will be archived.

#### 3.2.2.4 Exposure Area 5

EA 5 is an approximately 2.5-acre area owned by the City of Pittsfield and includes most of Pittsfield Tax Parcels I6-1-1 and I6-2-1, as shown on Figure 3-5. EA 5 is transected by the EA 4 utility easement (discussed in Section 3.2.2.3). EA 5 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). Most of this EA is considered walkable, with the exception of one vernal pool, and none of it is considered Core Area 1 habitat.

Previous soil PCB sampling in EA 5 resulted in the analysis of 19 samples from the 0- to 6-inch depth interval and 13 samples from the 6- to 12-inch depth interval. The spatial coverage of the existing data is concentrated close to the river and along the EA 4 utility easement (Figure 3-5). GE proposes to collect soil samples from the top foot at seven locations within this EA, as shown on Figure 3-5. At six of those locations, both the 0- to 6-inch and 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining one location (which has existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.5 Exposure Area 6

EA 6 is an approximately 3.8-acre area that consists of a small portion of Pittsfield Tax Parcel I5-1-1 located adjacent to Holmes Road (owned by Miss Hall's School), as shown on Figure 3-6. This EA is limited to a relatively narrow area along the river due to steep elevation change. EA 6 was evaluated in the RCMS using the low-use general recreation exposure scenario for adult receptors (RCMS Table 4-1). Most of this EA is considered walkable, with the exception of the one vernal pool located within this EA. There are no Frequently Used Subareas within this EA, and none of it is considered Core Area 1 habitat.

Previous soil PCB sampling in EA 6 resulted in the analysis of nine samples from the 0- to 6-inch depth interval and six samples from the 6- to 12-inch depth interval (Figure 3-6). Sample density in this EA is relatively low, particularly in the 6- to 12-inch depth interval. GE proposes to collect soil samples from the top foot at 25 locations within this EA to supplement the existing data coverage.

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The locations of those proposed samples are shown on Figure 3-6. At 22 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining three locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.6 Exposure Area 7

EA 7 is a nearly six-acre area consisting of portions of Pittsfield Tax Parcels I6-3-1 and I6-3-13 (both privately owned residential parcels), as shown on Figure 3-7. EA 7 is also transected by the EA 4 utility easement (discussed in Section 3.2.2.3). EA 7 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). Most of this EA is considered walkable; however, it contains seven vernal pools and other areas that are considered difficult to access. None of it is considered Core Area 1 habitat. It should also be noted that the portion of this EA comprising residential Parcel I6-3-13 (in the southwest corner of the EA) is being addressed separately as part of the Reach 5A Floodplain Residential Properties and has not been considered in this work plan.

Previous soil PCB sampling in EA 7 resulted in the analysis of 25 samples from the 0- to 6-inch depth interval and 15 samples from the 6- to 12-inch depth interval. GE proposes to collect soil samples from the top foot at 33 locations within this EA to supplement the existing data coverage, as shown on Figure 3-7. At 28 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining five locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.7 Exposure Area 8

EA 8 is a 0.6-acre area of Pittsfield Tax Parcel J6-3-2 (owned by the Massachusetts Audubon Society) located adjacent to Holmes Road, as shown on Figure 3-8. EA 8 was evaluated in the HHRA and RCMS using the recreational canoeist exposure scenario for older child and adult receptors (RCMS Table 4-1). All of EA 8 is considered walkable, and there are no vernal pools, Core Area 1 habitat, or Frequently Used Subareas within it.

Previous soil PCB sampling in EA 8 resulted in the analysis of 12 samples from the 0- to 6-inch depth interval and six samples from the 6- to 12-inch depth interval (Figure 3-8). Sampling density in this EA is generally sufficient; however, GE proposes to collect PDI samples from the top foot at four locations to confirm PCB concentrations measured historically. The locations of those proposed samples are shown on Figure 3-8. At three of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining one location (which has existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.8 Exposure Area 10

EA 10 is a 59-acre area located along Holmes Road that consists of a portion of Pittsfield Tax Parcel J6-4-2, as shown on Figure 3-9. This parcel is owned by the Massachusetts Audubon Society and is the location of the Canoe Meadows Wildlife Sanctuary. EA 10 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for young child and adult receptors (RCMS Table 4-1). EA 10 contains a trail network that winds through the woods, fields, and wetlands and along the edge of the river that EPA has identified as a subarea (Subarea 10a). This subarea was evaluated in the RCMS using the same exposure scenario and receptors evaluated for the main EA. EA 10 also includes a separate Subarea 10b that was established subsequent to the HHRA under the terms of the 2020 Settlement Agreement. A relatively large portion of this EA (more than half) is considered to be difficult to access or boatable. It contains two relatively small vernal pools, and approximately 7.5 acres of the southwestern corner of this EA are considered Core Area 1 habitat. There are no Frequently Used Subareas within this EA.

Previous soil PCB sampling in EA 10 resulted in the analysis of 52 samples from the 0- to 6-inch depth interval and 25 samples from the 6- to 12-inch depth interval (Figure 3-9). GE proposes to collect soil samples from the top foot at an additional 107 locations within this EA to supplement the existing data set in this EA (Figure 3-9). At 90 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining 17 locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.9 Exposure Area 11

EA 11 is a 2.5-acre area that consists of a majority of Pittsfield Tax Parcel J5-2-110 (owned by MassDFW), as shown on Figure 3-10. A portion of EA 11 includes a maintained utility easement (evaluated separately as EA 12 that includes a Frequently Used Subarea; see Section 3.2.2.10). EA 11 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). All of EA 11 is considered walkable, and there are no vernal pools or Core Area 1 habitat in this area.

Previous soil PCB sampling in EA 11 resulted in the analysis of 18 samples from the 0- to 6-inch depth interval and 13 samples from the 6- to 12-inch depth interval (Figure 3-10). GE proposes to collect additional soil samples from the top foot at 10 locations within this EA, as shown on Figure 3-10. At six of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining four locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.10 Exposure Area 12

As described in the HHRA, EA 12 is a 5.8-acre linear area that consists of two maintained utility easements located in Pittsfield that begin at Holmes Road and extend approximately 1.5 miles downstream to the Pittsfield WWTP. Because of the length of this EA, it is shown on the figures corresponding to the EAs traversed by it (Figures 3-10, 3-11, 3-12, 3-14, 3-15, 3-18, and 3-19). The first easement is oriented north-south and crosses portions of multiple state-owned and privately owned parcels, including EAs 11, 13, 16, 17, 19, 23, 24, and 26. The second easement runs east-west across EA 20 (and overlaps EA 63; see Section 3.2.2.18). Both easement areas contain underground pipes. EA 12 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for young child, older child, and adult receptors. This EA also includes an established foot trail that is defined as a Frequently Used Subarea in the Revised Final Permit. Most of EA 12 is considered walkable, does not intersect any vernal pools, and is located outside of Core Area 1 habitat.

Historical data density and spatial coverage for EA 12 (from samples within or adjacent to that EA) are generally good in both the 0- to 6-inch and 6- to 12-inch depth intervals (see Figures 3-10, 3-11, 3-12, 3-14, 3-15, 3-18, and 3-19). However, existing samples in the 1- to 3-foot depth interval (required to calculate a 0- to 3-foot EPC for the Frequently Used Subarea) are sparser. Some locations were sampled to a depth of three feet in portions of EA 12 that intersect with Reach 5A Floodplain Residential Properties; this prior sampling was considered when selecting sample locations in this work plan. GE proposes to collect PDI soil samples to a depth of three feet at 46 locations in the Frequently Used Subarea portion of EA 12 to supplement the existing data. These proposed sample locations are shown on Figures 3-10, 3-11, 3-12, 3-14, 3-15, and 3-19.

#### 3.2.2.11 Exposure Area 13

EA 13 is an approximately 5.9-acre area located off Holmes Road in Pittsfield and consists of Pittsfield Tax Parcel J5-2-105 (owned by MassDFW), as shown on Figure 3-11. EA 13 was classified as a high-use area by EPA and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). More than half of this EA is considered to be difficult to access, while the remainder is considered walkable. This EA contains one vernal pool, but no Core Area 1 habitat or Frequently Used Subareas.

Previous soil PCB sampling in EA 13 resulted in the analysis of 23 samples from the 0- to 6-inch depth interval (most of which are located within the vernal pool area) and nine samples from the 6- to 12-inch depth interval. GE proposes to collect soil samples from the top foot at 23 locations within this EA to supplement the existing data set. The proposed sample locations are shown on Figure 3-11. At 18 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining five locations (which have existing 0- to 6-inch

data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.12 Exposure Area 14

EA 14 is an approximately 4.1-acre area located along Holmes Road in Pittsfield and consists of a portion of Pittsfield Tax Parcel J5-2-5 (a privately owned residential property), as also shown on Figure 3-11. EA 14 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). A relatively large portion of this EA contains a vernal pool and other areas that are considered difficult to access. No part of this EA is considered Core Area 1 habitat, and this EA contains no Frequently Used Subareas.

Previous soil PCB sampling in EA 14 resulted in the analysis of 12 samples from the 0- to 6-inch depth interval (nearly all of which are located in the vernal pool) and only one sample from the 6- to 12-inch depth interval (Figure 3-11). GE proposes to collect soil samples from the top foot at 18 locations within this EA to supplement the existing data set in this EA. The proposed sample locations are shown on Figure 3-11. At 12 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining six locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.13 Exposure Area 15

EA 15 covers approximately 0.9 acre of Pittsfield Tax Parcel J5-2-6 (owned by MassDFW) along Holmes Road, as also shown on Figure 3-11. EA 15 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). Most of this EA is considered to be difficult to access. It contains one vernal pool, and there is no Core Area 1 habitat or Frequently Used Subareas within it.

Previous soil PCB sampling in EA 15 resulted in the analysis of three samples in both the 0- to 6-inch and 6- to 12-inch depth intervals (Figure 3-11). Given the relatively small size of this EA, GE proposes to collect soil samples from the top foot at three locations within the EA to supplement the existing data set. At each of those locations, both the 0- to 6-inch and 6- to 12-inch intervals will be submitted for PCB analysis.

#### 3.2.2.14 Exposure Area 16

EA 16 is an approximately 2.5-acre area that consists of a portion of Pittsfield Tax Parcel J5-2-11 (a privately owned residential parcel located along Holmes Road), as shown on Figure 3-12. The northwestern border of this EA is defined by the utility easement associated with EA 12. EA 16 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general

recreation exposure scenario for adult receptors (RCMS Table 4-1). Most of this EA is walkable with the exception of one vernal pool area, and there are no Frequently Used Subareas within it.

Previous soil PCB sampling in EA 16 resulted in the analysis of eight samples from the 0- to 6-inch depth interval and six samples from the 6- to 12-inch depth interval (Figure 3-12). To supplement the existing data set, GE proposes to collect soil samples from the top foot at seven locations in this EA, as shown on Figure 3-12. At six of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining one location (which has existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

In addition, a separate portion of Tax Parcel J5-2-11 was previously evaluated as an Actual/Potential Lawn as part of the Downstream Floodplain Residential A/P Lawn Properties. However, that evaluation did not involve any sampling or assessment of a subsequently identified vernal pool located on that portion of the property. Accordingly, that vernal pool will be sampled as part of the current PDI sampling, with the collection of samples from the top foot at two locations in that vernal pool, as shown on Figure 3-12. At each of those locations, both the, 0- to 6-inch and 6- to 12-inch intervals will be submitted for PCB analysis.

#### 3.2.2.15 Exposure Area 17

EA 17 is an approximately 8.5-acre area consisting of a portion of Pittsfield Tax Parcel J5-2-4 (a privately owned residential parcel), as also shown on Figure 3-12. The western portion of this EA consists of the utility easement included in EA 12. EA 17 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). Most of this EA is considered by EPA to be walkable, but it does contain some areas that are difficult to access, including one small vernal pool. EA 17 also contains approximately 1.8 acres of Core Area 1 habitat (immediately adjacent to the river). There are no Frequently Used Subareas within this EA.

Previous soil PCB sampling in EA 17 resulted in the analysis of 21 samples from the 0- to 6-inch depth interval and eight samples from the 6- to 12-inch depth interval (Figure 3-12). GE proposes to collect soil samples from the top foot at 18 locations within this EA, as shown on Figure 3-12. At 12 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining six locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.16 Exposure Area 18

EA 18 covers approximately 17 acres along East New Lenox Road and consists of a portion of Pittsfield Tax Parcel J3-2-203 (owned by GE), as shown on Figure 3-13. EA 18 was classified by EPA as a medium-use area and was evaluated in the HHRA and RCMS using the general recreation exposure

scenario for adult receptors (RCMS Table 4-1). Most of this EA is considered to be difficult to access or boatable. EA 18 contains 4.3 acres of Core Area 1 habitat but does not contain any vernal pools or Frequently Used Subareas.

Previous soil PCB sampling in EA 18 is relatively sparse, including 12 samples from the 0- to 6-inch depth interval and five samples from the 6- to 12-inch depth interval (Figure 3-13). Therefore, GE proposes to collect soil samples from the top foot at 37 locations throughout this EA to supplement the existing data set, as shown on Figure 3-13. At 31 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining six locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.17 Exposure Areas 19 and 62

EA 19 corresponds to the 36-acre Pittsfield Tax Parcel J4-3-13 (owned by MassDFW), as shown on Figure 3-14. Two utility easements run across this area, including the north-south easement that delineates the western boundary of this EA (defined previously as EA 12) and a second easement running east-west (defined as EA 62). EA 19 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors, while the utility easement (EA 62) was evaluated for the utility worker scenario (RCMS Table 4-1). Nearly half of this EA is considered to be difficult to access, and it includes six vernal pools. Also, nearly 70% of EA 19 is considered Core Area 1 habitat, and there are no Frequently Used Subareas within this EA.

Previous soil PCB sampling in EA 19 resulted in the analysis of 108 samples from the 0- to 6-inch depth interval and 18 samples from the 6- to 12-inch depth interval. While the number of existing 0- to 6-inch samples in this EA is relatively high, they are not evenly distributed across the EA. For example, many of the 0- to 6-inch samples are concentrated in the northeast portion of the EA (Figure 3-14). GE proposes to collect soil samples from the top foot at 77 locations throughout EA 19 to supplement the existing data set. The proposed sample locations are shown on Figure 3-14.<sup>13</sup> At 47 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining 30 locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived. These additional samples, together with the existing data, will also provide adequate data coverage for EA 62.

<sup>&</sup>lt;sup>13</sup> Figure 3-14 also shows proposed soil sampling location to a depth of three feet within the boundary of EA 12. These samples are located within the Frequently Used Subarea portion of EA 12 and were discussed in Section 3.2.2.10.

#### 3.2.2.18 Exposure Areas 20 and 63

EA 20 is an approximately 9.1-acre area consisting primarily of Pittsfield Tax Parcel J4-3-12 (owned by MassDFW), as shown on Figure 3-15. Two utility easements run across this area, including the north-south easement defined previously as EA 12 that marks its western boundary and a second easement running east-west along the northern border of EA 20, defined as EA 63 but also overlapping with EA 12 (discussed in Section 3.2.2.12). EA 20 was classified by EPA as a high-use area and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors, while the utility easement (EA 63) was evaluated for the utility worker scenario (RCMS Table 4-1). Nearly half of this EA is considered to be difficult to access. Approximately 2.5 acres of the northern portion of EA 20 are considered Core Area 1 habitat, including nearly all of EA 63. There are no vernal pools and no Frequently Used Subareas in EA 20; however, the EA 63 easement that overlaps with EA 12 includes the Frequently Used Subarea associated with EA 12.

Previous soil PCB sampling in EA 20 resulted in the analysis of 33 samples from the 0- to 6-inch depth interval and 16 samples from the 6- to 12-inch depth interval. Most of the existing data in this EA are located in the northernmost portion (including along the EA 63 utility easement) (Figure 3-15). GE proposes to collect soil samples from the top foot at 35 locations within EA 20 to complete the coverage of the top one foot of soil. GE also proposes to collect soil samples to a depth of three feet at five locations in the Frequently Used Subarea portion of EA 63. The proposed sample locations are shown on Figure 3-15. At 31 of the 35 top-foot soil sampling locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining four top-foot sampling locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for pix-inch interval will be archived.

#### 3.2.2.19 Exposure Area 21

EA 21 is an approximately 2.9-acre area located off East New Lenox Road in Pittsfield and covers a portion of Pittsfield Tax Parcel J3-2-203 (owned by GE), as shown on Figure 3-16. EA 21 was classified as a high-use area by EPA and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). All of EA 21 is considered walkable, and it contains no vernal pools or Frequently Used Subareas.

Previous soil PCB sampling in EA 21 resulted in the analysis of 11 samples from the 0- to 6-inch depth interval and six samples from the 6- to 12-inch depth interval (Figure 3-16). GE proposes to collect soil samples from the top foot at six locations within this EA to supplement the existing data set (Figure 3-16). At each of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis.

#### 3.2.2.20 Exposure Area 22

EA 22 is a 19-acre area located off East New Lenox Road that consists of a portion of Pittsfield Tax Parcel J3-2-203 (owned by GE), as shown on Figure 3-17. EA 22 was evaluated in the HHRA and RCMS using the high-use general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). This EA contains dirt bike riding trails in the northern portion that EPA has identified as a subarea (Subarea 22a). This subarea was evaluated in the RCMS using the dirt biking/ATVing exposure scenario for older child receptors. Nearly a third of EA 22 is considered to be difficult to access, including three small vernal pools. None of this EA is considered Core Area 1 habitat, and there are no Frequently Used Subareas within this EA.

Previous soil PCB sampling in EA 22 resulted in the analysis of 30 samples from the 0- to 6-inch depth interval and 11 samples from the 6- to 12-inch depth interval (Figure 3-17). GE proposes to collect soil samples from the top foot at 108 locations within this relatively large EA to supplement the existing data set, with 10 of those locations in Subarea 22a. The proposed sample locations are shown on Figure 3-17. At 98 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining 10 locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.21 Exposure Area 24

EA 24 is an approximately 10-acre area that consists of portions of Pittsfield Tax Parcels J3-1-6 and J3-1-7 (owned by MassDFW), as shown on Figure 3-18. EA 24 was classified as a high-use area by EPA and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). Nearly half of this EA is considered to be difficult to access, including six vernal pools. There are no Frequently Used Subareas in EA 24.

Previous soil PCB sampling in EA 24 resulted in the analysis of 40 samples from the 0- to 6-inch depth interval and only six samples from the 6- to 12-inch depth interval (Figure 3-19). GE proposes to collect soil samples from the top foot at 58 locations within this EA to supplement the existing data coverage. The proposed sample locations are shown on Figure 3-18.<sup>14</sup> At 39 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining 19 locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

<sup>&</sup>lt;sup>14</sup> Figure 3-18 also shows proposed soil sampling location to a depth of three feet within the boundary of EA 12. These samples are located within the Frequently Used Subarea portion of EA 12 and were discussed in Section 3.2.2.10.

#### 3.2.2.22 Exposure Area 26

EA 26 is a 55-acre portion of Pittsfield Tax Parcel J2-2-2 (owned by MassDFW), as shown on Figure 3-19. A maintained utility easement runs across the western portion of this area (defined previously as part of EA 12). EA 26 was divided by EPA in the HHRA into two subareas based on the different activities that occur in each: Subarea 26a is the portion used for recreational activities, and Subarea 26b is the portion used for agricultural purposes. The full EA (EA 26) and Subarea 26a were both classified as high-use areas by EPA and were evaluated in the HHRA and RCMS using the general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). Subarea 26b was also evaluated for direct contact by a farmer. EA 26a also contains a network of trails that is defined in the Revised Final Permit as a Frequently Used Subarea. Approximately half of the area is classified as walkable, while the remainder is considered to be difficult to access. EA 26 also contains 10 vernal pools and nearly 13 acres of Core Area 1 habitat.

Previous soil PCB sampling in EA 26 resulted in the analysis of 130 samples from the 0- to 6-inch depth interval and 31 samples from the 6- to 12-inch depth interval. GE proposes to collect soil samples from the top foot at 151 locations in EA 26 (all but two located in Subarea 26a) to supplement the existing data set. The proposed sample locations are shown on Figure 3-19. GE also proposes to collect samples to a depth of three feet at 11 locations within the Frequently Used Subarea (Figure 3-19) to define PCB concentrations in the top three feet of soil in that area.<sup>15</sup> At 107 of the 151 top-foot soil sampling locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining 44 top-foot sampling locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.23 Exposure Area 27

EA 27 is an approximately 6.3-acre area that consists of a portion of Pittsfield Tax Parcel K3-1-19 (owned by the City of Pittsfield), as shown on Figure 3-20. EA 27 was classified as a high-use area by EPA and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). This area also contains dirt bike and ATV trails that were designated as Subarea 27a. This subarea was evaluated in the HHRA and RCMS for the dirt biking/ATVing exposure scenario. A relatively small portion of this area is considered to be difficult to access (with the remainder being walkable), and the EA contains no vernal pools, Core Area 1 habitat, or Frequently Used Subareas.

Previous soil PCB sampling in EA 27 resulted in the analysis of 13 samples from the 0- to 6-inch depth interval and only one sample from the 6- to 12-inch depth interval (Figure 3-20). GE proposes

<sup>&</sup>lt;sup>15</sup> Figure 3-19 also shows proposed soil sampling locations to a depth of three feet within the boundary of EA 12. These samples are located within the Frequently Used Subarea portion of EA 12 and were discussed in Section 3.2.2.10.

to collect soil samples from the top foot at 19 locations within this EA, including two in Subarea 27a, to supplement the existing data set. The proposed sample locations are shown on Figure 3-20. At 11 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining eight locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.24 Exposure Area 29

EA 29 is an approximately 0.34-acre portion of Pittsfield Tax Parcel K3-1-1 (owned by MassDFW), as shown on Figure 3-21. EA 29 was classified as a low-use area by EPA and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for older child and adult receptors (RCMS Table 4-1). Most of this EA is classified by EPA as difficult to access, and the EA contains no vernal pools or Frequently Used Subareas.

Previous soil PCB sampling in EA 29 resulted in the analysis of five samples from the 0- to 6-inch depth interval and three samples from the 6- to 12-inch depth interval (Figure 3-21). GE proposes to collect soil samples from the top foot at three locations within this EA to supplement the existing data set (Figure 3-21). At two of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining one location (which has existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.25 Exposure Areas 31 and 64

EA 31 is an approximately five-acre area located along East New Lenox Road consisting of portions of Pittsfield Tax Parcels K2-1-3 and K2-1-5 (owned by MassDFW) and K2-1-4 (owned by the City of Pittsfield), as shown on Figure 3-22. Parcel K2-1-4 is a 0.6-acre maintained utility easement area that contains an underground pipe. Although this area comprises a utility easement, recreational activities were observed here prior to the HHRA. Therefore, the HHRA designated this easement area as Subarea 31a for the purposes of evaluating recreational exposure and as EA 64 for the evaluation of exposure to utility workers. The HHRA classified the main EA (EA 31) and Subarea 31a as high-use general recreation areas that were evaluated for older child and adult receptors (RCMS Table 4-1). EA 64 was evaluated for the utility worker scenario. The southeastern corner of EA 31 contains a portion of a large vernal pool that spans EA 31 and the adjacent EA 32 and is considered difficult to access. This EA contains no Core Area 1 habitat or Frequently Used Subareas.

Previous soil PCB sampling in EA 31 resulted in the analysis of 12 samples from the 0- to 6-inch depth interval and six samples from the 6- to 12-inch depth interval (Figure 3-22). GE proposes to collect soil samples from the top foot at 13 locations within EA 31, including two locations in EA 64/Subarea 31a, to supplement the existing data. The proposed sample locations are shown on Figure 3-22. At nine of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be

submitted for PCB analysis; and at the remaining four locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.26 Exposure Area 32

EA 32 is an approximately 6.8-acre area located along East New Lenox Road, consisting of a portion of Pittsfield Tax Parcel K2-1-1 (owned by MassDFW), as shown on Figure 3-23. EA 32 was classified as a high-use area by EPA and was evaluated in the HHRA and RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). More than half of this EA includes a large vernal pool and other areas that are considered difficult to access, and it contains no Core Area 1 habitat or Frequently Used Subareas.

Previous soil PCB sampling in EA 32 resulted in the analysis of 10 samples from the 0- to 6-inch depth interval and four samples from the 6- to 12-inch depth interval (Figure 3-23). GE proposes to collect soil samples from the top foot at 26 locations within this EA to supplement the existing data coverage. The proposed sample locations are shown on Figure 3-23. At 20 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining six locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.27 Exposure Area 33

EA 33 is an approximately 30-acre area that consists of a portion of Pittsfield Tax Parcel J2-2-1, which is the site of the Pittsfield WWTP (owned by the City of Pittsfield), as shown on Figure 3-24. Because the portion of the property within the 1 mg/kg PCB isopleth contains a number of trails and service roads, EA 33 is considered a high-use area and was evaluated in the RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). Most of this EA is considered by EPA to be walkable, but there are some areas considered difficult to access, including three vernal pools. None of this EA is considered Core Area 1 habitat, and it contains no Frequently Used Subareas.

Previous soil PCB sampling in EA 33 resulted in the analysis of 39 samples from the 0- to 6-inch depth interval and seven samples from the 6- to 12-inch depth interval (Figure 3-26). GE proposes to collect soil samples from the top foot at 131 locations within this EA to supplement the existing data set, as shown on Figure 3-24. At 108 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining 23 locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.28 Exposure Area 34

EA 34 is an approximately 7.8-acre area located along East New Lenox Road that consists of a portion of Pittsfield Tax Parcel K1-1-109 (owned by GE), as shown on Figure 3-25. EA 34 is considered a medium-use area and was evaluated in the RCMS using the general recreation exposure scenario for adult receptors (RCMS Table 4-1). Most of this EA is considered walkable, but it does contain some difficult to access area, including one small vernal pool. None of this EA is considered Core Area 1 habitat, and it contains no Frequently Used Subareas.

Previous soil PCB sampling in EA 34 resulted in the analysis of 23 samples from the 0- to 6-inch depth interval and 10 samples from the 6- to 12-inch depth interval (Figure 3-25). GE proposes to collect soil samples from the top foot at 48 locations within this EA to supplement the existing data set, as shown on Figure 3-25. At 44 of those locations, both the 0- to 6-inch and the 6- to 12-inch intervals will be submitted for PCB analysis; and at the remaining four locations (which have existing 0- to 6-inch data), only the 6- to 12-inch interval will be submitted for initial analysis and the top six-inch interval will be archived.

#### 3.2.2.29 Summary

The pre-design PCB soil sampling proposed herein will involve the collection of soil samples from 1,193 locations within the 32 non-residential EAs in the Reach 5A floodplain. Of these 1,193 locations, 1,104 are one-foot sampling locations and 89 are three-foot sampling locations. Of the 1,104 1-foot sampling locations, 867 will include PCB analysis of both the 0- to 6-inch and 6- to 12-inch depth intervals (total of 1,734 samples), and 237 will include PCB analysis of just the 6- to 12-inch depth interval (with the 0- to 6-inch depth interval to be archived). Table 3-1 provides a summary of the number of proposed PDI sample locations for each EA. Appendix A provides a full tabular summary of all proposed samples, including grid IDs and depth intervals to be sampled/held. Figure 3-26 shows the Thiessen polygons that will result from a combination of the existing historical data and PDI data to be collected within the Reach 5A EAs.
			Number of Existing Samples		Number of Proposed PDI Sampling Locations	
EA	Parcel(s)	Owner	0–6 Inches	6–12 Inches	1-Foot	3-Foot
1	H6-4-105	MassDFW	64	29	63	
2	l6-1-41	MassDFW	105	35	66	_
	l6-1-27	MassDFW				
4 and 61	Many: covered by other EAs	State and private ownership	33	10	6	27
5	l6-1-1	City of Pittsfield	19	13	7	_
	16-2-1	City of Pittsfield				
6	15-1-1	Private	9	6	25	
7	16-3-1	Private	25	15	33	_
	16-3-13	Private				
8	J6-3-2	Massachusetts Audubon Society	12	6	4	
10	J6-4-2	Massachusetts Audubon Society	52	25	107	
11	J5-2-110	MassDFW	18	13	10	
12	Many: covered by other EAs	State and private ownership	32	32		46
13	J5-2-105	MassDFW	23	9	23	
14	J5-2-5	Private	12	1	18	_
15	J5-2-6	MassDFW	3	3	3	
16	J5-2-11	Private	8	6	9	
17	J5-2-4	Private	21	8	18	_
18	J3-2-203	General Electric	12	5	37	_
19 and 62	J4-3-13	MassDFW	114	20	77	
20 and 63	J4-3-12	MassDFW	38	20	35	5
21	J3-2-203	General Electric	11	6	6	_
22	J3-2-203	General Electric	30	11	108	
24	J3-1-6	MassDFW	40	6	58	_
	J3-1-7	MassDFW				
26	J2-2-2	MassDFW	130	31	151	11
27	K3-1-19	City of Pittsfield	13	1	19	—
29	K3-1-1	MassDFW	5	3	3	—
31 and 64	K2-1-3	MassDFW	14	6	13	_
	K2-1-4	City of Pittsfield				
	K2-1-5	MassDFW				
32	K2-1-1	MassDFW	10	4	26	—
33	J2-2-1	City of Pittsfield	39	7	131	—
34	K1-1-109	General Electric	23	10	48	—
		Total	915	341	1,104	89

# Table 3-1 Summary of Proposed PDI Sampling Locations at Non-Residential Floodplain Exposure Areas

# 3.2.3 Sampling and Analytical Procedures

A document containing standard operating procedures (SOPs) for floodplain soil sample collection and analysis was developed and provided previously in Appendix 1 to GE's July 2020 Revised Residential Floodplain PDI Work Plan. Those same SOPs will be utilized for the soil sampling described in this Revised Non-Residential Floodplain PDI Work Plan. Field activities will be conducted in accordance with the *Site Health and Safety Plan, GE-Pittsfield/Housatonic River Site – Rest of River* (GE 2017). The sampling crew will locate proposed sampling locations using a Differential Global Positioning System (DGPS). It may be necessary to adjust some of the target sampling locations identified in this Revised Non-Residential Floodplain PDI Work Plan based on conditions encountered in the field. For example, some proposed locations in difficult access areas may be impossible to access, or an obstruction may be present at a proposed location. Any adjustment to target sampling locations will be discussed with and approved by the EPA field representative, and coordinates of the actual sampling locations will be recorded using DGPS.

Each floodplain soil sample collected will be analyzed for PCB as Aroclors using EPA Method 8082 with analytical detection and reporting limits presented in the applicable analytical SOPs (also provided previously in Appendix 1 to GE's July 2020 Revised Residential Floodplain PDI Work). Analytical results will be provided to GE in accordance with a standard laboratory turnaround time of 20 business days from verified time of sample receipt.

# 4 Schedule and Reporting

GE proposes to initiate the floodplain soil PCB sampling activities described herein within 45 days after receipt of EPA approval of this Revised Floodplain PDI Work Plan, subject to weather constraints and receipt of access permission for a sufficient number of properties to warrant initiation of sampling. If initiation of sampling is delayed beyond that 45-day period, GE will advise EPA and propose an alternative date for the initiation of sampling.

Following completion of the sampling described herein and receipt of the results, GE will evaluate the need for analysis of any held samples and/or for additional pre-design sampling in the subject EAs. If GE determines that analysis of held samples is warranted, GE will provide EPA with the results of the sampling completed, will consult with EPA regarding the analysis of any held samples, and, upon agreement, will proceed with the analysis of the held samples. If GE determines that additional pre-design sampling is warranted, GE will submit an addendum to this Revised Non-Residential Floodplain PDI Work Plan presenting the data received to date and proposing the additional sampling. That addendum, if warranted, will be submitted within 60 days after receipt and completion of validation of all analytical results associated with the sampling proposed herein (including the analysis of any held samples). Upon EPA approval, GE will conduct the additional sampling approved by EPA. If GE determines that no additional pre-design sampling is warranted, GE will notify EPA and proceed to the development of a Floodplain Non-Residential PDI Summary Report for Reach 5A, described in the next paragraph.

Following the completion of all required pre-design sampling at the 32 non-residential EAs in Reach 5A, a Floodplain Non-Residential PDI Summary Report for Reach 5A will be prepared that summarizes the data collected pursuant to this Revised Non-Residential Floodplain PDI Work Plan and any addendum thereto.<sup>16</sup> That report will include the following:

- A summary of the investigations performed and investigation results at the Reach 5A non-residential EAs;
- A summary of validated analytical PCB data from the Reach 5A non-residential EAs and discussion of any quality assurance/quality control issues with the data;
- Data validation reports and laboratory data reports;
- Supporting documentation of the PDI activities (e.g., sampling logs, photographs);

<sup>&</sup>lt;sup>16</sup> As required by EPA, a separate PDI Summary Report on the Reach 5A Floodplain Residential Properties will be submitted within 90 days after receipt of the sampling data collected under GE's March 31, 2021 Work Plan Addendum for those properties, as conditionally approved by EPA on April 20, 2021.

- Revised floodplain EPCs for PCBs in each non-residential EA and Frequently Used Subarea sampled, as well as the spatially weighted average PCB concentration in each vernal pool sampled;
- An assessment of the sufficiency of the available PCB data to evaluate potential areas to be
  remediated to meet the applicable Performance Standards for non-residential EAs in Tables 1
  and 2 of the Revised Final Permit and the Performance Standard for vernal pools in
  Section II.B.3.a.(1)(a) of the Revised Final Permit, and to support subsequent Remedial
  Design/Remedial Action (RD/RA) activities, along with an assessment of any additional data
  needs and, if necessary, a proposal and schedule for conducting additional investigations to
  satisfy those data needs; and
- A description of the next steps to evaluate the non-residential EAs and vernal pools in the Reach 5A floodplain, including submission of a Conceptual RD/RA Work Plan for Reach 5A, in accordance with the Revised Rest of River Statement of Work, for delineation of the areas and depths within the floodplain EAs that will require remediation to meet the applicable Performance Standards.

In the meantime, a summary table of the analytical results received in each month from floodplain soil samples collected under this Revised Non-Residential Floodplain PDI Work Plan and any addendum thereto will be included in GE's monthly progress reports under the CD.

# **5** References

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# Figures



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# Figure 1-1

### Hydrography, Floodplain Boundary, and Topography in Reach 5A



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#### Figure 2-1

#### Exposure Areas, Subareas, and Frequently Used Subareas in Reach 5A



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#### Figure 2-2 Reach 5A Exposure Areas and Habitat Information



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Figure 2-3 Interpolated Existing Surface Soil PCB Concentrations in Reach 5A



\\WCL-NY1\Helios\D\_Drive\Projects\GE\Housatonic\_Rest-of-River\Severable\_Tasks\Documents\Floodplain PDI Workplan\Reach 5A Non-Residential Work Plan\Figures\Fig\_4-1\_Variogram.pptx \\WCL-NY1\Helios\D\_Drive\Projects\GE\Housatonic\_Rest-of-River\Severable\_Tasks\Documents\Floodplain PDI Workplan\Reach 5A Non-Residential Work Plan\Analysis\Variograms\202010521\_omni\COPCs\tPCB\v1\tPCB\_variograms\_native\_coordinates.ps



#### Figure 3-1a Analysis of Existing Surface Soil (0- to 6-inch) PCB Data in Reach 5A; Semivariogram



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Figure 3-1b Analysis of Existing Surface Soil (0- to 6-inch) PCB Data in Reach 5A; PCB versus Distance from River





#### Figure 3-2 **Exposure Area 1**



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#### Figure 3-3 Exposure Area 2



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#### Figure 3-4 Exposure Areas 4 and 61











## Figure 3-6 Exposure Area 6





### Figure 3-7 Exposure Area 7





#### Figure 3-8 **Exposure Area 8**







#### Figure 3-9 **Exposure Area 10**







#### Figure 3-10 Exposure Areas 11 and 12 (partial)





#### Figure 3-11 Exposure Areas 13, 14, 15, and 12 (partial)



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#### Figure 3-12 Exposure Areas 16, 17, and 12 (partial)



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# Figure 3-13 Exposure Area 18



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#### Figure 3-14 Exposure Areas 19, 62, and 12 (partial)





#### Figure 3-15 Exposure Areas 20, 63, and 12 (partial)





## Figure 3-16 Exposure Area 21





#### Figure 3-17 **Exposure Area 22**





#### Figure 3-18 Exposure Areas 24 and 12 (partial)



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#### Figure 3-19 Exposure Areas 26 and 12 (partial)





## Figure 3-20 Exposure Area 27







#### Figure 3-21 **Exposure Area 29**







#### Figure 3-22 Exposure Areas 31 and 64







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# Figure 3-24 Exposure Area 33


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# Figure 3-25 Exposure Area 34

Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas Housatonic River – Rest of River



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## Figure 3-26 Thiessen Polygons based on Existing Historical Data and Proposed PDI Data

Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas Housatonic River – Rest of River

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 1	B/C-11	Х	Х				
EA 1	B-10	Х	Х				
EA 1	B-12	Х	Х				
EA 1	C/D-12	Х	Х				
EA 1	C/D-9	Х	Х				
EA 1	C-10	Х	Х				
EA 1	C-13	Х	Х				
EA 1	D-12/13	Х	Х				
EA 1	D-9/10	Х	Х				
EA 1	E-10/11	Н	Х				
EA 1	E-13	Н	Х				
EA 1	E-14	Х	Х				
EA 1	F-13	Х	Х				
EA 1	F-13/14	Х	Х				
EA 1	F-9/10	Х	Х				
EA 1	G/H-10	Х	Х				
EA 1	G/H-14	Н	Х				
EA 1	G-15	Х	Х				
EA 1	G-9	Х	Х				
EA 1	H-11	Х	Х				
EA 1	H-13	Н	Х				
EA 1	I/J-11/12	Х	Х				
EA 1	I-11	Х	Х				
EA 1	I-12	Х	Х				
EA 1	I-12/13	Х	Х				
EA 1	J/K-11/12	Х	Х				
EA 1	J/K-12	Н	Х				
EA 1	J/K-13	Х	Х				
EA 1	J-11	Х	Х				
EA 1	J-17	Х	Х				
EA 1	K/L-13	Х	Х				
EA 1	K-12/13	Х	Х				
EA 1	K-14	Х	Х				
EA 1	K/L-16	Н	Х				
EA 1	K-16	Х	Х				
EA 1	K-17/18	Х	Х				
EA 1	L/M-15/16	Х	Х				
EA 1	L-14	X	X				
EA 1	L-15	X	Х				
EA 1	L-16	Х	Х				
EA 1	L-17	Х	Х				
EA 1	M-14	Х	Х				
EA 1	M-14/15	Х	Х				
EA 1	M-15/16	X	X				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 1	N/O-17	Х	Х				
EA 1	N-14	Х	Х				
EA 1	N-14/15	Х	Х				
EA 1	N-15	Х	Х				
EA 1	N-15/16	Х	Х				
EA 1	N-16	Х	Х				
EA 1	O-18	Х	Х				
EA 1	P/Q-19	Н	Х				
EA 1	R/S-19/20	Х	Х				
EA 1	S/T-20	Х	Х				
EA 1	T/U-20	Х	Х				
EA 1	U/V-20/21	Х	Х				
EA 1	V-21	Х	Х				
EA 1	W/X-21	Н	Х				
EA 1	W/X-22	Х	Х				
EA 1	W-20	Х	Х				
EA 1	X-20/21	Х	Х				
EA 1	Y-19/20	Х	Х				
EA 1	Z-20	Х	Х				
EA 2a	A/B-4	Х	Х				
EA 2a	A/B-5	Н	Х				
EA 2a	B-3/4	Х	Х				
EA 2a	C/D-4/5	Х	Х				
EA 2a	C-2/3	Х	Х				
EA 2a	C-4/5	Н	Х				
EA 2a	C-5	Н	Х				
EA 2a	D-5/6	Н	Х				
EA 2a	E-5	Х	Х				
EA 2	B-7	Х	Х				
EA 2b	C/D-11	Н	Х				
EA 2b	D/E-8/9	Х	Х				
EA 2b	E-11	Х	Х				
EA 2	C-9	Х	Х				
EA 2	E/F-6	Х	Х				
EA 2	E/F-7/8	Н	Х				
EA 2	F/G-6	Н	Х				
EA 2	F-10	Н	Х				
EA 2	F-14	Н	Х				
EA 2	F-5	X	Х				
EA 2	G/H-5	Х	Х				
EA 2	G/H-6	Х	Х				
EA 2	G-16	Х	Х				
EA 2	G-4	Х	Х				
EA 2	H/I-15	Х	Х				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 2	H/I-16	Х	Х				
EA 2	H/I-5	Х	Х				
EA 2	H/I-6	Н	Х				
EA 2	H/I-9/10	Н	Х				
EA 2	H-13	Х	Х				
EA 2	H-15	Х	Х				
EA 2	I/J-6	Х	Х				
EA 2	I/J-6/7	Х	Х				
EA 2	J/K-13	Н	Х				
EA 2	J/K-6/7	Х	Х				
EA 2	J/K-9/10	Х	Х				
EA 2	K/L-7	Х	Х				
EA 2	K/L-8/9	Х	Х				
EA 2	K-15/16	Н	Х				
EA 2	K-16	Х	Х				
EA 2	K-16/17	Н	Х				
EA 2	L/M-10	Х	Х				
EA 2	L/M-11/12	Х	Х				
EA 2	L/M-13	Н	Х				
EA 2	L/M-8/9	Х	Х				
EA 2	L-16	Х	Х				
EA 2	L-17	Х	Х				
EA 2	M/N-12	Х	Х				
EA 2	M/N-13	Х	Х				
EA 2	M/N-16	Х	Х				
EA 2	M/N-9	Х	Х				
EA 2	M-11	Х	Х				
EA 2	M-14	Н	Х				
EA 2	M-15	Н	Х				
EA 2	M-7	Х	Х				
EA 2	N/O-12/13	Х	Х				
EA 2	N/O-7/8	Х	Х				
EA 2	N/O-9/10	Х	Х				
EA 2	N-11	Х	Х				
EA 2	N-13/14	Х	Х				
EA 2	N-14/15	Х	Х				
EA 2	N-15/16	Х	Х				
EA 2	O/P-9/10	Н	Х				
EA 2	O-10/11	Х	Х				
EA 2	O-11/12	Н	Х				
EA 2	P/Q-9/10	Х	Х				
EA 4	B/C-6	Н	Х	Х	Х		
EA 4	B-5/6	Н	Х				
EA 4	C/D-6	Х	Х	Х	Х		

		Depth Increment (below ground surface)				
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"	
EA 4	D/E-6/7	Х	Х	Х	Х	
EA 4	E/F-6/7	Х	Х	Х	Х	
EA 4	F/G-7	Н	Х	Х	Х	
EA 4	G/H-7	Х	Х	Х	Х	
EA 4	H/I-7	Х	Х	Х	Х	
EA 4	I/J-7/8	Х	Х	Х	Х	
EA 4	J-7/8	Н	Х	Х	Х	
EA 4	K/L-11/12	Х	Х	Х	Х	
EA 4	K-10/11	Н	Х	Х	Х	
EA 4	K-8/9	Х	Х	Х	Х	
EA 4	K-9/10	Х	Х	Х	Х	
EA 4	L/M-15	Х	Х	Х	Х	
EA 4	L-12/13	Х	Х	Х	Х	
EA 4	L-13/14	Х	Х	Х	Х	
EA 4	M/N-19	Н	Н	Х	Х	
EA 4	M-16	Н	Н	Х	Х	
EA 4	M-17	Х	Х	Х	Х	
EA 4	M-18	Н	Н	Х	Х	
EA 4	N-20	Х	Х	Х	Х	
EA 4	N-22/23	Х	Х	Х	Х	
EA 4	N-23/24	Х	Х	Х	Х	
EA 4	N-24	Н	Х	Х	Х	
EA 4	N-25/26	Н	Х	Х	Х	
EA 4	N-27	Н	Н	Х	Х	
EA 4	N-28/29	Н	Н	Х	Х	
EA 5	L-18	Х	Х			
EA 5	M/N-20	Х	Х			
EA 5	M-18/19	Х	Х			
EA 5	N-17	Х	Х			
EA 5	N-18	Х	Х			
EA 5	O-18	Х	Х			
EA 5	O-19	Н	Х			
EA 6	A/B-8/9	Х	Х			
EA 6	B/C-11	Х	Х			
EA 6	B/C-23	Х	Х			
EA 6	B-24	Х	Х			
EA 6	B-6/7	Х	Х			
EA 6	B-7/8	X	X			
EA 6	B-9	X	Х			
EA 6	C/D-10	Х	X			
EA 6	C/D-12	Х	Х			
EA 6	C/D-15	Х	Х			
EA 6	C/D-16/17	Х	Х			
EA 6	C/D-17/18	Х	X			

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 6	C/D-20/21	Х	Х				
EA 6	C-10	Х	Х				
EA 6	C-11	Х	Х				
EA 6	C-5	Х	Х				
EA 6	C-6/7	Н	Х				
EA 6	C-9	Х	Х				
EA 6	C-9/10	Н	Х				
EA 6	D-10/11	Х	Х				
EA 6	D-18/19	Х	Х				
EA 6	D-19/20	Х	Х				
EA 6	D-7	Н	Х				
EA 6	D-8	Х	Х				
EA 6	D-9/10	Х	Х				
EA 7	L/M-27/28	Х	Х				
EA 7	L-28	Х	Х				
EA 7	M/N-25	Н	Х				
EA 7	M-28/29	Х	Х				
EA 7	M-29	Х	Х				
EA 7	N/O-22	Х	Х				
EA 7	N/O-23	Х	Х				
EA 7	N/O-24/25	Х	Х				
EA 7	N/O-27/28	Х	Х				
EA 7	N/O-28	Х	Х				
EA 7	N/O-29/30	Н	Х				
EA 7	N-22	Х	Х				
EA 7	N-23	Х	Х				
EA 7	N-25/26	Х	Х				
EA 7	N-26	Х	Х				
EA 7	N-27/28	Х	Х				
EA 7	O/P-21	Х	Х				
EA 7	O/P-22	Х	Х				
EA 7	O/P-23	Н	Х				
EA 7	O/P-24	Х	Х				
EA 7	O/P-26	Х	Х				
EA 7	O/P-26/27	Х	Х				
EA 7	0-22	Х	Х				
EA 7	O-24/25	Х	Х				
EA 7	O-25/26	Н	X				
EA 7	O-28/29	X	X				
EA 7	P-20/21	Х	Х				
EA 7	P-22/23	Х	Х				
EA 7	P-23	Х	Х				
EA 7	P-23/24	Х	Х				
EA 7	P-25	X	X				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 7	P-26	Н	Х				
EA 7	Q-20	Х	Х				
EA 8	E/F-2	Н	Х				
EA 8	E-2	Х	Х				
EA 8	F-2	Х	Х				
EA 8	G/H-1/2	Х	Х				
EA 10	AA/AB-4/5	Х	Х				
EA 10	AA/AB-7	Х	Х				
EA 10	AA/AB-8	Х	Х				
EA 10	AA-5/6	Х	Х				
EA 10	AB/AC-10	Н	Х				
EA 10	AB/AC-8	Н	Х				
EA 10	AB-11	Н	Х				
EA 10	AB-14	Х	Х				
EA 10	AB-15	Х	Х				
EA 10	AB-2	Х	Х				
EA 10	AB-3	Н	Х				
EA 10	AB-3/4	Х	Х				
EA 10	AC/AD-10	Х	Х				
EA 10	AC/AD-13	Х	Х				
EA 10	AC-7	Н	Х				
EA 10	AC-8/9	Х	Х				
EA 10	AD-12/13	Н	Х				
EA 10	AE-16	Х	Х				
EA 10a	J-5	Х	Х				
EA 10a	M-4	Х	Х				
EA 10a	N-4/5	Н	Х				
EA 10b	G/H-5	Х	Х				
EA 10b	G-1/2	Х	Х				
EA 10b	H/I-7	Н	Х				
EA 10b	H-2	Н	Х				
EA 10b	H-3	Х	Х				
EA 10b	H-3/4	Х	Х				
EA 10b	H-4/5	Х	Х				
EA 10b	H-5	Х	Х				
EA 10b	I/J-4/5	Х	Х				
EA 10b	I-2/3	Х	Х				
EA 10b	I-3/4	X	X				
EA 10b	I-6/7	X	X				
EA 10b	J/K-4/5	Х	Х				
EA 10b	J-3	Х	Х				
EA 10b	K/L-4	Х	Х				
EA 10b	K-3	Х	Х				
EA 10b	K-6/7	Х	Х				

		Depth Increment (below ground surface)				
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"	
EA 10b	K-8	Х	Х			
EA 10b	L/M-5	Н	Х			
EA 10b	L-3	Х	Х			
EA 10b	N-3/4	Х	Х			
EA 10	E-7	Х	Х			
EA 10	E-9	Х	Х			
EA 10	G-9	Х	Х			
EA 10	H/I-10	Н	Х			
EA 10	J/K-10	Х	Х			
EA 10	J-12/13	Х	Х			
EA 10	L/M-12	Х	Х			
EA 10	L-10/11	Х	Х			
EA 10	L-8/9	Х	Х			
EA 10	M/N-10	Х	Х			
EA 10	M/N-16	Х	Х			
EA 10	N/O-11	Х	Х			
EA 10	N/O-7	Х	Х			
EA 10	N-12	Х	Х			
EA 10	O/P-10/11	Х	Х			
EA 10	O/P-14/15	Х	Х			
EA 10	P/Q-12/13	Х	Х			
EA 10	P/Q-7/8	Х	Х			
EA 10	P-17	Х	Х			
EA 10	P-3	Х	Х			
EA 10	P-8	Х	Х			
EA 10	P-9/10	Х	Х			
EA 10	Q/R-10	Х	Х			
EA 10	Q/R-13/14	Х	Х			
EA 10	Q/R-8	Х	Х			
EA 10	Q-16	Х	Х			
EA 10	Q-3	Х	Х			
EA 10	R/S-11	Х	Х			
EA 10	R-15	Х	Х			
EA 10	R-18	Х	Х			
EA 10	R-3	Н	Х			
EA 10	S/T-15	Х	Х			
EA 10	S/T-17	Н	Х			
EA 10	S-18	X	Х			
EA 10	S-19	X	Х			
EA 10	S-3	X	Х			
EA 10	T/U-11	Х	Х			
EA 10	T-10	Х	Х			
EA 10	T-12	Х	Х			
EA 10	T-16	Х	Х			

		Depth Increment (below ground surface)				
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"	
EA 10	U/V-10/11	Х	Х			
EA 10	U-10	Х	Х			
EA 10	U-14	Н	Х			
EA 10	V/W-16/17	Х	Х			
EA 10	V-17/18	Х	Х			
EA 10	V-18	Х	Х			
EA 10	V-3	Х	Х			
EA 10	W/X-14	Х	Х			
EA 10	W/X-18/19	Х	Х			
EA 10	W-3	Н	Х			
EA 10	W-4	Н	Х			
EA 10	X-16	Х	Х			
EA 10	X-2/3	Х	Х			
EA 10	X-3/4	Х	Х			
EA 10	Y/Z-17	Х	Х			
EA 10	Y/Z-4/5	Х	Х			
EA 10	Y-16	Х	Х			
EA 10	Y-3	Н	Х			
EA 10	Z/AA-19	Х	Х			
EA 10	Z/AA-2/3	Х	Х			
EA 10	Z/AA-4	Х	Х			
EA 10	Z-13	Х	Х			
EA 10	Z-15/16	Х	Х			
EA 10	Z-2	Х	Х			
EA 10	Z-5/6	Х	Х			
EA 11	B-9/10	Х	Х			
EA 11	C-10	Н	Х			
EA 11	D/E-11	Н	Х			
EA 11	E-11	Х	Х			
EA 11	G-11	Н	Х			
EA 11	I-11	Х	Х			
EA 11	J/K-11	Х	Х			
EA 11	J-11/12	Н	Х			
EA 11	L/M-11	Х	Х			
EA 11	M-11	Х	Х			
EA 12	C/D-10	Н	Н	Х	Х	
EA 12	D/E-10/11	Н	Х	Х	Х	
EA 12	D/E-10	X	X	X	X	
EA 12	D-11	X	X	X	X	
EA 12	E/F-10	X	X	Х	Х	
EA 12	E/F-8	X	X	Х	Х	
EA 12	E-9	Х	Х	Х	Х	
EA 12	F/G-10/11	X	X	Х	Х	
EA 12	F-10/11	Х	X	Х	Х	

		Depth Increment (below ground surface)				
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"	
EA 12	G/H-10/11	Х	Х	Х	Х	
EA 12	G/H-6	Х	Х	Х	Х	
EA 12	G-11	Х	Х	Х	Х	
EA 12	G-3	Х	Х	Х	Х	
EA 12	G-7	Х	Х	Х	Х	
EA 12	G-9	Х	Х	Х	Х	
EA 12	H/I-10/11	Х	Х	Х	Х	
EA 12	H-11	Н	Н	Х	Х	
EA 12	H-3	Х	Х	Х	Х	
EA 12	H-9	Н	Н	Х	Х	
EA 12	I/J-10/11	Х	Х	Х	Х	
EA 12	I-10/11	Х	Х	Х	Х	
EA 12	I-9	Х	Х	Х	Х	
EA 12	J-10	Н	Н	Х	Х	
EA 12	J-10/11	Н	Н	Х	Х	
EA 12	J-9	Х	Х	Х	Х	
EA 12	K-10/11	Х	Х	Х	Х	
EA 12	K-9	Х	Х	Х	Х	
EA 12	L/M-2	Х	Х	Х	Х	
EA 12	L-10/11	Н	Н	Х	Х	
EA 12	L-9	Х	Х	Х	Х	
EA 12	M/N-10/11	Н	Н	Х	Х	
EA 12	M-10/11	Н	Н	Х	Х	
EA 12	M-9	Х	Х	Х	Х	
EA 12	N-9	Х	Х	Х	Х	
EA 12	O-10/11	Х	Х	Х	Х	
EA 12	O-9	Х	Х	Х	Х	
EA 12	P-10	Н	Н	Х	Х	
EA 12	P-9	Х	Х	Х	Х	
EA 12	Q-10	Х	Х	Х	Х	
EA 12	Q-9	Х	Х	Х	Х	
EA 12	R-10	Н	Н	Х	Х	
EA 12	R-9/10	Х	Х	Х	Х	
EA 12	S/T-9/10	Н	Н	Х	Х	
EA 12	S-10	Х	Х	Х	Х	
EA 12	S-9/10	Х	Х	Х	Х	
EA 13	M/N-10	Х	Х			
EA 13	M/N-8/9	Х	Х			
EA 13	M-9	Х	X			
EA 13	N/O-10	X	X			
EA 13	N/O-7	X	X			
EA 13	N-9	Н	X			
EA 13	O/P-10	X	X			
EA 13	O/P-9/10	Х	Х			

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 13	O-11	Х	Х				
EA 13	O-8	Н	Х				
EA 13	P/Q-10	Х	Х				
EA 13	P/Q-11	Х	Х				
EA 13	P/Q-9	Х	Х				
EA 13	P-11	Н	Х				
EA 13	P-8/9	Х	Х				
EA 13	P-9	Х	Х				
EA 13	Q/R-10/11	Х	Х				
EA 13	Q/R-6	Н	Х				
EA 13	Q/R-8/9	Х	Х				
EA 13	R-9/10	Х	Х				
EA 13	S-10/11	Н	Х				
EA 13	T/U-10	Х	Х				
EA 13	T-9/10	Х	Х	Х	Х		
EA 13	T-9	Х	Х				
EA 14	I-5	Х	Х				
EA 14	J/K-3/4	Х	Х				
EA 14	J/K-4	Х	Х				
EA 14	J-5	Х	Х				
EA 14	J-6	Н	Х				
EA 14	K-6	Н	Х				
EA 14	K-5	Х	Х				
EA 14	K-4/5	Н	Х				
EA 14	K-7	Х	Х				
EA 14	L/M-6	Х	Х				
EA 14	L/M-8	Х	Х				
EA 14	L-6/7	Н	Х				
EA 14	L-5	Н	Х				
EA 14	L-7	Х	Х				
EA 14	M/N-6	Х	Х				
EA 14	M/N-7	Н	Х				
EA 14	M-6	Х	Х				
EA 14	M-7	Х	Х				
EA 15	G/H-7	Х	Х				
EA 15	H-6/7	Х	Х				
EA 15	H-7	Х	Х				
EA 16	C-9	X	X				
EA 16	C-9/10	Х	Х				
EA 16	E/F-11	X	X				
EA 16	E-10	X	Х				
EA 16	E-11	X	X				
EA 16	F/G-11	X	X				
EA 16	F-12	Н	Х				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 16	F-13	Х	Х				
EA 16	G-12	Х	Х				
EA 17	E/F-16/17	Х	Х				
EA 17	E-7	Х	Х				
EA 17	F-15/16	Х	Х				
EA 17	F-9	Х	Х				
EA 17	G/H-14	Н	Х				
EA 17	G-10/11	Х	Х				
EA 17	G-14/15	Х	Х				
EA 17	G-16	Н	Х				
EA 17	G-16/17	Х	Х				
EA 17	H/I-14/15	Н	Х				
EA 17	H-10/11	Х	Х				
EA 17	H-13	Х	Х				
EA 17	H/I-15	Х	Х				
EA 17	H-15	Х	Х				
EA 17	H-15/16	Н	Х				
EA 17	H-9	Х	Х				
EA 17	I/J-13	Н	Х				
EA 17	I/J-15/16	Н	Х				
EA 18	B/C-2/3	Н	Х				
EA 18	C/D-2	Х	Х				
EA 18	C/D-2/3	Х	Х				
EA 18	C/D-3/4	Х	Х				
EA 18	C/D-4	Х	Х				
EA 18	C/D-7	Х	Х				
EA 18	C-4	Х	Х				
EA 18	D/E-1	Н	Х				
EA 18	D/E-2/3	Х	Х				
EA 18	D-3/4	Н	Х				
EA 18	E/F-3/4	Х	Х				
EA 18	E/F-7	Х	Х				
EA 18	E-10	Х	Х				
EA 18	E-13	Х	Х				
EA 18	E-2	Х	Х				
EA 18	E-4	Х	Х				
EA 18	E-5	Х	X				
EA 18	F/G-4	Х	X				
EA 18	F-2/3	Х	Х				
EA 18	F-3	Х	Х				
EA 18	G/H-10	Х	Х				
EA 18	G/H-3	Н	Х				
EA 18	G-12	Х	Х				
EA 18	G-7	Х	Х				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 18	G-8	Х	Х				
EA 18	H-3	Х	Х				
EA 18	H-5	Х	Х				
EA 18	I/J-2/3	Х	Х				
EA 18	I-3	Н	Х				
EA 18	I-3/4	Х	Х				
EA 18	-4	Х	Х				
EA 18	J/K-2	Н	Х				
EA 18	J-11	Х	Х				
EA 18	J-13	Х	Х				
EA 18	J-3	Х	Х				
EA 18	K-3	Х	Х				
EA 18	K-4	Х	Х				
EA 19	D/E-15	Х	Х				
EA 19	D/E-6/7	Х	Х				
EA 19	D-14	Н	Х				
EA 19	D-4	Х	Х				
EA 19	E/F-15/16	Х	Х				
EA 19	E-11	Н	Х				
EA 19	E-13	Х	Х				
EA 19	E-14/15	Н	Х				
EA 19	E-9	Н	Х				
EA 19	F/G-11	Н	Х				
EA 19	F/G-13	Н	Х				
EA 19	F/G-15/16	Х	Х				
EA 19	F-10	Н	Х				
EA 19	F-11	Х	Х				
EA 19	F-12	Н	Х				
EA 19	F-13/14	Н	Х				
EA 19	F-14	Н	Х				
EA 19	F-4	Н	Х				
EA 19	F-5	Н	Х				
EA 19	G/H-15/16	Х	Х				
EA 19	G/H-7/8	Х	Х				
EA 19	G-10/11	Н	Х				
EA 19	G-15	Н	Х				
EA 19	H/I-15	Х	Х				
EA 19	H-13	Н	X				
EA 19	H-14	Х	X				
EA 19	H-6	X	Х				
EA 19	H-9	Х	Х				
EA 19	I/J-15	Х	Х				
EA 19	I/J-3	Х	Х				
EA 19	I/J-6	Н	X				

		Depth Increment (below ground surface)				
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"	
EA 19	I-13	Х	Х			
EA 19	I-14	Н	Х			
EA 19	J/K-10	Н	Х			
EA 19	J/K-14	Х	Х			
EA 19	J/K-15	Х	Х			
EA 19	J/K-7	Х	Х			
EA 19	J-11	Х	Х			
EA 19	J-11/12	Н	Х			
EA 19	J-13	Х	Х			
EA 19	J-14	Х	Х			
EA 19	J-8/9	Н	Х			
EA 19	K/L-14/15	Х	Х			
EA 19	K-15/16	Х	Х			
EA 19	K-3/4	Х	Х			
EA 19	K-5	Н	Х			
EA 19	L/M-15	Х	Х			
EA 19	L/M-16	Х	Х			
EA 19	L/M-7	Х	Х			
EA 19	L-12	Н	Х			
EA 19	L-13	Х	Х			
EA 19	M/N-11	Н	Х			
EA 19	M/N-15	Х	Х			
EA 19	M/N-16	Х	Х			
EA 19	M/N-5/6	Н	Х			
EA 19	M-10	Н	Х			
EA 19	M-12	Х	Х			
EA 19	M-14	Х	Х			
EA 19	M-14/15	Х	Х			
EA 19	N/O-12	Н	Х			
EA 19	N-11	Х	Х			
EA 19	N-12	Х	Х			
EA 19	N-16	Н	Х			
EA 19	N-7	Н	Х			
EA 19	N-8	Х	Х			
EA 19	N-9	Х	Х			
EA 19	O/P-13	Х	Х			
EA 19	O-12	Х	Х			
EA 19	O-14	Х	Х			
EA 19	O-15/16	Н	X			
EA 19	O-17	X	X			
EA 19	P/Q-16	Х	Х			
EA 19	P/Q-17	Х	Х			
EA 19	P-14	X	X			
EA 19	P-15	Х	Х			

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 19	P-16	Х	Х				
EA 19	P-17	Х	Х				
EA 20	C-7	Х	Х				
EA 20	D/E-4	Х	Х				
EA 20	D/E-8	Х	Х				
EA 20	D-10	Х	Х				
EA 20	D-4/5	Х	Х				
EA 20	D-5	Х	Х				
EA 20	D-6	Х	Х				
EA 20	D-9	Х	Х				
EA 20	E-4/5	Х	Х				
EA 20	E-5/6	Н	Х				
EA 20	E-6	Х	Х				
EA 20	E-7/8	Х	Х				
EA 20	F/G-7/8	Н	Х				
EA 20	F-5	Х	Х				
EA 20	F-5/6	Х	Х				
EA 20	F-6/7	Х	Х				
EA 20	F-8	Х	Х				
EA 20	G/H-5/6	Х	Х				
EA 20	G-6	Х	Х				
EA 20	G-7	Х	Х				
EA 20	G-8	Х	Х				
EA 20	H/I-5	Х	Х				
EA 20	H-4/5	Х	Х				
EA 20	H-5/6	Х	Х				
EA 20	H-6/7	Х	Х				
EA 20	H-7	Х	Х				
EA 20	H-8	Х	Х				
EA 20	I/J-5	Н	Х				
EA 20	I-5	Х	Х				
EA 20	I-6	Х	Х				
EA 20	J/K-5	Н	Х				
EA 20	J-4	Х	Х				
EA 20	J-4/5	Х	Х				
EA 20	K-4	Х	Х				
EA 20	K-4/5	Х	Х				
EA 21	M-4	Х	Х				
EA 21	N-4	Х	Х				
EA 21	O-3	Х	Х				
EA 21	P/Q-3/4	X	X				
EA 21	P-3	Х	Х				
EA 21	S/T-8	Х	Х				
EA 22	A-15/16	Х	Х				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 22a	D/E-8	Х	Х				
EA 22a	E-9	Х	Х				
EA 22a	F/G-7	Х	Х				
EA 22a	F/G-8	Х	Х				
EA 22a	F-7	Х	Х				
EA 22a	F-9/10	Х	Х				
EA 22a	G/H-7	Х	Х				
EA 22a	G-6	Х	Х				
EA 22a	G-7/8	Х	Х				
EA 22a	I-7	Х	Х				
EA 22	C-16	Х	Х				
EA 22	D/E-8	Х	Х				
EA 22	E/F-10	Х	Х				
EA 22	E/F-12	Х	Х				
EA 22	E/F-6/7	Х	Х				
EA 22	E/F-7/8	Х	Х				
EA 22	E-10	Х	Х				
EA 22	E-11	Х	Х				
EA 22	E-8/9	Х	Х				
EA 22	E-9	Х	Х				
EA 22	F/G-10/11	Х	Х				
EA 22	F/G-11/12	Х	Х				
EA 22	F/G-5	Х	Х				
EA 22	F-10/11	Х	Х				
EA 22	F-13	Х	Х				
EA 22	F-6	Х	Х				
EA 22	F-8/9	Х	Х				
EA 22	G/H-5	Х	Х				
EA 22	H/I-8	Х	Х				
EA 22	H-5/6	Х	Х				
EA 22	I-5	Н	Х				
EA 22	I-6	Х	Х				
EA 22	J/K-3	Н	Х				
EA 22	J-3	Х	Х				
EA 22	I/J-4	Х	Х				
EA 22	J-4/5	Х	Х				
EA 22	J-4	X	X				
EA 22	J-5	X	X				
EA 22	J-5/6	X	X				
EA 22	K/L-3/4	Х	Х				
EA 22	K/L-4	Х	Х				
EA 22	K-2/3	Х	Х				
EA 22	K-4/5	Х	Х				
EA 22	K-6/7	X	X				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 22	L/M-1/2	Х	Х				
EA 22	L/M-2	Х	Х				
EA 22	L/M-3	Х	Х				
EA 22	L/M-4	Х	Х				
EA 22	L-2	Н	Х				
EA 22	L-4	Х	Х				
EA 22	L-4/5	Х	Х				
EA 22	M-2	Х	Х				
EA 22	M/N-3	Х	Х				
EA 22	M-3	Х	Х				
EA 22	N/O-2/3	Х	Х				
EA 22	N/O-3	Х	Х				
EA 22	N-2	Х	Х				
EA 22	O-12	Х	Х				
EA 22	O-2/3	Х	Х				
EA 22	P/Q-12	Х	Х				
EA 22	P-2/3	Х	Х				
EA 22	P-3	Н	Х				
EA 22	Q/R-10	Х	Х				
EA 22	Q/R-12	Х	Х				
EA 22	Q/R-3	Х	Х				
EA 22	Q-10/11	Х	Х				
EA 22	Q/R-10/11	Х	Х				
EA 22	Q-11	Х	Х				
EA 22	Q-11/12	Х	Х				
EA 22	Q-12	Х	Х				
EA 22	R/S-10	Х	Х				
EA 22	R/S-11	Х	Х				
EA 22	R/S-3	Х	Х				
EA 22	R-11/12	Х	Х				
EA 22	R-12	Н	Х				
EA 22	R-4	Х	Х				
EA 22	R-5	Х	Х				
EA 22	S/T-10	Н	Х				
EA 22	S/T-3	Х	Х				
EA 22	S-11	Х	Х				
EA 22	S-4	Х	Х				
EA 22	S-9/10	X	X				
EA 22	T/U-10	X	X				
EA 22	T/U-6/7	Х	Х				
EA 22	T/U-8	Х	Х				
EA 22	T-10/11	Х	Х				
EA 22	T-3	Н	Х				
EA 22	T-4/5	X	X				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 22	T-7/8	Х	Х				
EA 22	T-9	Х	Х				
EA 22	U/V-6	Х	Х				
EA 22	U/V-8	Н	Х				
EA 22	U/V-9	Х	Х				
EA 22	U-2	Х	Х				
EA 22	U-3	Н	Х				
EA 22	U-4	Х	Х				
EA 22	U-7	Х	Х				
EA 22	U-9	Х	Х				
EA 22	V/W-4	Х	Х				
EA 22	V/W-6	Х	Х				
EA 22	V-2	Х	Х				
EA 22	V-3	Х	Х				
EA 22	V-5	Х	Х				
EA 22	V-9	Х	Х				
EA 22	W/X-5	Х	Х				
EA 22	W-5/6	Н	Х				
EA 22	X/Y-5	Х	Х				
EA 24	A-12/13	Х	Х				
EA 24	B-12	Х	Х				
EA 24	B-13	Х	Х				
EA 24	C/D-11	Х	Х				
EA 24	C-11/12	Х	Х				
EA 24	C-12	Х	Х				
EA 24	C-13	Н	Х				
EA 24	D-12	Н	Х				
EA 24	D-13	Х	Х				
EA 24	E/F-12	Н	Х				
EA 24	E/F-13	Х	Х				
EA 24	D/E-12	Х	Х				
EA 24	E-12	Х	Х				
EA 24	E-14	Н	Х				
EA 24	F-11	Н	Х				
EA 24	F-12/13	Х	Х				
EA 24	F-13	Х	Х				
EA 24	F-14	X	Х				
EA 24	G-12/13	X	X				
EA 24	G-12	Н	X				
EA 24	G-13	Н	X				
EA 24	G/H-13	Х	Х				
EA 24	G-14	Х	Х				
EA 24	H/I-12	Н	X				
EA 24	H/I-12/13	Х	Х				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 24	H-13	Х	Х				
EA 24	H-13	Х	Х				
EA 24	I/J-11/12	Н	Х				
EA 24	I-11	Х	Х				
EA 24	I-12	Х	Х				
EA 24	J/K-12/13	Н	Х				
EA 24	J-11/12	Х	Х				
EA 24	K/L-12	Х	Х				
EA 24	K/L-14	Х	Х				
EA 24	K-11	Н	Х				
EA 24	K-12/13	Н	Х				
EA 24	K-13/14	Х	Х				
EA 24	L/M-12	Х	Х				
EA 24	L/M-13	Х	Х				
EA 24	L-10	Х	Х				
EA 24	L-11	Н	Х				
EA 24	L-13	Х	Х				
EA 24	L-14/15	Н	Х				
EA 24	L-15	Н	Х				
EA 24	M/N-14	Х	Х				
EA 24	M/N-16	Х	Х				
EA 24	M-10	Н	Х				
EA 24	M-11	Х	Х				
EA 24	M-14/15	Н	Х				
EA 24	M-15	Х	Х				
EA 24	N-14	Н	Х				
EA 24	N-14/15	Х	Х				
EA 24	N-15	Х	Х				
EA 24	N-15/16	Х	Х				
EA 24	N-17	Х	Х				
EA 24	N-18	Х	Х				
EA 24	O-17	Н	Х				
EA 24	O-17/18	Х	Х				
EA 26a	B/C-25	Х	Х				
EA 26a	B/C-28	Х	Х				
EA 26a	B-26	Х	Х				
EA 26a	B-27	Х	Х				
EA 26a	C/D-24	X	Х				
EA 26a	C-26	X	X				
EA 26a	C-27	Н	X				
EA 26a	C-27/28	Х	Х				
EA 26a	C-28/29	X	Х				
EA 26a	D/E-23	Х	Х				
EA 26a	D/E-27	Х	Х				

		Depth Increment (below ground surface)				
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"	
EA 26a	D/E-27/28	Х	Х			
EA 26a	D/E-28/29	Х	Х			
EA 26a	D/E-29	Х	Х			
EA 26a	D-27	Х	Х			
EA 26a	D-27/28	Н	Х			
EA 26a	D-28	Н	Х			
EA 26a	E/F-27	Х	Х			
EA 26a	E/F-29/30	Х	Х			
EA 26a	E-22	Х	Х			
EA 26a	E-27/28	Н	Х			
EA 26a	E-29	Н	Х			
EA 26a	F/G-21/22	Х	Х			
EA 26a	F/G-22/23	Х	Х	Х	Х	
EA 26a	F/G-30	Х	Х			
EA 26a	F-27	Х	Х			
EA 26a	F-28	Н	Х			
EA 26a	F-29	Х	Х			
EA 26a	F-29/30	Х	Х			
EA 26a	G/H-19	Н	Х			
EA 26a	G/H-19/20	Х	Х			
EA 26a	G/H-20	Х	Х			
EA 26a	G/H-21	Х	Х			
EA 26a	G/H-28/29	Х	Х			
EA 26a	G/H-31	Х	Х			
EA 26a	G-19/20	Х	Х			
EA 26a	G-22	Х	Х	Х	Х	
EA 26a	G-26/27	Х	Х			
EA 26a	H/I-18/19	Х	Х			
EA 26a	H/I-19/20	Х	Х			
EA 26a	H/I-21/22	Х	Х	Х	Х	
EA 26a	H/I-31	Х	Х			
EA 26a	H-20	Х	Х			
EA 26a	H-27/28	Н	Х			
EA 26a	H-28	Н	Х			
EA 26a	I/J-10/11	Х	Х			
EA 26a	I/J-32	Х	Х			
EA 26a	I-18/19	Х	Х			
EA 26a	I-21	Х	Х	Х	Х	
EA 26a	I-9/10	Х	Х			
EA 26a	J/K-15	Н	Х			
EA 26a	J/K-18	Х	Х			
EA 26a	J/K-20/21	Х	Х	Х	Х	
EA 26a	J/K-30	Х	Х			
EA 26a	J/K-32/33	X	X			

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 26a	J-14	Н	Х				
EA 26a	K/L-10/11	Н	Х				
EA 26a	K/L-15	Х	Х				
EA 26a	K/L-16/17	Х	Х				
EA 26a	K/L-22	Х	Х				
EA 26a	K/L-22/23	Х	Х	Х	Х		
EA 26a	K/L-33	Х	Х				
EA 26a	K-15/16	Н	Х				
EA 26a	K-17/18	Х	Х				
EA 26a	K-21/22	Х	Х	Х	Х		
EA 26a	K-30	Н	Х				
EA 26a	K-31	Х	Х				
EA 26a	K-31/32	Н	Х				
EA 26a	K-8/9	Х	Х				
EA 26a	L/M-15	Х	Х				
EA 26a	L/M-22	Х	Х	Х	Х		
EA 26a	L/M-32	Х	Х				
EA 26a	L/M-34	Х	Х				
EA 26a	L/M-8/9	Х	Х				
EA 26a	L/M-9/10	Х	Х				
EA 26a	L-12	Н	Х				
EA 26a	L-16	Н	Х				
EA 26a	L-17	Х	Х				
EA 26a	L-21	Н	Х				
EA 26a	L-23	Н	Х				
EA 26a	K/L-23	Н	Х				
EA 26a	L-30	Н	Х				
EA 26a	L-32	Н	Х				
EA 26a	L-33	Х	Х				
EA 26a	M/N-15	Х	Х				
EA 26a	M/N-33/34	Х	Х				
EA 26a	M/N-34/35	Х	Х				
EA 26a	M-14	Н	Х				
EA 26a	M-16	Х	Х				
EA 26a	M-21	Х	Х	Х	Х		
EA 26a	M-22	Н	Х				
EA 26a	M-29	Н	Х				
EA 26a	M-33	Н	X				
EA 26a	N/O-14	Х	Х				
EA 26a	N/O-29	X	X				
EA 26a	N/O-32/33	Х	Х				
EA 26a	N/O-34	Х	Х				
EA 26a	N-11/12	Н	X				
EA 26a	N-13	Н	Х				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 26a	N-14/15	Х	Х				
EA 26a	N-21	Х	Х	Х	Х		
EA 26a	N-21/22	Х	Х				
EA 26a	N-22	Х	Х				
EA 26a	N-22/23	Х	Х	Х	Х		
EA 26a	N-23	Х	Х				
EA 26a	N-29	Х	Х				
EA 26a	N-30	Н	Х				
EA 26a	N-33	Н	Х				
EA 26a	N-6/7	Х	Х				
EA 26a	O/P-10	Х	Х				
EA 26a	O/P-13	Х	Х				
EA 26a	O/P-30	Х	Х				
EA 26a	O-10/11	Н	Х				
EA 26a	O-12/13	Н	Х				
EA 26a	O-14	Х	Х				
EA 26a	O-29	Х	Х				
EA 26a	O-31	Х	Х				
EA 26a	O-31/32	Н	Х				
EA 26a	O-32/33	Х	Х				
EA 26a	O-33/34	Х	Х				
EA 26a	O-4/5	Х	Х				
EA 26a	P/Q-11/12	Х	Х				
EA 26a	P/Q-7/8	Х	Х				
EA 26a	P-30/31	Х	Х				
EA 26a	P-33	Н	Х				
EA 26a	Q/R-6/7	Н	Х				
EA 26a	Q-13	Х	Х				
EA 26a	Q-29	Н	Х				
EA 26a	Q-32	Н	Х				
EA 26a	R/S-28	Х	Х				
EA 26a	R/S-30/31	Х	Х				
EA 26a	R/S-31	Х	Х				
EA 26a	R/S-32	Х	Х				
EA 26a	R-10	Х	Х				
EA 26a	R-13	Х	Х				
EA 26a	R-30/31	Н	X				
EA 26a	S/T-29	X	X				
EA 26a	S/T-30	Х	Х				
EA 26a	S/T-30/31	Х	X				
EA 26a	S/T-31/32	Х	X				
EA 26a	S/T-7	Н	Х				
EA 26a	S/T-8	Х	Х				
EA 26a	S-13	Н	Х				

		Depth Increment (below ground surface)				
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"	
EA 26a	S-29/30	Н	Х			
EA 26a	T/U-13	Х	Х			
EA 26a	T/U-29	Х	Х			
EA 26a	T/U-31	Х	Х			
EA 26a	T-15	Х	Х			
EA 26a	T-28	Х	Х			
EA 26a	T-30	Х	Х			
EA 26a	T-4/5	Х	Х			
EA 26a	U/V-27	Х	Х			
EA 26a	U/V-28	Н	Х			
EA 26a	U/V-29/30	Х	Х			
EA 26a	U-27/28	Н	Х			
EA 26a	U-30	Н	Х			
EA 26a	V/W-26	Х	Х			
EA 26a	V-27	Х	Х			
EA 26a	W/X-26	Х	Х			
EA 26a	X-26/27	Х	Х			
EA 26b	H/I-29/30	Х	Х			
EA 26b	I/J-30	Х	Х			
EA 27a	F-6	Н	Х			
EA 27	C-1	Х	Х			
EA 27	D-2	Н	Х			
EA 27	E-4	Н	Х			
EA 27	F-4	Х	Х			
EA 27	F-5	Х	Х			
EA 27	G/H-5	Х	Х			
EA 27	G-4	Н	Х			
EA 27	H/I-6	Н	Х			
EA 27	H-4/5	Х	Х			
EA 27	I/J-7	Х	Х			
EA 27	I-5	Н	Х			
EA 27	I-8/9	Н	Х			
EA 27	J/K-8	Х	Х			
EA 27	J-6	Х	Х			
EA 27	K/L-8	Х	Х			
EA 27	K-6/7	Х	Х			
EA 27	K-7	Н	Х			
EA 27	L-8/9	Х	Х			
EA 29	C-5	Х	Х			
EA 29	G-3	Н	X			
EA 29	H-2/3	X	X			
EA 31a	E/F-2	Х	Х			
EA 31a	F-3	Х	Х			
EA 31	C-5/6	Х	Х			

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 31	D-3/4	Х	Х				
EA 31	D-4/5	Н	Х				
EA 31	D-5/6	Х	Х				
EA 31	E-3	Х	Х				
EA 31	E-4	Н	Х				
EA 31	F-3	Х	Х				
EA 31	G-2/3	Н	Х				
EA 31	G-3/4	Х	Х				
EA 31	H/I-5	Х	Х				
EA 31	H-4	Н	Х				
EA 32	B-2/3	Н	Х				
EA 32	C-4	Х	Х				
EA 32	C-5/6	Х	Х				
EA 32	D/E-5/6	Х	Х				
EA 32	D-2/3	Х	Х				
EA 32	D-3/4	Н	Х				
EA 32	D-4	Х	Х				
EA 32	E/F-4/5	Х	Х				
EA 32	E-2/3	Х	Х				
EA 32	E-4	Н	Х				
EA 32	F-3	Н	Х				
EA 32	F-3/4	Х	Х				
EA 32	F-7	Х	Х				
EA 32	G-3	Н	Х				
EA 32	G-4	Х	Х				
EA 32	G-6/7	Х	Х				
EA 32	H/I-3/4	Н	Х				
EA 32	H-3	Х	Х				
EA 32	H-4	Х	Х				
EA 32	H-8	Х	Х				
EA 32	I/J-3/4	Х	Х				
EA 32	I-9	Х	Х				
EA 32	K-2/3	Х	Х				
EA 32	L-2/3	Х	Х				
EA 32	M-2	Х	Х				
EA 32	N/O-1	Х	Х				
EA 33	AA/AB-15/16	Х	Х				
EA 33	AA-13	Х	Х				
EA 33	AA-14	Х	Х				
EA 33	AA-18/19	Х	Х				
EA 33	AA-19	Х	Х				
EA 33	AA-20	Н	Х				
EA 33	C/D-14	Х	Х				
EA 33	C-6	Х	X				

		Depth Increment (below ground surface)					
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"		
EA 33	G/H-29	Х	Х				
EA 33	G-28/29	Х	Х				
EA 33	H/I-29	Н	Х				
EA 33	I/J-22	Х	Х				
EA 33	I/J-29	Х	Х				
EA 33	J/K-21/22	Х	Х				
EA 33	J/K-23	Х	Х				
EA 33	J-22	Н	Х				
EA 33	K/L-22	Х	Х				
EA 33	K/L-24	Х	Х				
EA 33	K-22	Х	Х				
EA 33	K-22/23	Х	Х				
EA 33	K-24	Х	Х				
EA 33	K-29	Х	Х				
EA 33	L-23	Х	Х				
EA 33	L-24	Х	Х				
EA 33	L-25	Х	Х				
EA 33	L-29	Х	Х				
EA 33	M/N-18	Х	Х				
EA 33	M/N-19	Х	Х				
EA 33	M/N-25/26	Х	Х				
EA 33	M-19	Х	Х				
EA 33	M-20	Х	Х				
EA 33	M-25	Х	Х				
EA 33	M-28	Н	Х				
EA 33	M-28/29	Х	Х				
EA 33	M-29	Х	Х				
EA 33	N/O-25	Х	Х				
EA 33	N/O-26	Х	Х				
EA 33	N/O-29/30	Х	Х				
EA 33	N-18/19	Н	Х				
EA 33	N-26	Х	Х				
EA 33	N-27	Х	Х				
EA 33	N-29/30	Х	Х				
EA 33	N-29	Х	Х				
EA 33	O/P-26	Х	Х				
EA 33	O/P-27	Х	Х				
EA 33	O/P-29	Х	Х				
EA 33	O-26/27	X	X				
EA 33	O-28	Х	Х				
EA 33	O-28/29	Х	Х				
EA 33	P/Q-29	Х	Х				
EA 33	P-26	Х	Х				
EA 33	Q/R-17/18	X	X				

		Depth Increment (below ground surface)			
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"
EA 33	Q-18/19	Х	Х		
EA 33	Q-19	Н	Х		
EA 33	Q-20	Х	Х		
EA 33	Q-21	Н	Х		
EA 33	Q-26/27	Х	Х		
EA 33	Q-28	Н	Х		
EA 33	R/S-15/16	Х	Х		
EA 33	R/S-27	Х	Х		
EA 33	R-16/17	Х	Х		
EA 33	R-18/19	Н	Х		
EA 33	R-20	Х	Х		
EA 33	R-21	Н	Х		
EA 33	R-22	Х	Х		
EA 33	R-27	Х	Х		
EA 33	R-28	Н	Х		
EA 33	R-29	Х	Х		
EA 33	S/T-17	Н	Х		
EA 33	S/T-19	Н	Х		
EA 33	S/T-20	Х	Х		
EA 33	S/T-21/22	Х	Х		
EA 33	S-17	Н	Х		
EA 33	S-21	Х	Х		
EA 33	S-22	Х	Х		
EA 33	S-23	Х	Х		
EA 33	S-28	Х	Х		
EA 33	S-29	Х	Х		
EA 33	T/U-19/20	Н	Х		
EA 33	T/U-27	Х	Х		
EA 33	T/U-28	Х	Х		
EA 33	T-15	Х	Х		
EA 33	T-18	Х	Х		
EA 33	T-20/21	Х	Х		
EA 33	T-21	Х	Х		
EA 33	T-22/23	Н	Х		
EA 33	T-27	Х	Х		
EA 33	T-28	Н	Х		
EA 33	T-29	Х	Х		
EA 33	U/V-19	Х	Х		
EA 33	U/V-20/21	X	Х		
EA 33	U-15	Х	Х		
EA 33	U-17	Н	Х		
EA 33	U-20	Х	Х		
EA 33	U-21	Х	Х		
EA 33	U-22	X	X		

		Depth Increment (below ground surface)			
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"
EA 33	V/W-18/19	Н	Х		
EA 33	V-18	Х	Х		
EA 33	V-19/20	Х	Х		
EA 33	W/X-11	Х	Х		
EA 33	W/X-12	Х	Х		
EA 33	W/X-15	Х	Х		
EA 33	W/X-16	Х	Х		
EA 33	W/X-19	Н	Х		
EA 33	W-14	Х	Х		
EA 33	W-16/17	Х	Х		
EA 33	W-17	Х	Х		
EA 33	W-19	Х	Х		
EA 33	X/Y-15	Х	Х		
EA 33	X/Y-18/19	Х	Х		
EA 33	X-10/11	Х	Х		
EA 33	X-17	Х	Х		
EA 33	X-19/20	Х	Х		
EA 33	Y/Z-14/15	Х	Х		
EA 33	Y/Z-15	Х	Х		
EA 33	Y/Z-17	Х	Х		
EA 33	Y/Z-19/20	Х	Х		
EA 33	Y/Z-21	Х	Х		
EA 33	Y-12	Х	Х		
EA 33	Y-15	Х	Х		
EA 33	Y-16	Х	Х		
EA 33	Y-18	Х	Х		
EA 33	Y-20/21	Н	Х		
EA 33	Z/AA-15	Н	Х		
EA 33	Z/AA-17	Х	Х		
EA 33	Z-12	Х	Х		
EA 33	Z-18	Х	Х		
EA 33	Z-18/19	Х	Х		
EA 33	Z-19	Х	Х		
EA 33	Z-20	Н	Х		
EA 33	Z-9	Х	Х		
EA 34	B/C-6	Х	Х		
EA 34	B-7	Х	Х		
EA 34	B-7/8	Х	X		
EA 34	C-6	X	Х		
EA 34	C-8	Х	Х		
EA 34	C-8/9	Х	Х		
EA 34	D-5	Х	Х		
EA 34	D-6	Х	Х		
EA 34	D-7	Х	Х		

		Depth Increment (below ground surface)			
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"
EA 34	D-8	Х	Х		
EA 34	D-8/9	Х	Х		
EA 34	D-9	Х	Х		
EA 34	E/F-7	Х	Х		
EA 34	E/F-9	Х	Х		
EA 34	E-4	Х	Х		
EA 34	E-5	Х	Х		
EA 34	E-5/6	Х	Х		
EA 34	E-6	Х	Х		
EA 34	E-7	Х	Х		
EA 34	E-9/10	Х	Х		
EA 34	F-10	Х	Х		
EA 34	F-8	Х	Х		
EA 34	G-10	Х	Х		
EA 34	G-8/9	Х	Х		
EA 34	H-10/11	Х	Х		
EA 34	I-10/11	Х	Х		
EA 34	J/K-10/11	Х	Х		
EA 34	J/K-8	Х	Х		
EA 34	K/L-11/12	Н	Х		
EA 34	K-12/13	Х	Х		
EA 34	K-7	Х	Х		
EA 34	K-8	Х	Х		
EA 34	L/M-7	Х	Х		
EA 34	L-5/6	Х	Х		
EA 34	L-6/7	Х	Х		
EA 34	L-7	Х	Х		
EA 34	M/N-7	Х	Х		
EA 34	M-6	Н	Х		
EA 34	O-6/7	Х	Х		
EA 34	P-6	Х	Х		
EA 34	Q/R-1/2	Х	Х		
EA 34	Q/R-3	Х	Х		
EA 34	Q-2	Х	Х		
EA 34	Q-4	Х	Х		
EA 34	R/S-7/8	Х	Х		
EA 34	R-3	Х	Х		
EA 34	R-5	Н	X		
EA 34	R-6	Н	X		
EA 61	K/L-7/8	X	X		
EA 61	L/M-8	Х	Х		
EA 61	M/N-8	Х	Х		
EA 61	N/O-8/9	Н	X		
EA 61	O/P-8	Х	Х		

		Depth Increment (below ground surface)			
Exposure Area	Grid ID	0-6"	6-12"	12-24"	24-36"
EA 63	B/C-7	Х	Х	Х	Х
EA 63	B/C-8	Н	Н	Х	Х
EA 63	B-5/6	Н	Н	Х	Х
EA 63	C-10/11	Н	Н	Х	Х
EA 63	C-9	Х	Х	Х	Х