FINAL REPORT
FOR
LOWER NEPONSET RIVER PCBS
SITE INSPECTION
BOSTON/MILTON, MASSACHUSETTS

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U.S. Environmental Protection Agency
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Office of Site Remediation and Restoration
5 Post Office Square, Suite 100
Boston, MA 02109-3912

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Submitted by:
Weston Solutions, Inc.
Region I
Superfund Technical Assessment and Response Team IV (START)
101 Billerica Avenue, Building 5, Suite 103
North Billerica, Massachusetts 01862
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Region I START IV
Reviewed and Approved:

Bonnie J. Mace
Site Leader

4/19/2019
Date

John F. Kelly
Project Manager

04/19/2019
Date

QA Review

04/19/2019
Date

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ACRONYM/ABBREVIATIONS LIST

%	Percent
A&CEM	Allis & Chalmers Electrical Manufacturing
A&CMF	Allis & Chalmers Manufacturing Facility
AUL	Activity Use & Limitation
AMEC	AMEC Environment & Infrastructure, Inc.
aka	Also known as
bgs	Below ground surface
BMP	Best Management Practices
bsg	Below surface grade
BRCPS	Boston Renaissance Charter Public School
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESQG	Conditionally Exempt Small Quantity Generators
cfs	Cubic feet per second
CGI	Combustible Gas Indicator
CLP	Contract Laboratory Program
CO	Carbon Monoxide
COR	Contracting Officer Representative
CRQL	Contract Required Quantitation Limit
CWA	Clean Water Act
DAS	Delivery of Analytical Services
DCR	Department of Conservation & Recreation
DEQE	Department of Environmental Quality Engineering
DFG	Department of Fish and Game
DPH	Department of Public Health
EPA	U.S. Environmental Protection Agency
ft^2	Square feet
GIS	Geographic Information System
H_2S	Hydrogen Sulfide
IUPAC	International Union of Pure and Applied Chemistry
LEL	Lower Explosive Limit
LQG	Large Quantity Generator
MA	Massachusetts
MBTA	Massachusetts Bay Transportation Authority
MCP	Massachusetts Contingency Plan
MassDEP	Massachusetts Department of Environmental Protection
MDC	Metropolitan District Commission
mg/Kg	Milligrams per Kilogram
mg/L	Milligrams Per Liter
mL	Milliliter
µg/g	Micrograms Per gram
µg/Kg	Micrograms Per Kilogram
µg/L	Micrograms Per Liter
µR/hr	MicroRoentgens per hour
mi^2	Square miles
MWRA	Massachusetts Water Resource Authority
ng/g	Nanograms per gram
NLR	No Longer Regulated
No.	Number
NOAA	National Oceanic and Atmospheric Administration

ACRONYM/ABBREVIATIONS LIST

NOR	Notice of Responsibility
NPL	National Priorities List
NRCS	Natural Resource Conservation Service
NSR	No Significant Risk
O_2	Oxygen
OEME	Office of Environmental Measurement and Evaluation
OHM	Oil or Hazardous Material
OSRR	Office of Site Remediation and Restoration
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PISCES	Passive in-situ chemical-extraction sampler
PID	Photoionization Detector
PPE	Probable Point of Entry
ppb	Parts per billion
ppm	Parts per million
PWS ID	Public Water System Identification
R&D	Research and Development
RAM	Release Abatement Measure
RAO	Response Action Outcome
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
RTN	Release Tracking Number
SDG	Sample Delivery Group
SEMS	Superfund Enterprise Management System
SI	Site Inspection
SQL	Sample Quantitation Limit
START	Superfund Technical Assessment and Response Team
SWP	Surface Water Pathway
TEFs	Toxicity Equivalency Factors
TOC	Total Organic Carbon
TSCA	Toxic Substances Control Act
TDL	Target Distance Limit
US ACOE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geologic Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WHO	World Health Organization
WPA	Wellhead Protection Area

INTRODUCTION

The Weston Solutions, Inc., Superfund Technical Assessment and Response Team IV (START) was requested by the U.S. Environmental Protection Agency (EPA) Region I, Office of Site Remediation and Restoration (OSRR) to perform a Site Inspection (SI) of the Lower Neponset River PCBs site. The Lower Neponset River PCBs site is currently identified as a sediment contamination plume of unknown origin, encompassing a 3.7-mile segment of the Neponset River from the confluence of Mother Brook, a tributary of the Neponset River located upstream of Dana Avenue, Hyde Park, Massachusetts (MA), extending downstream to the Walter Baker Dam, located upstream of Adams Street, Dorchester/Milton, MA (see Attachment A, Figure 1) [3]. Previous sampling activities indicate that the sediment contamination plume contains elevated levels of polychlorinated biphenyl (PCB) mixtures known as Aroclors, including Aroclor-1242, Aroclor-1254, and Aroclor-1260. At the current time, elevated levels of PCB contamination have been documented in sediment samples from the Walter Baker Dam Impoundment area ("Baker Dam Impoundment"), the Braided Channel area (also known as ("aka") Rice Islands), as well as the Tileston and Hollingsworth Dam Impoundment area ("T&H Dam Impoundment") (see Attachment A, Figure 2) [1; 4].

PCBs are a group of organic compounds consisting of a biphenyl ring structure with 1 to 10 attached hydrogen or chlorine atoms. Individually, these different compounds are called congeners. These congeners are designated by an International Union of Pure and Applied Chemistry (IUPAC) number from 1 to 209 (also known as a PCB number), with 1 indicating the lowest number of attached chlorine atoms (and the highest number of hydrogen atoms) and 209 the highest number of attached chlorine atoms (and the lowest number of hydrogen atoms). Specific mixtures of congeners, called Aroclors, were commercially manufactured and sold in the past. The composition of each Aroclor depended on the intended commercial use, but consisted of 60 to 90 congeners. These mixtures were identified by four digits (for example, 1232, 1242, and 1254), which indicate the number of carbon atoms (the first two digits) and the percentage of chlorine substituted for hydrogen by weight (the second two numbers). For example, Aroclor 1254 contains 12 carbon atoms and 54 percent substituted chlorine. Over 700,000 tons (1.4 billion pounds) of PCBs were sold in North America between the 1930s and the late 1970s [3].

This package follows the guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA Region I regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State, or local regulations. SIs are intended to provide a preliminary screening of sites to facilitate EPA Region I's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

The street addresses, coordinates, and contaminant locations presented in this SI report identify the general area in which the site is located. They represent one or more locations EPA considers to be part of the site based upon the screening information collected or generated in the course of this and/or previous investigation(s). The EPA Pre-Remedial Site Assessment Program is designed to identify "releases or threats of releases" of hazardous substances, and the focus of this investigation is on the release(s) or potential release(s), rather than precisely delineated site

boundaries. A site is defined under the EPA Pre-Remedial Site Assessment program as where a hazardous substance has been "deposited, stored, placed, or otherwise come to be located." EPA anticipates that the preliminary description of site boundaries will be refined as more information is developed regarding where the contamination has come to be located.

SITE DESCRIPTION

The Lower Neponset River PCBs site for this study is considered to be an approximately 3.7-mile riverbed segment which contains several areas where PCB-contaminated sediments have accumulated from both suspected and unknown sources and/or releases to form a plume of PCB-contaminated sediment. The site is comprised of the riverbed channel along the lower segment of the Neponset River, from the confluence of the Neponset River and Mother Brook (upstream of Dana Avenue, Hyde Park; Confluence coordinates 42.251785, -71.123205) downstream to the Baker Dam (upstream of Adams Street, Dorchester/Milton; Dam coordinates 42.270765, -71.068818) (see Attachment A, Figure 1).

Sediments contaminated with elevated levels of PCBs have been documented within the lower segment of the Neponset River and Lower Neponset River PCBs site area. The original location of the release or releases of PCBs which have resulted in the contaminated sediment is unknown. However, there are several sites within the river basin which have been identified by previous investigations as having formerly used, stored, or had releases of PCBs and are likely to have contributed to the sediment contamination plume; numerous other sites which may have used, stored, or had releases of PCBs within the river basin and may have contributed PCB contamination to the sediment contamination plume; and still other potential sites, sources, and/or releases, which have not yet been identified, but based on the long, complex, urban and industrial history of the area along the Neponset River and within the river basin, are likely to exist and potentially have contributed to the PCB-contaminated sediment. Therefore, the PCB-contaminated sediments have accumulated from both suspected and unknown sources and/or releases of PCBs, which have accumulated to form a plume of PCB-contaminated sediment of unknown origins, which constitutes the Lower Neponset River PCBs site.

The Lower Neponset River channel ranges from approximately 40 feet to 300 feet wide, and comprises an estimated 40 acres (see Attachment A, Figure 2) within or bordering the City of Boston (Hyde Park, Mattapan, and Dorchester sections) and the Town of Milton, MA. The site is bordered by residential, commercial, industrial, and public parcels of land, including the Neponset River Greenway [aka the Neponset River trail and walkway] [57].

For the purpose of this study, the site consists of five general areas of concern: the Baker Dam Impoundment area (from the Baker Dam, upstream to Central Avenue); the Braided Channel area (from Central Avenue, upstream to the Harvest River Bridge); the Blue Hill Avenue area (upstream of the Braided Channel area, to the T&H Dam); the T&H Dam Impoundment area (from the T&H Dam, upstream to Fairmount Avenue); and the Fairmount/Mother Brook confluence area (from Fairmount Avenue, upstream to the confluence of Mother Brook with the Neponset River) (Attachment A, Figure 2A) [57].

The Lower Neponset River PCBs site is located in the Neponset River Watershed (Attachment A, Figure 3). Water and sediment flow into the site via a stream channel from Mother Brook and the upper segment of the Neponset River, upstream of the confluence of Mother Brook with the Neponset River. Water flowing through the site (along the Neponset River channel) discharges at the Baker Dam, the downstream-most portion of the site, and continues to flow downstream along

the Neponset River through the Neponset River Marsh/Estuary, to Dorchester Bay, and Boston Harbor (Attachment A, Figure 3A) [44, 45, 57].

Water also enters the site via Pine Tree Brook, a small tributary which discharges to the site (riverbed) near the Baker Dam Impoundment; overland flow; and various discharge pipes along the river banks. Several former facility discharge pipes and City of Boston and Town of Milton storm drain pipes have been observed along the site and presumably have discharged to the site riverbed at various points in the past [57].

According to the U.S. Geological Survey (USGS) and Weston START site observations, water depths along the Lower Neponset River PCBs Site range from less than 1 foot in portions of the Braided Channel area to a maximum depth of 15 feet within the T&H Dam Impoundment area [4, 57].

Numerous sediment depositional areas have been observed along the riverbed channel, including several where PCB-contaminated sediments have been documented. These areas include, but are not limited to: the Baker Dam Impoundment, the Braided Channel, and the T&H Dam Impoundment areas. According to USGS, the measurements of maximum sediment thickness in 2002 were 5.8, 7.6 and 9.7 ft. in the Braided Channel, Baker Dam Impoundment and T&H Dam Impoundment areas, respectively. Observations by START also noted that some areas within the riverbed channel are erosional zones, with limited sediment accumulation occurring, and other areas of the riverbed are heavily armored, having had finer sediments removed from the surface of the channel bed [2, 3, 4, 57].

Numerous wetland areas are located within and along the 3.7-mile riverbed segment of the site. The majority of the wetland acreage is within the Braided Channel, but there is wetland frontage along the majority of the edge of the riverbed channel. Based on EPA wetland specialist and START personnel observations and review of wetland delineations, there are an estimated 4 to 8 miles of wetland frontage along the Neponset River, within the Lower Neponset River PCBs site [46].

The SI also includes the examination of the segment of Mother Brook from its confluence with the Neponset River, upstream 3.6 miles to the Colburn Dam Impoundment area (near Maverick Street, Dedham, MA; coordinates 42.249017, -71.159816); as well as a section of the upper Neponset River, from the confluence of the Neponset River and Mother Brook, approximately 2 miles, to the area within the Neponset River Reservation II (aka Fowl Meadow) [located near 141 Meadow Road, Boston MA (Neponset section); coordinates 42.228704, -71.129871] (see Attachment A, Figure 2A) [1]. These segments were examined to determine background conditions within the Neponset River and Mother Brook, upstream of the confluence of the Neponset River and Mother Brook.

NEPONSET RIVER AND MOTHER BROOK

The Neponset River drains approximately 101 square miles of land and flows approximately 29 miles from its headwaters in Foxboro, MA into the Neponset River Estuary, east of Dorchester Avenue/Adams Street, Boston (Dorchester), MA (Attachment A Figure 3). The Neponset River is then tidally influenced for approximately another 3 miles, and ultimately discharges to Dorchester Bay [44, 45, 57].

The Neponset River receives flow from the adjacent Charles River Basin through Mother Brook. Mother Brook is a flood-diversion structure that was built in the 1600s. As much as one-third of flood flows in the Charles River are commonly diverted through Mother Brook to prevent flooding in downtown Boston. Historically, water diverted from the Charles River to the Neponset River through Mother Brook was used to flood fields or to provide power to mills [57, 61].

Stream flow in the Neponset River Drainage Basin has been affected by the construction of dams, which have fragmented the Neponset River and changed low flows, high flows, and other hydrologic characteristics. In 2007, 51 dams impounded the waters of the Neponset River and its tributaries. These dams have also changed sediment regimes by trapping sediment in the impoundments behind most of the dams. Two hurricanes impacted the Northeast and destroyed many of the dams along the Neponset River in 1955, releasing sediments trapped behind the dams [4].

OPERATIONAL AND REGULATORY HISTORY AND WASTE CHARACTERISTICS

There are no specific details regarding the operational and regulatory history for the Lower Neponset River PCBs site. This approximately 3.7-mile riverbed segment contains several areas where PCB-contaminated sediments have accumulated from both suspected and unknown sources and PCB releases, to form a plume of PCB-contaminated sediment of unknown origins. However, a general operational history for the lower segment of the Neponset River, comprising the Lower Neponset River PCBs site, is summarized in the following paragraphs.

The Neponset River, like most urban rivers in the Northeast, has a long industrial history. Industrialization and subsequent urbanization began in the Neponset River Basin as early as the 1630s. By the mid-1700s, the Neponset River drained one of the most heavily industrialized drainage basins in the Nation, draining parts of, and areas adjacent to, the city of Boston [4].

Recognized as the second watershed to be industrialized in the United States, the Neponset River has a complex history of contamination from both point and non-point sources. Used historically for hydro-powered factories, the Neponset River has been home to countless industrial land use ventures, most if not all of which likely had outflow and discharge pipes pumping toxic industrial waste directly into the river [59-66].

Historically, numerous mills were established along the Lower Neponset River in the Towns of Dorchester, Milton, Hyde Park, and Mattapan, utilizing dams to generate power initially to turn mill grinding wheels and later to operate the large industrial mills [59-66].

In 1635, Israel Stoughton built the first mill and dam on the Neponset River (reportedly only the second dam in the entire New World) to turn a mill wheel and grind corn using water power. Based on available water flow and use of dams for power, numerous mills were developed along the Lower Neponset River in the subsequent years. These early mills included the first chocolate mill (originally the Hannon Chocolate Company in 1765, later known as Walter Baker Chocolate Company); at least eight paper mills (the first in 1750); and several lumber, flour, and corn mills [59-66].

By 1890, mills along Lower Neponset River were manufacturing a variety of products, including cotton goods, boots, shoes, hats, paper, cabinet wares, furniture, block tin, tin wares, leather, ironworks (nails and horse shoes), wearing apparel, soap, candles, chocolate, gossamer (rubber products), starch, textiles, and playing cards, to name a few [59-66].

Industrial activity continued in the Lower Neponset River segment until 1965, when the last major industrial facility (Walter Baker Chocolate Company, by then a division of General Foods) relocated from the lower section of the river [59; 60].

A byproduct of this early industrialization along the river was the need for dams, which were constructed mostly for purposes of power production to meet the mill requirements. As of 2007, USGS reported that 11 dam impoundments were located along the 29-mile Neponset River main stem, but they no longer serve their original purposes. The T&H Dam and the Baker Dam remain on the lower Neponset River within the area considered the site. Remnants of the former Jenkins Dam are also located on the Lower Neponset River within the site area, downstream of the Braided Channel sediment accumulation area (which forms the Rice Islands) (see Attachment A, Figure 2). One of the long-term effects of these dams is the accumulation of contaminants in the slack water and in the impounded sediments behind the dams [2, 3, 4].

From the 1930s through the 1970s, several industries using PCBs were located in the Neponset River Basin. In 1955, major flooding occurred within the river basin and across southern New England. During 1962 and 1964, in an effort to control flooding and increase recreational use of the Neponset River Basin, the Metropolitan District Commission (MDC) [now merged with the Department of Environmental Management to form the Department of Conservation and Recreation (DCR)] conducted repair work on the dams and instituted flood control measures. These measures included dredging of the Lower Neponset River to deepen the channel, and subsequently placing dredge spoils from the Neponset River in several locations along the banks adjacent to the river [8, 9, 59; 60].

This industrial past along the Lower Neponset River, combined with the urbanization that continues in the drainage basin, has likely contaminated bottom sediment throughout the river [2-4].

Previous investigations of the Neponset River, including portions of the Lower Neponset River, have included sediment and water investigations conducted by the U.S. Army Corps of Engineers (US ACOE), USGS, Massachusetts Department of Environmental Protection (MassDEP), and others.

In 2002, US ACOE conducted a study in an effort to restore fish passage, habitat, and recreational use of the Neponset River. As part of this study, two sediment cores were collected and analyzed. Analytical results indicated that the bottom sediments contained elevated concentrations of PCBs, raising concerns about sediment, water, and biota quality of the Neponset River [12].

In 2002 and 2003, USGS, in cooperation with the Massachusetts Executive Office of Environmental Affairs Riverways Program and the U.S. EPA, conducted a study which included the Lower Neponset River in Boston and Milton. As part of this study, sediment grab (0 - 4 inches below the sediment/water interface), sediment core (5-50 inches below the sediment/water interface), and water-column samples were collected and submitted for inorganics (metals), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides, and PCB analyses. Sediment samples were also analyzed for grain-size distribution. Samples were collected at 63 stations along the Lower Neponset River as follows: sediment-grab samples (20 stations), sediment-core samples (31 stations), and water column passive in-situ chemical-extraction sampler (PISCES) samples (12 stations) (see Attachment A, Figure 4) [2-3]. Analytical results

indicated that several substances were present, most notably PCBs [11, 12, 13]. However, this investigation will only focus on PCBs as the chemical of concern.

According to USGS, although enriched relative to background, concentrations of most substances were equal to or less than those found in other urban rivers, with the notable exception of PCBs [2-3]. Concentrations of total PCB Aroclors detected in the sediment grab samples ranged from 160 to 10,580 micrograms per kilogram (µg/Kg), and in sediment core samples from 1,140 to 229,300 µg/Kg (see Attachment A, Figures 5A and 5B). Although the USGS reported the PCB concentrations in 2002-2003 sediment samples as parts per billion (ppb), the equivalent units of µg/Kg will be used throughout this report to maintain consistency in reporting concentrations between samples having a solid matrix [2-3]. This will allow for ease of concentration comparisons.

PCB PISCES passive-water-column samplers were filled with hexane and deployed on buoys at 12 locations throughout the study area, including upstream, downstream, and within Mother Brook (see Attachment A, Figure 4). The solubility of PCBs is much greater in hexane compared to river water and, therefore, increases the likelihood of detecting PCBs that could otherwise be undetectable in whole-water samples. Consequently, the concentrations of water-quality constituents in PISCES samples are reported in nanograms per hexane sample (ng/hexane sample). After about 2 weeks, the PISCES samples were collected and their contents analyzed for 209 individual PCB congeners; Aroclor concentrations were estimated from the PCB congener data [2-3]. Concentrations of total PCB Aroclors estimated in the PISCES samples ranged from 77 to 3,100 ng/hexane sample (see Attachment A, Figure 4) [3].

The 2002-2003 USGS study concluded that PCBs were detected at such high concentrations in the sediment samples that they posed a threat to benthic organisms and could potentially cause human health risks if humans came into contact with the sediment [3, 4].

A second USGS study, performed from 2004-2006, investigated concentrations, loads, and sources of PCBs by collection and analysis of bottom-sediment grab samples, water samples, fish tissue samples, and PISCES samples. Bottom-sediment samples were collected from the Neponset River and farther downstream in the estuary to supplement bottom-sediment data collected as part of the 2002-2003 USGS study. Specifically, riverine bottom-sediment samples were collected in and around areas near assumed sources of PCB contamination [4]. The investigation area extended from an impoundment on Mother Brook, located approximately 0.5 miles upstream of the former L.E. Mason Facility, downstream to the confluence of Mother Brook and the Neponset River. According to the USGS, the results of the 2004-2006 investigation indicated widespread PCB contamination in the sediments of the lower Neponset River [4].

The 2004-2006 USGS study detected Total PCB Aroclors in the bottom-sediment grab samples ranging from 135.4 to 25,751 µg/Kg. A total of three PCB Aroclors were detected in the bottom-sediment grab samples collected from the USGS study area and included the following (maximum concentration in parentheses): Aroclor-1242 (19,500 µg/Kg); Aroclor-1254 (5,460 µg/Kg); and Aroclor-1260 (791 µg/Kg) (see Attachment A, Figure 5C) [4]. Although USGS reported the PCB concentrations in 2004-2006 sediment samples as nanograms per gram (ng/g), the equivalent units of µg/Kg will be used throughout this report to maintain consistency in reporting concentrations [4].

Total PCB Aroclors were measured in the 2004-2006 PISCES water column samples and ranged from 267.5 up to 3,012.6 ng/ hexane sample at Fairmount Ave. A total of three PCB Aroclors

were estimated in the PISCES samples collected from the study area and include the following (maximum concentration and sample location in parentheses): Aroclor-1016/1242 [2,740 ng/sample (Fairmount Ave.)]; Aroclor-1254 (543 ng/sample (Paul's Bridge)]; and Aroclor-1260 [110 ng/sample (Fairmount Ave.)] (see Attachment A, Figure 5C) [4].

According to the USGS report, the PCB concentrations significantly increased in sediment core samples collected downstream of the confluence of Mother Brook and the Neponset River. PCB concentrations generally declined with distance away from the river mouth into the estuary. The USGS investigations noted that sediment quality in the Neponset River was generally better than that of other urban rivers in the United States, except with respect to PCBs [4].

The USGS reports note that the data suggest that widespread PCB contamination of the Lower Neponset River originated from Mother Brook, a Neponset River tributary, starting sometime around the early 1950s or earlier. In 1955, catastrophic dam failure caused by flooding likely allowed PCB-contaminated sediment to be transported downstream and into the lower segments of the Neponset River and its estuary. The original source area(s) were likely to have continued to release PCB-contaminated sediment after the flood and during subsequent rebuilding of downstream dams [2-4].

In 2013, AMEC Environment and Infrastructure, Inc. (AMEC), at the request of MassDEP, conducted sediment core sampling to further evaluate PCBs in Neponset River sediments at four areas along the Neponset River. The four areas are approximately 3,000 feet (ft.) downstream and 1,000, 3,000 and 4,000 ft. upstream of the confluence of the Neponset River and Mother Brook. PCB Aroclor results ranged from non-detectable concentrations up to 45,000 µg/Kg. The analytical results indicated that PCB concentrations were highest downstream of the confluence of Mother Brook and the Neponset River [5].

According to MassDEP and USGS documents, the PCB-contaminated sediments are mostly trapped behind the two rebuilt dams (the T&H Dam and the Baker Dam), and within the former Jenkins Dam impoundment, where sediments form the Braided Channel section of the river. Maximum PCB concentrations within the Lower Neponset River range up to 229,300 µg/Kg, while Mother Brook concentrations have ranged up to 73,400 µg/Kg (LE Mason sample SD-8A – Nov. 2000) [2-5; 8-9]. Following the 2009 excavation of the lower portion of Mother Brook to the confluence of the Neponset River, the maximum PCB concentration detected in post-excavation samples in Mother Brook was below the remedial action goal set forth in the 27 May 2007 Confirmation of Agreement Letter from MassDEP [6-7]. This goal was accomplished by excavation and off-site disposal of contaminated soil and sediment (approximately 2,500 tons) adjacent to and from within Mother Brook, and by construction of a subsurface vertical barrier wall to prevent the migration of contaminants from source areas to the brook. Closure sediment samples collected between 0 and 2 feet below surface grade (bsg) during excavation activities indicated that the average concentration of PCBs remaining in the brook following excavation was 1,670 µg/Kg (maximum concentration of 2,700 µg/kg), which was consistent with background [7].

USGS noted that some PCBs have diffused or been entrained back into the water column and are being transported downstream by river water into the estuary. In addition to the continuing release of PCBs from historically contaminated bottom sediment, USGS suggests that PCBs are still (as of 2003) originating from source areas along Mother and Meadow Brook, as well as other sources along the river [2-4].

The USGS reported that the data suggest that PCBs in river water were likely derived from several different sources; however, the exact locations of the historical contamination could not be conclusively determined. Although inconclusive, the data suggests that a major source of PCBs was likely on Mother Brook or near the confluence of the Neponset River with Mother Brook [2-4].

In 2008, Massachusetts Department of Fish and Game (DFG) requested MassDEP, the Division of Marine Fisheries, and the Department of Conservation and Recreation (DCR) to review the USGS Reports on the Neponset River. This review found that PCB concentrations in the top layers of bottom sediment ranged from 28 µg/Kg just upstream of the confluence of Mother Brook with the Neponset River to 24,900 µg/Kg measured farther upstream in Mother Brook. In addition, some bottom-sediment samples in the Neponset River and the Neponset River Estuary contained PCBs at concentrations well above sediment quality guidelines (2,000 µg/Kg) and could be classified as moderately regulated waste (50,000 to 499,000 µg/Kg) according to the Toxic Substances Control Act (TSCA). Some measured and estimated concentrations of dissolved PCBs were above the EPA continuous chronic criterion for dissolved PCBs [14 milligrams per Liter (mg/L)]. Concentrations above this criterion could cause harm to humans, wildlife, and fish, if exposed for long enough periods of time. PCB concentrations measured in riverine fish were above the concentrations (2,000 µg/Kg) considered safe for consumption by wildlife and humans by EPA [8-9].

The Department of Public Health (DPH) has placed a public health fish consumption advisory for the Neponset River between the Hollingsworth and Vose Dam in Walpole and the Baker Dam in Boston due to the PCB contamination as well as dichlorodiphenyltrichloroethane (DDT) that has been identified through other studies. The advisory covers three different categories identified as P-1, P-2, and P-4. P-1 indicates that children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat any fish from this water body. P-2 indicates that the general public should not consume any of the affected fish species (American Eel and White Sucker) from this water body. P-4 indicates that the general public should limit consumption of non-affected fish from this water body to two meals per month. Despite the warnings listed above, the Neponset River Watershed Association indicates that people still fish at a wide variety of locations along the Neponset River [8-9; 27].

MassDEP has completed a file review of PCB waste sites within the Neponset River Basin. A total of 34 sites have been identified that had or have PCBs as a contaminant of concern, and are located in the vicinity of the Neponset River or one of its tributaries. MassDEP also concluded that the major sources of the PCB-contamination to the lower Neponset River are located along Lower Mother Brook. Overall, MassDEP identified 10 properties that could be sources of PCBs to the Neponset River either directly or through one of its tributaries. Two of these sites are located on the Neponset River, upstream of the confluence of Mother Brook and the Neponset River, six sites are located along the lower sections of Mother Brook, and two sites are located downstream of the Mother Brook confluence on the Lower Neponset River [8-9].

The two sites located upstream of the confluence of Mother Brook and the Neponset River include the Canton Airport Site [Release Tracking Numbers (RTNs) 4-3000941, 4-3020140, and 4-0022292], which is located along Neponset Street in Canton approximately 6 miles upstream of the Mother Brook confluence, and the Norwood PCB site (RTN 4-3000403), which is located along Meadow Brook in Norwood and approximately 7.5 miles upstream of the confluence of Mother Brook and the Neponset River. The six sites located along Lower Mother Brook include: (1) the former LE Mason Facility at 98 Business Street (RTN 3-0730); (2) the former Allis &

Chalmers Manufacturing Facility at 1377 Hyde Park Avenue (RTN 3-27067); (3) the Former American Tool and Machine at 1415 Hyde Park Avenue (RTNs 3-27790, 3-27791, 3-28336 & 3-28835); (4) the former Allis & Chalmers Electrical Manufacturing facility at 1344 Hyde Park (3-32581); (5) the former location of a Junkyard/Paint Manufacturing Facility at 56R Business Street (RTN 3-23869); and (6) North and South Banks of Mother Brook (RTN 3-27168). The two sites located downstream of the confluence of Mother Brook and the Neponset River include the former Lewis Chemical Facility at 16 Fairmount Court (RTNs 3-1616, 3-0031548, and 3-0031697) and the former Bay State Paper at 892 River Street (RTNs 3-25435 and 3-0027201) (Attachment A, Figure 6) [8-9].

Former LE Mason Facility (RTN 3-0730)

The Former LE Mason Facility is located at 98 Business Street in the southwestern portion of the Hyde Park section of the city of Boston. The site abuts the northwestern banks of Mother Brook, a tributary of the Neponset River. The site is situated in a mixed residential and industrial area, which is zoned for both light industrial and residential use. The site has been used for various manufacturing purposes for over 130 years (since before 1891). Between 1945 and 2002, the site was occupied by LE Mason, a producer of cast zinc and aluminum electrical supplies. In 1999, LE Mason was acquired by Thomas and Betts Corporation (T&BC). The operations performed on the site included zinc and aluminum die-casting, wet spray painting, assembly and packaging of the finished products, and shipping and receiving. Since 2002, those operations are no longer conducted at the facility and it is instead used as office and storage space for a moving company, and a small shipping company [7].

In November 1986, a subsurface investigation was conducted at the site, in which oil and/or hazardous materials (OHM) contamination in soil and groundwater was documented. MassDEP assigned RTN 3-0730 to the entire site in 1987. On 3 January 1996, the site was classified as a Tier IB Transition-site (Permit No. 104178) and a Tier IB Extension was approved by MassDEP extending the permit through March 21, 2007. Additional permit extensions were granted by MassDEP through April 3, 2011 [7].

Several assessment and remedial actions have occurred at the site. The results of past site investigations concluded that soil, groundwater, and indoor air on the site and sediment in the adjacent Mother Brook have been impacted by releases of OHM to the environment. OHM identified at the site included chlorinated and non-chlorinated volatile organic compounds (VOCs), PAHs, petroleum hydrocarbons, heavy metals, and PCBs.

Between 1997 and 2000, several assessment activities occurred. Contamination was found to be up to 50 feet below grade around the property, within the property boundaries. Later, sediment samples were collected upstream and downstream of the site. The upstream sample results had a maximum of 520 µg/Kg total PCBs, while downstream sample results had a maximum of 2,183,300 µg/Kg total PCBs. Subsequent remedial activities included excavation of 2,024 tons of PCB-impacted soil/sediment and post-excavation confirmation sampling [6-7].

Through the 1999 acquisition of LE Mason, T&BC became the responsible party of record for the response actions at the Former L. E. Mason facility. This included the dredging and remediation of portions of Mother Brook that are upstream of, adjacent to, and downstream of the LE Mason property.

Remediation actions included major excavation activities on site, and within Mother Brook to remove contaminated sediments, which extended downstream at least to the confluence of the

Neponset River and Mother Brook. PCB-contaminated sediment was completely excavated from site downstream to the Neponset River (1,400 feet). Depth of excavation extended to more than 20 feet in Upper Mother Brook to 1.5 to 4 feet in Lower Mother Brook. Other remediation actions included groundwater treatment and the construction of a barrier wall, and subsequent restoration of the downstream section of Mother Brook.

Former Allis & Chalmers Manufacturing Facility (RTN 3-27067)

The Former Allis & Chalmers Manufacturing Facility (A&CMF) is located at 1377 Hyde Park Avenue in the Hyde Park section of Boston, Massachusetts. Currently, the property consists of a Shaw's Supermarket building and associated parking. The site is situated in a mixed industrial, commercial, and residential area. Mother Brook, located immediately adjacent to the site behind the building, flows eastwardly and discharges to the Neponset River [10].

Between 1930 and 1972, the site was a research and development (R&D) facility for electrical equipment for Condit Electrical Manufacturing Company (which was later owned by Allis & Chalmers Corporation).

During the late 1990s and early 2000s, response actions were conducted for the Former L. E. Mason facility, consisting of dredging and remediation of portions of Mother Brook that are upstream of, adjacent to, and downstream of the A&CMF property. During this dredging and remediation, T&BC used a portion of the supermarket's property to stockpile excavated sediments from Mother Brook. During the stockpiling activities, T&BC identified two discharge pipes along the embankment behind the supermarket building and collected soil and sediment samples at the end of each of the pipes, directly surrounding the pipes, and along the embankment. Analytical results of the samples collected indicated the presence of PCBs at concentrations ranging from 300 to 3,400,000 µg/Kg. With the exception of one sample, only Aroclor 1248 was detected in the samples; other Aroclors were not detected.

On 6 September 2007, following the detection of PCBs in the soil and sediment, MassDEP issued a Notice of Responsibility (NOR) and issued RTN 3-27067. In October 2007, MassDEP directed that going forward, RTN 3-27067 was to be used to track work on the upland areas of the 1377 Hyde Park Ave property. MassDEP directed that RTN 3-27168 was associated with the on-going Immediate Response Action (IRA) work to remediate and stabilize the 1377 Hyde Park Ave stream bank (as well as the PCB-contaminated stream bank on the far side of Mother Brook) and was to be conducted jointly by T&BC and Shaw's Supermarket.

A Phase I, Phase II, and Method 3 Risk Characterization (M3RC) were conducted to characterize the site. In addition, a Class B-2 Response Action Outcome (RAO) Statement was submitted to MassDEP. The RAO Statement concluded that the PCBs in soil did not constitute PCB remediation waste and were not subject to regulation under TSCA and the PCB MegaRule, and that No Significant Risk of Harm to Human Health exists [10].

In October 2007, MassDEP significantly modified its prior directions for the response action in connection with RTN 3-27067. This included directing that on-going IRA work to remediate and stabilize the 1377 Hyde Park Avenue stream bank was to be conducted by both T&BC and New Albertons. T&BC is the responsible party for response actions at the Former L. E. Mason facility, located west and upstream of the A&CMF. In 1999, LE Mason was acquired by T&BC. New Albertons is the parent company of Shaw's Supermarkets, Inc. This response action included the dredging and remediation of portions of Mother Brook that are upstream of, adjacent to, and downstream of the A&CMF.

Former American Tool and Machine (RTN 3-028835)

The Former American Tool and Machine facility is located at 1415 Hyde Park Avenue in the Hyde Park section of Boston, Massachusetts. The site is occupied by a former tool and machine manufacturing mill structure (three-story brick former mill and one-story warehouse) which was renovated to relocate the Boston Renaissance Charter Public School (BRCPS). The mill building was constructed prior to 1917, and the warehouse building was constructed in the mid-1970s. The site is bounded by the Mother Brook and commercial property to the north, a Massachusetts Bay Transportation Authority (MBTA) right of way to the west, Dacy Street and multi-unit residential property to the south, and Hyde Park Avenue and commercial property to the east [11-12].

T&BC is the responsible party for response actions at the Former L. E. Mason facility, located west and upstream of the BRCPS. These response actions included the dredging and remediation of portions of Mother Brook that are upstream of, adjacent to, and downstream of the BRCPS. An agreement between the parties conducting response actions on the Mother Brook project and the BRCPS provided access to the BRCPS site for the purpose of facilitating the on-going remediation activities along Mother Brook. Specifically, BRCPS agreed to provide access to the subject site for the purpose of constructing a temporary stockpile pad that was to be located on the northern end of the BRCPS site, for use in temporary stockpiling of excavated soil from the Mother Brook, equipment access to the Brook, and for conducting remedial activities on the brook's bank. Analytical results of samples collected prior to the preparation of a stockpile pad on the BRCPS property indicated elevated levels of PCBs (specifically Aroclor-1254) ranging from 49,000 µg/Kg to 640,000 µg/Kg. Additional investigations confirmed the extent of PCB contamination. BRCPS prepared a Modified Release Abatement Measure (RAM) Plan and excavated and removed for off-site disposal 8,720 tons of TSCA (≥50,000 µg/Kg) characterized waste and 5,563 tons of Non-TSCA (<50,000 µg/Kg) characterized waste from the property [11-12].

Former Allis & Chalmers Electrical Manufacturing (RTN 3-032581)

The Former Allis & Chalmers Electrical Manufacturing (A&CEM) facility is located at 1344 Hyde Park Avenue in the Hyde Park section of Boston, Massachusetts. The site is bounded by the Mother Brook to the south, Hyde Park Avenue to the west, and residential and commercial properties to the north and east. Margin Street is located to the south, on the opposite side of Mother Brook [13].

The site was occupied by the Robert Bleakie & Co. Woolen Mill by 1891. By 1917, the site was occupied by the American Felt Co. Between 1930 and 1974, the Condit Electrical Manufacturing Co. (which later became Allis & Chalmers Electrical Manufacturing) occupied the property until a fire in 1974. Historical records show that a major fire occurred at the facility on 17 April 1974. The A&CEM facility property is currently occupied by a three-story multi-unit residential brick building (Blake Estates I and II) constructed in 1980. The Blake Estates I and Blake Estates II apartment building house 263 residents on the property [13].

The LE Mason excavation of Mother Brook included the stretch of the river immediately abutting the A&CEM property. During remediation of Mother Brook by L.E. Mason, five separate drainage pipes were identified extending from the property and discharging into Mother Brook. Sediment samples collected from inside of four of the five drainage pipes showed elevated concentrations of PCBs. Sampling of sediments at the outfall pipes of the A&CEM facility indicated maximum PCBs of 42,000 µg/Kg. Aroclor-1254 was the most commonly detected Aroclor detected in the samples collected from the discharge pipes [13].

In 2013 EPA/Weston Solutions, Inc. Superfund Technical Assessment and Response Team III (START III) conducted soil sampling and identified a source area on the property. The maximum Aroclor concentrations were Aroclor-1248 (6,700 µg/Kg), Aroclor-1254 (7,600 µg/Kg), and Aroclor-1260 (2,500 µg/Kg). In December 2015, a Permanent Solution Statement was submitted to MassDEP. The statement concluded that a release of PCBs was identified in soil on the subject site, but a Method 3 Risk Assessment indicated that contamination concentrations in site soils were present at a level of No Significant Risk at the subject site. It also determined that an Activity and Use Limitation was not necessary to maintain a condition of No Significant Risk. The Method 3 Risk Characterization noted that produce expected to be grown on the site should follow Best Management Practices (BMPs) for gardening in urban areas. Therefore, it was recommended that gardening BMPs be employed on the site. A Permanent Solution with Conditions is applicable for the site [13].

Former Junkyard/Paint Manufacturing Facility (RTN 3-23869)

The Former Junkyard/Paint Manufacturing Facility consists of three vacant parcels of a six-parcel property known as 54-64A Business Street that is currently owned by The Village at Cleary Square, LLC and has been redeveloped as a residential condominium community. Portions of the property were operated as a gristmill, a sash and blind factory, and a coal company before 1891; and from the 1930s to the 1960s, the Dampney Paint Co., a paint formulation company, occupied the northern portion of the Site that abuts the railroad tracks. According to historical records, the property was primarily operated by Hyde Park Auto Replacement Parts, Inc., as an auto salvage business between 1934 and 2004 [14].

A limited subsurface investigation was conducted between June 2002 and October 2003 as part of a request by the financial institution of a condominium complex prior to redevelopment. Test-pitting activities uncovered stained soils and car and building debris. Soil samples were collected across the property, and several analytes were detected, including PCBs above the RCS-1 Reportable Concentrations and the Method 1 S-1 GW-2 and GW-3 standards. In 2004, a RAM Plan was submitted to MassDEP. The RAM was performed between May 2004 and January 2005 and resulted in the excavation and off-site disposal of a total of 10,862 tons of impacted soil. In 2005, a RAM Completion and Class A-3 RAO Statement was submitted to MassDEP. Based on the results of the RAM and a Method 3 Risk Characterization, a level of No Significant Risk (NSR) to human health, safety, welfare, and the environment had been achieved, with the implementation of A Notice of Activity and Use Limitation (AUL) to restrict future use of a portion of the Site. An AUL was recorded for a portion of the property on 4 April 2005 [14].

North and South Banks of Mother Brook (RTN 3-27168)

The North and South Banks of Mother Brook has been defined as encompassing the North and South Banks along a stretch of approximately 400 feet of Mother Brook between the easterly (downstream) side of the MBTA/Amtrak railroad bridge (upstream limit) and the westerly (upstream) side of the Hyde Park Avenue bridge (downstream limit). The boundaries extend from the top of the stream bank to the toe of the stream bank on both the north and south sides of Mother Brook between the two bridges. The North Bank of Mother Brook site includes the bank of Mother Brook immediately south of the Former Allis & Chalmers Manufacturing Research and Development facility (now a Shaw's Supermarket). The South Bank of Mother Brook site includes the bank of Mother Brook immediately north of the Former American Tool and Machine Company (now the Boston Renaissance Charter Public School). PCBs on the North Bank were discovered during the remediation of the Former LE Mason property and the downstream portion of Mother Brook. A subsequent IRA of both the North and South banks indicated elevated PCBs within surface soils. Excavation extended approximately 6 feet horizontally into the banks. Additional

excavation was completed as required for reconstruction purposes and based on confirmatory soil samples. Both banks were covered in July 2010. A direct contact barrier was constructed on the North Bank to contain any remaining PCB contamination, and to prevent migration of PCB-contaminated soil and/or sediment into Mother Brook, while gravel, crushed stone, and rip rap installed on the South Bank served to stabilize the bank. Following stabilization of the South Bank, woody vegetation on the bank was restored. Permanent fencing restricts access to both banks [15].

In November 2010, a Response Action Outcome Partial Statement (RAO-P) for a Class A-3 Permanent Solution was submitted for the North Bank. A Method 3 Risk Characterization was performed to evaluate the risk posed by the northern bank portion of the site. The results of the Risk Characterization indicated that a condition of No Significant Risk exists for current and foreseeable future land uses on the northern bank of Mother Brook, based on the placement of an AUL on 1377 Hyde Park Avenue and the appropriately restricted uses of the Amtrak Parcel portion of the site consistent with its status as a rail right-of-way for which no AUL is required [16].

Former Norwood PCB Superfund Site (RTN 4-3000403)

The Norwood PCB Superfund Site is approximately 26 acres of an industrial/commercial area in Norwood, Massachusetts. The site includes several commercial, industrial, residential, parking areas, and fields. A portion of the property is referred to as the Hurley property, which was formerly occupied by the Grant Gear building and was used to manufacture electronic equipment and gears. The Hurley property is now owned by MonkeySports Capital MA, LLC. The site is bordered to the north by Meadow Brook, to the east by the heavily commercial U.S. Route 1 and the Dean Street access road, to the south by Dean Street, and to the west by the residential Pellana Road [17-18].

Contamination at the Norwood PCB Site originated from disposal practices of the parties who previously owned/operated businesses on the Hurley property. The building was constructed in 1942 by Bendix Aviation Corporation, which produced navigational control systems and conducted other electronic research in the building for the U.S. Navy. In October 1947, the land was purchased by Tobe Deutschman Corporation, which manufactured electrical equipment at the Site, including capacitors and transformers. The property was purchased in October 1956 by Cornell-Dubilier Electronics, Inc., which also manufactured electrical equipment at the facility. In January 1960, the property was briefly owned by Maryvale Corporation, and then purchased by the Friedland Brothers. The Friedland Brothers leased the property to Federal Pacific Electric Company, which held the lease on the property until October 1979. During the period from 1960 to 1979, Federal Pacific Electric operated a business at the site, and sublet portions of the facility to Cornell-Dubilier Electronics, Inc. and to Arrow Hart Corporation, which also manufactured electrical equipment at the facility [17-18].

In April 1983, Massachusetts Department of Environmental Quality Engineering (DEQE), now known as MassDEP, began sampling at the property and identified PCB soil contamination. Beginning in June 1983, EPA began removing contaminated soils from the site. A total of 518 tons of contaminated soils were excavated and removed from the site [17-18].

Several investigations between 1983 and 1996 indicated elevated levels of PCBs in surface soils on and off property, in sediments adjacent to Meadow Brook, and in portions of the building. Analytical results indicated PCBs up to 26,000,000 µg/Kg in soils. PCBs were found up to 20 feet deep in some locations. Sediment samples indicated PCBs as high as 1,100,000 µg/Kg, and dredge soil piles indicated PCBs as high as 3,850,000 µg/Kg. Remedial activities began at the property

in late 1996 and included building demolition, soil/brook remediation including excavation of Meadow Brook sediments, and excavation of PCB-impacted soils. In May 2008, construction began for retail development on the property and was substantially completed in 2009 [18].

Former Canton Airport (RTNs 4-3000941, 4-3020140, and 4-0022292)

The Former Canton Airport site is a former local airport located on Neponset Street, east of Interstate 95 in Canton, MA. The Canton Airport operated from the 1930s until it was closed in the mid-1950s. From the 1950s until the 1980s, several tenants occupied the property and buildings, including a helicopter repair company, a scrap metal dealer, and a truck repair shop. The property currently consists of wetlands and wooded areas. PCBs were initially detected in surface soil samples around the site buildings in 1984 as part of a due diligence investigation for a potential buyer. The site was originally placed on the MassDEP site list in January 1990 due to PCBs in soils. An IRA was approved by MassDEP in 2001. Surface soil sampling during the IRA indicated PCBs as high as 18,000,000 µg/Kg. Fencing was placed around the areas with the highest PCB levels in soil. Excavation of soils outside of the fenced area was completed. Between 2005 and 2006, the three vacant on-site buildings were demolished and the debris was removed [19].

Former Lewis Chemical (RTNs 3-001616, 3-31548, and 3-31697)

The Former Lewis Chemical Site is located at 0 and 12-24 Fairmount Court in Hyde Park, Massachusetts (RTN 3-001616). The site also includes a parcel of State land owned by the DCR (The Neponset River Reservation) located off Fairmount Court, located between the Neponset River and the Former Lewis Chemical facility (RTN 3-31548). An additional RTN (3-31697) is associated with the property for a release condition related to total lead in the soil. The Former Lewis Chemical property (current 12-24 Fairmount Court) was occupied by several businesses in the late 1800s and early 1900s including the Royal Remedy Co Laboratory, a mason and picture painting company, a quilted brush factory, mill stone manufacturer, a carpenter, dental tool manufacturer, a knitting business, a chemical and dye company, and residential apartments. The property operated as a leather manufacturing company from 1940 to the early 1960s. Lewis Chemical collected, stored, transported, and processed hazardous waste on the property from 1963 until 1983. MassDEP issued a court order to Lewis Chemical to cease operations in 1983. The City of Boston gained ownership of the property in October 2000 via tax foreclosure. The former building was demolished in July 2013 and only the foundation slab remains [20-21].

On July 2010, a Release Abatement Measure (RAM) Plan was developed to address elevated VOC concentrations in soil and subsequently reduce soil gas concentrations that were infiltrating ambient air inside the vacant building. In June 2013, a RAM Completion Report was completed documenting the soil vapor extraction (SVE) system installed at the former building and subsequent demolition of the building in July 2013 [22].

Several remedial activities have been conducted at the DCR portion of the site. A Phase I Site Investigation was conducted at the DCR-owned portion of land between the Neponset River and the Lewis Chemical Site. A review of previous reports during the Phase I Site Investigation indicated that PCBs were discovered during many investigations, mostly near the former tank farm pad at the former Lewis Chemical property. PCBs were found down to 15 feet. Samples collected by Woodard and Curran in 2008 indicated PCBs as high as 300,000 µg/Kg at 0-3 feet. Nobis conducted soil boring in 2013 and found PCBs as high as 13,000,000 µg/Kg in soils. Elevated PCBs have been found in surface soils along the DCR-owned property. There is no documented use of PCBs at the adjacent former Lewis Chemical. However, relatively high concentrations of PCBs detected in soils immediately adjacent to the former tank farm pad area, along with the

detection of PCBs within drain sludge in that area, strongly suggest Lewis Chemical used, stored, and/or disposed of PCBs at one time [21; 23].

Former Bay State Paper Company (RTNs 3-0025435 and 3-0027201)

The Former Bay State Paper Company is located at 892 River Street in Hyde Park, Boston, Massachusetts. The property was used for paper mills dating back to 1773. The Tileston & Hollingsworth Paper Company operated at the site until 1967. The site was owned by several other companies before Bay State Paper, which operated until 2004. The property is bounded by the Neponset River and the MBTA Railroad to the south; Lefevre Street to the east; River Street to the north; and River Street Terrace to the west [24].

Releases at the site have occurred at six separate times. The releases, which appear in a cluster on the southeastern portion of the site, were all related to fuel oil deliveries and have been remediated to a condition of No Significant Risk [24].

A 2005 Phase II assessment reported a Reportable Concentration of PCBs based on 17 samples collected from throughout the property. Soil around the base of two transformers exceeded the 2,000 µg/Kg allowed by the Massachusetts Contingency Plan (MCP). The soils under transformer T-4 had elevated PCBs up to 1,740,000 µg/Kg and under transformer TSI-014 had elevated PCBs up to 4,920 µg/Kg. In 2008, a RAM plan was submitted for the redevelopment of the property into a retail shopping center. The redevelopment involved demolition of a majority of the above-grade portions of the existing brick and masonry paper mill facility, localized remedial excavations, earthwork to raise site grades above the existing facility basement level, and construction of a retail shopping center comprised of seven new buildings and a renovated 1902 powerhouse building [24-25]. The RAM plan included the phasing out and off-site disposal of TSCA-regulated soil/media at former Transformers T-4 and TSI-014 [26].

In 2008, MassDEP completed an evaluation of the USGS reports, collected and evaluated additional sediment data upstream and downstream of the confluence of Mother Brook and the Neponset River, completed a preliminary evaluation of technical reports submitted for all the sites listed above, and was in the process of completing comprehensive technical screening audits for sites in the area. The MassDEP noted that this preliminary evaluation was consistent with the conclusions of the USGS reports. The concentrations of PCBs in both the surface water and sediments of the Neponset River increase dramatically at the Mother Brook confluence, and the chemical signature also dramatically shifts. According to MassDEP, this provides strong evidence that PCBs from facilities in lower Mother Brook are largely responsible for PCB contamination in the Neponset River from the Mother Brook confluence to the Baker Dam. According to MassDEP, the technical evidence indicates that the largest contributor of PCBs in the lower Neponset River is the Former LE Mason Facility, where PCBs excavated in Mother Brook adjacent to the facility extended to depths of 34 feet. Other sources along lower Mother Brook, and along the Neponset River, both upstream and downstream of the confluence, appear to be less significant. MassDEP noted that it is clear the former Norwood PCB site has made a significant contribution to PCBs in the Neponset River, and evidence of PCBs from this facility extends into the Neponset River Estuary. However, due to the location of the Norwood PCB site approximately 7.5 miles upstream of the Mother Brook confluence, much of this contamination is spread out in depositional areas along the entire river course [9].

MassDEP analyzed National Oceanic and Atmospheric Administration (NOAA) congeners for the 28 sediment samples collected by the USGS for which congener data was available, to document the changes in PCB congener pattern in sediments at and downstream of the Mother Brook

confluence. There are 18 PCB NOAA congeners which have been identified as those that do not readily biodegrade. For areas upstream of LE Mason within Mother Brook, and areas upstream of the Mother Brook confluence within the Neponset River, the PCBs are dominated by the more heavily chlorinated penta-deca congeners. Within Mother Brook, from LE Mason to the confluence with the Neponset River, and downstream to the Baker Dam, the PCB congeners are dominated by the mono-tetra variety. MassDEP noted that this evidence provides strong technical evidence that the major sources of PCBs to the lower Neponset River are from lower Mother Brook [9].

The MassDEP evaluation also identified that in 1962, the Neponset River was dredged from the Baker Dam to the T&H Dam. In 1964, the Neponset River was dredged from the T&H Dam to the Neponset Valley Parkway (Paul's Bridge). The dredge spoils were distributed in low-lying areas along the banks of the Neponset River in 14 discrete areas. In eight of the 14 locations, the dredge spoils were deposited near parks and residential areas which are accessible to the general public. Due to a concern over the presence of PCBs in the dredge spoils, MassDEP completed a sampling program within the eight dredge spoils areas of concern. The only dredge spoil area where PCBs have been identified is in the back yards of eight residential properties located along Riverside Square in Hyde Park [9].

MassDEP and EPA completed investigations of the magnitude and extent of the PCB contamination in the back yards of Riverside Square properties from 2009 through 2012. PCBs are present in surface soils above concentrations that pose an imminent hazard at 5 Riverside Square, and at concentrations that present a long-term risk to human health at 1 and 15 Riverside Square. To remove this risk, remediation of PCB-contaminated soil still needs to be completed in the back yards of these three residential properties [9].

MassDEP also noted in a 2015 Neponset River PCBs Contamination document that a then-recent investigation of technical reports submitted for the former Bay State Paper Company revealed that additional dredging activities were completed for flood control purposes from directly behind the T&H Dam in 1960. The dredge spoils would be expected to be highly contaminated with PCBs, and were placed on the property presently owned by the DCR on the south side of the Neponset River, directly across the Neponset River from the 892 River Street property. The extent of PCB contamination in this area has not been investigated. MassDEP also noted that a detailed evaluation of the entire flood control dredging project conducted by the MDC should be completed to determine if there are other upland areas where dredge spoils have been disposed of [9].

On 27 October 2015, MassDEP requested that the EPA evaluate the Neponset River for potential listing on the National Priorities List (NPL) as the surface water, sediment, and fish within the Neponset River and Estuary are contaminated with PCBs. The contamination is spread from Norwood to the Neponset River Estuary, with the highest concentrations located downstream of the Mother Brook confluence. The highest concentrations of PCBs are present in sediments behind the T&H Dam, behind the Baker Dam, and in the vicinity of the former Jenkins Dam where a series of mid-channel islands now exist in an area identified as the Braided Channel. MassDEP noted that the presence of PCBs presents an ecological risk to aquatic life and a risk to humans through fish consumption. Although DPH has placed fish consumption advisories for the Neponset River, the Neponset River Watershed Association has documented that fishing still occurs at a variety of locations. Dredging of Neponset River for flood control in the early through mid-1960s spread PCB-contaminated sediment to a variety of upland areas, some of which are presently used for residential and recreational purposes. Long-term human health risk due to PCB contamination levels has been documented in the back yards of three residential properties located

along Riverside Square in Hyde Park. The full extent of dredge spoils excavation and disposition along the Neponset River has not been fully evaluated [9].

In a 2015 letter to EPA, MassDEP noted that remediation of the Neponset River would be a large scale project. PCB-contaminated sediments would have to first be remediated to minimize the potential for further migration of PCBs downstream and into the estuary. This remediation would facilitate the goals of the Massachusetts Department of Fish and Game to dismantle the dams to restore the river channel to its natural conditions, and to promote fish passage. MassDEP further noted that PCBs that present a risk to residential and recreational receptors should be remediated from upland areas. In 2002, USGS calculated sediment volumes that would need to be removed: an estimated at 22,960 and 7,780 cubic yards from behind the T&H Dam and the Baker Dam, respectively [3, 9].

The above investigations are discussed in greater detail in the Waste/Source Sampling section and Surface Water Pathway sections of this report.

On 1 August 2017, EPA, MassDEP, and START representatives conducted an on- and off-site reconnaissance of the Neponset River, Mother Brook and surrounding area. The reconnaissance included the following activities: conducting ambient air monitoring; documenting the location of boat access points, potential sampling locations, and potential wetlands from public access locations; observing and documenting conditions of Mother Brook and the Neponset River; observing and documenting the location and condition of dams; and holding discussions regarding past and current investigation activities.

An on-site reconnaissance/wetland survey was conducted on 4 October 2017 and during the week of 16 October 2017. As part of the on-site reconnaissance/wetland survey activities, START personnel navigated and observed the waterways comprising the entire Lower Neponset River PCB study area, including Mother Brook downstream of Maverick Street to the confluence with the Neponset River, and the Neponset River from Fowl Meadow Reservation downstream to the Walter Baker Dam. START and EPA personnel observed several large wetland areas within the study area, along both the Neponset River and Mother Brook, during several river reconnaissance/wetland survey activities in October 2017. START and EPA personnel observed palustrine emergent, shrub, and forested wetlands within the study area. Wetland ecosystems were observed bordering the river banks and on islands within the river and brook. Several large islands within the Braided Channel section of the Neponset River were observed to be comprised of wetland ecosystems. In addition, START and EPA personnel observed that although the riverbed is armored and portions the river banks contain rip-rap erosion control features, the majority of the river banks within both the Neponset River and Mother Brook study areas are bordered by patches and/or fringes of wetland ecosystems. START observed the sediment accumulation source areas throughout the site. START noted that there are no containment features which would prevent migration from sources to the surface water pathway (SWP). Access to the sources area is generally unrestricted to pedestrians. Since the site is a sediment plume of unknown origin, the only buildings or structures associated with the site are the Tileston and Hollingsworth Dam and the Walter Baker Dam, which partially restrict movement of sediment within the river, likely resulting in the accumulation of both sediment and contamination upstream of the dams.

Between 13 and 17 November 2017, as part of the Lower Neponset River PCBs Site SI, START personnel collected a total of 60 sediment/source samples, including three field duplicates, from the Lower Neponset River, Mother Brook, as well as a section of the upper Neponset River for

PCB (Aroclor), Percent Solids, Total Organic Carbon (TOC), and Grain-Size analyses (see Attachment A, Figures 7 through 7F) [57].

Between 4 and 6 September 2018, as part of the Lower Neponset River PCBs site SI, START personnel collected a total of 103 sediment/source samples, including four field duplicates, from the Lower Neponset River, Mother Brook, as well as a section of the upper Neponset River, for PCB Aroclor field screening. In addition, 12 sediment samples were submitted for PCB Congener, Percent Solids, and TOC analyses (see Attachment A, Figures 9 through 9F). Additionally, START submitted 20 sediment/source samples, including one field duplicate, for PCB Aroclor analysis through the OEME laboratory [57].

Based on analytical results of the sediment samples, a contaminated sediment/source area containing PCBs has been documented (see Attachment F, Tables 1 through 3). The collection and comparison of sediment/source samples against background concentrations, and analytical results of START sediment/source samples collected as part of this SI, are discussed in greater detail in the SWP section of this report.

Table 1 presents identified structures or areas associated with the Lower Neponset River PCBs site that are documented or potential sources of contamination, the containment features associated with each source, and the relative location of each source.

Table 1

Source Evaluation for the Lower Neponset River PCBs site

Source Area	Containment Features	Spatial Location
Contaminated sediments	None	Lower Neponset River (confluence of the Neponset River and Mother Brook to Walter Baker Dam)

[2, 3, 4, 57]

Table 2 summarizes the types of potentially hazardous substances which have been disposed of, used, or stored on the areas associated with the Lower Neponset River PCBs site.

Table 2

Hazardous Waste Quantity for the Lower Neponset River PCBs site

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
PCBs	Unknown (in excess of 30,000 cubic yards)	Unknown	Unknown	Contaminated sediments (known and unknown sources)

PCBs = Polychlorinated biphenyls.

[3. 9]

There are six additional sites located in Boston that are listed in the Superfund Enterprise Management System (SEMS) database [28]. In addition, there are 653 sites listed in the Resource

Conservation and Recovery Act Information System (RCRIS). Eighty-eight of these RCRA facilities are located within 1 radial mile of the site boundary [29, 58].

A historical environmental records/database review was provided by Environmental Data Resources Inc. (EDR) to aid START in determining potential sources of attribution to the site and SWP. The database review lists sites with environmental concerns found within a specified radius of the subject area of concern or parcel. EDR completed the data search of sites with environmental concerns found within 1-mile of the Lower Neponset River site boundary, defined as the lower Neponset River channel from the confluence of Mother Brook with the Neponset River, downstream to the Baker Dam. The review also identified "Orphan sites" which may be located within 1-radial mile of the site based on the available information but whose specific locations cannot be mapped due to poor or inadequate address information. The EDR assessment revealed the following key points:

- EDR identified 83 sites available for mapping within 1-radial miles of the site boundary (based on addresses or coordinates) and another 119 orphan sites that are potentially located with 1-radial mile of the site, whose locations could not be confirmed. Some EDR locations identified have multiple federal or state sites listed for that map location. These may be locations where multiple sites have occupied the same location throughout the years, map locations which may overlap with other sites, or those which have the same address or map identified coordinates.
- Three of the sites identified within 1 radial mile of the site boundary are EPA Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Enterprise Management System (CERCLA/SEMS) sites and three additional identified sites are EPA CERCLA/SEMS-Archive sites.
- EDR identified 88 current or former Resource Conservation and Recovery Act (RCRA) facilities within 1 radial mile of the site boundary. These consist of two RCRA Large Quantity Generator (LQG) sites, eight RCRA-Small Quantity Generator (SQG) sites, 30 RCRA-Conditionally Exempt Small Quantity Generator (CESQG) sites, and 48 RCRA - Non Generator/No Longer Regulated (Non Gen/NLR) sites located within 1 radial mile of the site boundary. Non Gen/NLR sites include former RCRA facilities that are no longer operating at this location or that have changed processes and are no longer using RCRA regulated substances.
- EDR also identified 15 mapped locations of PCB-related occurrences or releases within 1 radial mile of the site boundary. Some of these sites are within the EPA and/or State data systems, and in some cases multiple PCB releases are listed as having occurred at one mapped location.

WASTE/SOURCE SAMPLING

Historical Waste/Source Sampling

As noted previously, the Lower Neponset River PCBs site is considered an approximately 3.7-mile riverbed segment where PCB-contaminated sediments have likely accumulated from both suspected and unknown sources and PCB releases, to form a plume of PCB-contaminated sediment of unknown origins. Since there is no known source of the sediment contamination plume, the sediment lying within the stream channel is considered waste/source material. To date, no known previous investigations have focused solely on the lower portion of the Neponset River between the confluence of Mother Brook and the Neponset River downstream to the Baker Dam. Previous investigations have included, as part of their activities, the collection of sediment samples from

the Lower Neponset River PCBs Site area. No direct waste/source sampling has been conducted in association with the Lower Neponset River PCBs site.

Private entities, along with State and Federal agencies have conducted sampling along the Neponset River and its tributaries (including Mother Brook), as part of hazardous waste site investigations, remedial efforts, and research efforts. Figure 6 indicates the locations of the 10 sites identified by MassDEP and discussed above.

US ACOE, USGS, MassDEP, and others have conducted previous investigations of the Neponset River and Mother Brook, which have included sediment sampling of segments within the Lower Neponset River, considered the site, as part of their investigations.

In 2002, US ACOE conducted a study in an effort to restore fish passage, habitat, and recreational use of the Neponset River. As part of this study, two sediment cores were collected and analyzed. USGS reported that during the US ACOE study, one sediment-core sample was collected from the Baker Dam Impoundment and one sediment-core sample was collected from the T&H Dam Impoundment. These bottom-sediment cores were found to be saturated with many contaminants, most notably PCBs. Analytical results indicated that the bottom sediments contained elevated concentrations of PCBs [2-3]. No additional information is available regarding the concentrations or findings of the US ACOE investigation.

The USGS New England Water Science Center collected sediment samples between 2002-2003 and 2004-2006 from Mother Brook and the Neponset River [2-3].

The initial investigation in 2002-2003 focused on the Neponset River. Sediment samples were collected at 51 sampling stations along the lower Neponset River by sediment-grab samplers (20 sites) and sediment-core samplers (31 sites). Sample locations BGY-100 through BGY-104 are located on the Upper Neponset River, upstream of the Mother Brook confluence; sample locations BGY-105 through BGY-107 are located on the Lower Neponset River downstream of the Mother Brook confluence; sample locations BGY-108 through BGY-111, BGY-113, BGY-114, and M2Y-001 and M2Y-002 are located in the T&H Impoundment area; sample locations BGY-112, BGY-115 through BGY-119, BGY-121, BGY-124, and M2Y-003 and M2Y-004 are located on the Lower Neponset River between the T&H Dam and the Braided Channel; sample locations BGY-120, BGY-122, BGY-123, BGY-125 through BGY-129, and M2Y-005 through M2Y-011 are located in the Braided Channel; sample location M2Y-012 is located between the Braided Channel and the Baker Dam; and sample locations BGY-130 through BGY-138 are located in the Baker Dam Impoundment area. The samples were analyzed for concentrations of elements, PAHs, toxicity characteristic leaching procedure (TCLP) metals, PCBs, organochlorine pesticides, and also for grain-size distribution [2-3].

In October 2002, sediment-grab samples were collected from 20 randomly selected locations between Fowl Meadow and the Baker Dam. An Eckman dredge, stainless-steel scoop, and stainless-steel spoon were used to collect sediment-grab samples, depending on the water depth. The top 4 inches (if available) of the sample was either removed from the dredge or scooped from the sediment surface, homogenized, screened through a 6-mm sieve, and placed in pre-cleaned containers. The one exception was that downstream sediment-grab sample BGY-139 was not sieved. The sediment grab samples were analyzed for a suite of elements and organic compounds including PCBs. Between December 2002 and February 2003, 31 sediment-core samples were collected. Sediment-core sampling locations were limited to areas of sediment deposition just upstream of the Baker and T&H Dams and within the Braided Channel. Like the grab samples, a

random-sampling design was used to collect the 31 sediment cores. A hand corer with a disposable 2.5-inch inside-diameter Lexan-core barrel was used to collect the sediment cores. The core barrel was pushed or hammered into the sediment until it could be driven no further. Core samples were homogenized, and placed in pre-cleaned containers; however, sediment core samples were not sieved. The sediment core samples were analyzed for a suite of elements and organic compounds including PCBs [2-3].

PCBs were detected in all but six grab samples (BGY-100, BGY-102, BGY-103, BGY-118, BGY-119, and BGY-133). Of the nine PCB Aroclors tested for, only three Aroclors were detected (Aroclors -1242, -1254, and -1260) [2-3].

Three PCB Aroclors were detected in the 17 sediment-grab samples (including duplicates) collected from the Lower Neponset River and include the following (maximum concentration and sample location in parentheses): Aroclor-1242 [7,100 µg/Kg in M2Y-003]; Aroclor-1254 (3,400 µg/Kg in BGY-105); and Aroclor-1260 (970 µg/Kg in BGY-112) (see Attachment A, Figures 5A and 5B) [2-3].

Three PCB Aroclors were detected in the 30 sediment-core samples (including duplicates) collected from the Lower Neponset River and include the following (maximum concentration and sample location in parentheses): Aroclor-1242 (208,000 µg/Kg in M2Y-002); Aroclor-1254 (17,000 µg/Kg in BGY-113/BGY-113D, M2Y-002, and BGY-128/BGY-128D); and Aroclor-1260 (5,800 µg/Kg in BGY-113D) (see Attachment A, Figures 5A and 5B) [2-3].

The 2004-2006 USGS study investigated concentrations, loads, and sources of PCBs by collection and analysis of bottom-sediment grab samples, water samples, fish tissue samples, and PISCES samples. Bottom-sediment samples were collected from the river and farther downstream in the estuary to supplement bottom-sediment data collected as part of the 2002-2003 USGS study. Specifically, riverine bottom-sediment samples were collected in and around areas near assumed sources of PCB contamination [4].

A total of 15 bottom-grab and PISCES samples (including 5 field duplicates) were collected from 10 locations within the study area. Analytical results indicated Aroclor-1221, Aroclor-1232, and Aroclor-1248 were not detected above the laboratory reporting limit; Aroclor-1016/1242 was detected ranging from 7.3 µg/Kg up to 19,500 µg/Kg; Aroclor-1254 was detected ranging from 76 µg/Kg up to 5,460 µg/Kg; Aroclor-1260 was detected ranging from 8.8 µg/Kg up to 791 µg/Kg; and total Aroclors were detected ranging from 175.8 µg/Kg up to 25,751 µg/Kg (see Attachment A, Figure 5C) [4].

Analytical results of the USGS bottom-sediment core samples indicated the PCB concentrations significantly increased in sediment core samples collected downstream of the Mother Brook confluence [4].

According to USGS, total PCB concentrations measured as part of both studies in the top layers (4 in.) of Neponset River bottom sediment varied by about a factor of about 1,000, with a minimum concentration of 28 µg/Kg in a sample from the Neponset River (behind Star Market) upstream of the Mother Brook confluence; and a maximum concentration of 24,900 µg/Kg in a sample from within Mother Brook at sample location BGY-141. Concentrations in sediment grabs in Mother Brook averaged about 60 times less (270 µg/Kg) upstream of BGY-141 than downstream of this location (15,400 µg/Kg). PCB concentrations in Neponset River sediments downstream of Mother Brook averaged about 11,400 µg/Kg and about 900 µg/Kg in estuarine mud samples. The USGS

noted that PCB concentrations generally declined with distance away from the river mouth into the estuary [4].

According to the 2014 USGS report, the reach of the Neponset River, known locally as the Braided Channel (aka Rice Islands), which formed as a result of catastrophic dam failure and subsequent morphological processes, is heavily contaminated with PCBs, but is likely stable. The PCBs in this part of the river appear to be trapped in semi-permanent stable islands, around which the river water flows. Although PCB-contaminated sediments in the Braided Channel have been exposed to a wide range of environmental conditions during the past 50 years, changing conditions in the future may cause sediment and contamination to move downstream.

In 2007 and 2008, MassDEP requested that AMEC Environment & Infrastructure, Inc. (AMEC) conduct sediment sampling at four canoe launches. These sediment samples were collected from the area where people would be wading into the water prior to getting into or exiting their canoe or kayak (the report was not available to START at the time of this report).

In 2013, AMEC, at the request of MassDEP, conducted additional sediment core sampling to further evaluate PCBs in Neponset River sediments. MassDEP requested that AMEC conduct core sediment sampling at four areas along the Neponset River. The four areas are approximately 3,000 feet (ft.) downstream and 1,000, 3,000 and 4,000 ft. upstream of the confluence of the Neponset River and Mother Brook. At each of the four sediment core locations, AMEC collected samples from three depth intervals [0-1 ft. (-0001), 1-2 ft. (-0102), and 2-3 ft.(-0203], resulting in a total of 12 sediment core samples (SD-US4K-01 through SD-US4K-03, SD-US3K-04 through SD-US3K-06, SD-US1K-07 through SD-US1K-09, and SD-DS3K-10 through SD-DS3K-12). One cluster of samples (SD-DS3K-10 through SD-DS3K-12) were collected within the Lower Neponset River site. PCB Aroclor results ranged from non-detectable concentrations up to 45,000 µg/Kg in the downstream sample SD-DS3K-10-0102. The analytical results indicated that PCB concentrations were highest downstream of the Mother Brook/Neponset River confluence [5].

According to MassDEP and USGS documents, the PCB-contaminated sediments are mostly trapped behind the two rebuilt dams (the Tileston and Hollingsworth Dam and the Walter Baker Dam), and within the former Jenkins Dam impoundment, where sediments form the Braided Channel section of the river. Maximum PCB concentrations within the lower Neponset River range up to 229,300 µg/Kg, while Mother Brook concentrations have ranged up to 73,400 µg/Kg (LE Mason sample SD-8A – Nov. 2000). Following the 2009 excavation of the lower portion of Mother Brook to the confluence of the Neponset River, the maximum PCB concentration detected in post-excavation samples in Mother Brook was below the remedial action goal set forth in the May 27, 2007 Confirmation of Agreement Letter from MassDEP. This goal was accomplished by excavation and off-site disposal of contaminated soil and sediment (approximately 2,500 tons) adjacent to and from within Mother Brook, and by construction of a subsurface vertical barrier wall to prevent the migration of contaminants from source areas to the brook. Closure sediment samples collected between 0 and 2 feet bsg during excavation activities indicated the concentration of PCBs remaining in the brook following excavation had an average concentration of 1,670 µg/Kg (maximum concentration of 2,700 µg/Kg), which was consistent with background.

In 2014, USGS concluded that the major sources of the PCB contamination are located along lower Mother Brook, but no specific sources were mentioned by name. MassDEP noted that the data suggest that widespread PCB contamination of the lower Neponset River originated from Mother Brook starting sometime around the early 1950s. In 1955, catastrophic dam failure caused by flooding likely released PCB-contaminated sediment downstream and into the Neponset River

Estuary. PCBs from this source area likely continued to be released after the flood and during subsequent rebuilding of downstream dams, which was not completed for over a decade [2-4]. According to MassDEP correspondences in 2015, PCBs are mostly trapped behind the two rebuilt dams (the T&H Dam and the Baker Dam), and within the former Jenkins Dam impoundment, where sediments form the Braided Channel section of the river [2-5; 8-9]. However, some PCBs either diffuse or are entrained back into the water column and are transported downstream by river water into the estuary or volatilize into the atmosphere [8-9].

In 2002, bottom sediment volumes were estimated by USGS at 620,000 cubic feet (22,960 cubic yards) in the T&H Dam Impoundment; 790,000 cubic feet (29,260 cubic yards) in the Braided Channel area; and 210,000 cubic feet (7,780 cubic yards) in the Baker Dam Impoundment [4; 9]. US ACOE noted that PCBs in the Braided Channel segment appear to be trapped in semi-permanent stable islands; however, changing conditions in the future may cause sediment to move downstream [4].

Based on available historical data generated from samples along the Neponset River and Mother Brook, several areas along the 3.7-mile Lower Neponset River riverbed between the confluence of Mother Brook and the Neponset River, downstream to the Baker Dam, indicate the riverbed channel sediments are contaminated with hazardous substances (PCBs).

The PCB-contaminated sediments appear to have likely accumulated from both suspected and unknown historical sources and releases to form a plume of PCB-contaminated sediment of unknown origins within the Lower Neponset River. Estimates of the PCB-contaminated sediments exceed 30,000 cubic yards behind the two remaining dams along the Lower Neponset River. In addition, PCB-contaminated sediment has been documented within other areas of the river, including the Braided Channel segment of the Lower Neponset River. No volume estimates are available for these additional PCB-contaminated sediment areas and require additional investigation.

EPA Site Inspection Waste/Source Sampling

Between 13 and 17 November 2017, as part of the Lower Neponset River PCBs Site SI, START personnel collected a total of 60 sediment/source samples, including three field duplicates, from the Lower Neponset River, Mother Brook, as well as a section of the upper Neponset River for PCB (Aroclor), Percent Solids, TOC, and Grain-Size analyses (see Attachment A, Figures 7 through 7F) [57].

Between 4 and 6 September 2018, as part of the Lower Neponset River PCBs site SI, START personnel collected a total of 103 sediment/source samples, including four field duplicates, from the Lower Neponset River, Mother Brook, as well as a section of the upper Neponset River for PCB field screening via the EPA Mobile Laboratory analysis. START also submitted 20 sediment/source samples, including upstream background locations and one field duplicate, to the EPA NERL for confirmatory PCB analysis. In addition, 12 sediment samples, including upstream reference/background samples and quality control samples, were submitted for PCB Congener, Percent Solids, and TOC analyses through the EPA Contract Laboratory Program (CLP) and Delivery of Analytical Services (DAS) laboratories (see Attachment A, Figures 8, and 9 through 9F) [57].

Based on analytical results of the sediment samples, several PCB Aroclors and total PCB Congener concentrations have been detected in the Lower Neponset River site at levels significantly above

their respective upstream background concentrations, documenting a contaminated sediment/source area containing PCBs downstream of the confluence of Mother Brook and the Neponset River (see Attachment F, Tables 1 through 3). Analytical results of sediment/source samples collected as part of the EPA SI from within the Lower Neponset River segment have detected PCB concentrations significantly above upstream background sample concentrations, with specific PCB Aroclor concentrations ranging up to 2100 µg/Kg and total PCB congener concentrations ranging up to 11,000,000 µg/Kg [57, 70-80]. The collection and comparison of sediment/source samples against background concentrations and analytical results of START sediment/source samples collected as part of this SI are discussed in greater detail in the SWP section of this report.

GROUNDWATER PATHWAY

The mean annual precipitation of Boston, MA, is 43.0 inches [30]. For the purposes of this report, START assumes that 43.0 inches of rain per year is representative of the mean annual precipitation rate at the Lower Neponset River PCBs site.

The Lower Neponset River PCBs site consists of portions of the Neponset River, within the riverbed channel, from the confluence of Mother Brook and the Neponset River downstream to the Walter Baker Dam. Based on the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey, the majority of the Lower Neponset River PCBs site is considered water and wetlands [31]. The areas surrounding the river are predominantly classified as urban land, 0 to 15 percent slopes [31].

According to the Bedrock Geology Map of Massachusetts, the bedrock underlying the Lower Neponset River PCBs site is Mattapan Volcanic Complex (Proterozoic Z or younger) consisting of rhyolite, melaphyre, agglomerate, and tuff; and Roxbury Conglomerate (Proterozoic Z to earliest Paleozoic) consisting of conglomerate, sandstone, siltstone, argillite, and melaphyre, consisting of the Brookline, Dorchester, and Squantum Members [32].

The Lower Neponset River PCBs site is not located within a wellhead protection area [34]. The groundwater beneath the Lower Neponset River PCBs site is classified as category GW-3 by MassDEP [33]. The GW-3 classification applies to groundwater at all disposal sites that is a potential source of discharge to surface water bodies [33].

Although the Lower Neponset River PCBs site stretches for 3.7 miles, START assumes that groundwater characteristics are similar throughout the entire site distance for this investigation. According to previous reports, depth to groundwater along the Lower Neponset River PCBs site, as measured in the area of Fairmount Court, Hyde Park, MA (Former Lewis Chemical) property, ranges from 3 to 14 feet below ground surface (bgs) [20, pp. 37-58; 21, p. 16]. According to previous reports, groundwater is estimated to flow toward the Neponset River with an approximate gradient of 0.03feet/foot [21, pp. 16 & 22]. Groundwater in the bedrock aquifer also flows toward the east with an approximate gradient of 0.1 feet/foot. [21, p. 16].

CDW Consultants, Inc. (CDW) noted in their 2014 investigation documentation that precipitation at the DCR Neponset River Reservation, adjacent to Fairmount Court (Former Lewis Chemical Site), Hyde Park, MA, infiltrates into the ground and/or flows into the adjacent Neponset River. This, along with seasonal variations in surface water elevations of the Neponset River, can affect groundwater flow patterns and therefore contaminant flow paths and behavior. While groundwater

is generally considered to flow from the Former Lewis Chemical property to the river, a reversal of flow from the river to the surrounding properties is possible during flood events [21, p.15].
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All or part of the following seven MA towns are located within 4 radial miles of the Lower Neponset River PCBs site: Boston, MA (population: 617,594); Brookline, MA (population: 58,732); Milton, MA (population: 27,003); Dedham, MA (population: 24,729); Canton, MA (population: 21,561); Quincy, MA (population: 92,271); and Westwood, MA (population: 14,618) [35-36].

The nearest public drinking water supply wells are five overburden wells which constitute the Dedham-Westwood Water District [Public Water System Identification Number (PWS ID No.) MA3073000], located southwest of the Lower Neponset River PCBs site between 2 and 3 radial miles from the site [37]. An additional nine supply wells that serve the system are located between 3 and 4 miles from the Lower Neponset River PCBs site. The Dedham-Westwood Water District System is a community water system, which supplies drinking water to 25 or more people in their residence year-round [38]. Public drinking water wells located within 4 radial miles of the property are served by both overburden and bedrock wells. The Dedham-Westwood Water District System serves approximately 39,347 people from 14 supply wells. For the purposes of this evaluation, START assumes each well contributes equally to the system and serves approximately 2,810 people [37].

Based on Geographic Information System (GIS) products from the EPA, residents within the towns of Dedham and Westwood are also served by private drinking water supply wells; however, the exact numbers and locations are unknown [40].

Approximately 617,594 people in the City of Boston are served by the MWRA [35; 37; 39]. The MWRA is comprised of surface water sources located in central MA greater than 4 miles from the Lower Neponset River PCBs site [39]. Based on GIS information, a very small number of people located between 1 and 4 radial miles of the Lower Neponset River PCBs site are served by private wells; however; the exact number could not be determined [37; 40].

Approximately 58,732 people in the Town of Brookline are served by the MWRA [35]. None of the population in Brookline is served by private wells [37; 40].

Approximately 27,003 people in the Town of Milton are served by the MWRA [35]. Based on GIS information, a small number of people located between 0.25 and 4 radial miles of the Lower Neponset River PCBs site within Milton are served by private wells; however; the exact number could not be determined [37; 40].

Approximately 92,271 people in the City of Quincy are served by the MWRA [35]. None of the population in Quincy is served by private wells [37; 40].

Approximately 21,561 people in the Town of Canton are served by both public groundwater supply sources. None of the population in Canton is served by private wells [37; 40].

The nearest private drinking water wells are reportedly located 0 to 0.25 mile south of the Lower Neponset River PCBs site [40].

Table 3 summarizes public groundwater supply sources within 4 radial miles of the Lower Neponset River PCBs site.

Table 3

Public Groundwater Supply Sources
Within 4 Radial Miles of Lower Neponset River PCBs Site

Distance from Site (miles)	Source Name	PWS ID No./Type	Location of Source[a]	Estimated Population Served	Source Type[b]
2-3	Dedham-Westwood Water District (5 Wells) Well A2, Well E, Well E1, Well E2, White Lodge Well #5	MA3073000/Comm.	Dedham, MA	14,052	Overburden
3-4	Dedham-Westwood Water District (9 Wells) Well B1, Well B2, Well D1, Well D2, Well F, White Lodge Well #3A, White Lodge Well #4A, White Lodge Well 1, White Lodge Well 2	MA3073000/Comm.	Dedham, MA	25,294	Overburden

[a] Indicates Town in which well is located.
[b] Overburden, Bedrock, or Unknown.

Comm. = Community water system.
PWS ID No. = Public Water System Identification Number.
= Number.

[37]

The following information was used for the Neponset River PCBs Site: Population by Radius (1990 U.S. Census) within 4 Radial Miles of the Lower Neponset River PCBs; Population by Radius on Private Wells (1990 U.S. Census) within 4 Radial Miles of the Lower Neponset River PCBs; and Population by Radius (2010 U.S. Census) within 4 Radial Miles of the Lower Neponset River PCBs. The EPA GIS Center calculated the population data by using shapefiles of the population block group data from the respective census and overlaying that onto a base map which contained the property boundary and associated radial rings around the boundary (*i.e.* property boundary to ¼ mile, ¼ mile to ½ mile, ½ to l mile, 1 mile to 2 miles, 2 miles to 3 miles, and 3 miles to 4 miles). For block groups that overlapped radial rings, the EPA GIS Center calculated the percentage of the block group which fell within each of the radial rings, which translated to the population within that block group which fell within each of the radial rings [40].

As part of the 1990 U.S. Census, the source of survey participants' drinking water was requested as part of the questionnaire. This information, which was grouped by the U.S. Census Bureau into block groups, was used to determine the number of people within radial rings of the property who relied on private drinking water wells as their source of drinking water. The 2010 U.S. Census questionnaire did not request the source of water; therefore, START utilized the information provided by the three EPA GIS Center maps to determine the approximate population currently served by private drinking water wells. START calculated the percentage change in total population for the entire 4-mile radius *(i.e.,* percentage change was not calculated for each individual radial ring). Once the percentage change in total population was calculated, START applied that percentage change to determine the estimated population utilizing private drinking water wells for their drinking water within each radial ring [40].

The nearest off-site private drinking water supply well is located between 0 and 0.25 miles south of the site [40]. The total population which relies on groundwater as a drinking water supply source within 4 radial miles of the Lower Neponset River PCBs site is estimated to be 40,223 [37; 40]. Table 4 summarizes estimated drinking water populations served by public and private groundwater sources within 4 radial miles of the Lower Neponset River PCBs site.

Table 4

Estimated Drinking Water Populations Served by Groundwater Sources Within 4 Radial Miles of the Lower Neponset River PCBs site

Radial Distance From Lower Neponset River PCBs (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Public Wells	Total Estimated Population Served by Groundwater Sources Within the Ring
0.00 < 0.25	12	0	12
0.25 < 0.50	18	0	18
0.50 < 1.00	46	0	46
1.00 < 2.00	183	0	183
2.00 < 3.00	258	14,052	14,310
3.00 < 4.00	260	25,294	25,654
TOTAL	877	39,346	40,223

Notes:
< = Less than

[37; 40]

To date, there is no known documentation of PCB concentrations exceeding state standards in groundwater drinking water sources within 4 radial miles of the Lower Neponset River PCBs Site. Elevated PCB concentrations as high as 95 micrograms per Liter (µg/L) [or ppb] were documented at the DCR property immediately adjacent to the Former Lewis Chemical site between 2002 and 2006. However, this PCB contamination is likely moving from one of the known potential sources (Lewis Chemical) toward the Neponset River and contributing to the plume of contaminated sediment [21, p.20].

No groundwater pathway samples were collected as part of this EPA SI. Based on the lack of available data, no release of hazardous substances to the groundwater from on-site sources/sediment plume has been documented. Due to the limited use of drinking water in the immediate area, no impacts to drinking water supply or nearby residential populations are known or suspected.

SURFACE WATER PATHWAY

The Lower Neponset River PCBs site is located in the Neponset River Watershed (Attachment A, Figure 3) [41]. The drainage area of the Neponset River Watershed basin is 130 square miles (mi^2) [42]. The Neponset River is a regulated floodway, with a 1% chance of flooding with base flood elevation [44-45].

The most upstream probable point of entry (PPE) to the Lower Neponset River PCBs 15-mile downstream SWP is located at the confluence of the Neponset River and Mother Brook (upstream of Dana Avenue, Hyde Park, MA) (PPE 1). The most downstream PPE is located along the Neponset River at the Baker Dam (upstream of Adams Street, Dorchester/Milton, MA) (PPE 2), 3.7 miles downstream of the most upstream PPE. Therefore, the SWP extends 18.7 miles downstream from PPE 1. The SWP extends past 15 miles due to the difference in distances from the terminus to the two PPEs located along the SWP (see Attachment A, Figure 3A).

The 15-mile downstream SWP from the Lower Neponset River PCBs site is located in the Neponset River Watershed, and includes the following surface water bodies: Neponset River (7.87 miles), Dorchester Bay, and Boston Harbor (10.83 mile arc from the mouth of the Neponset River). The 15-mile downstream SWP terminus is located in Boston Harbor (Attachment A, Figure 3A) [36; 43].

There is one USGS gauging station located along the SWP on the Neponset River (adjacent to the Baker Dam). To include additional flow rates for the Neponset River, START utilized the USGS MA StreamStats website [43].

The drainage area at PPE 1, located at the confluence of Mother Brook and the Neponset River, is 97.5 mi^2. The drainage area at the Neponset River at PPE 2 is 101 mi^2. Using the USGS conversion factor of 1.8 cubic feet per second (cfs)/mi^2, the flowrate for the Neponset River ranges from 175.5 cfs to 181.8 cfs [43].

The remaining portion of the Lower Neponset River PCBs site SWP is 15 miles, with the terminus being located within Boston Harbor. All water bodies after PPE 2 (Baker Dam), Neponset River, Dorchester Bay, and Boston Harbor, are tidally influenced and therefore their flow rates are listed as Not Applicable.

Table 5 summarizes surface water bodies along the 15-mile downstream SWP from the Lower Neponset River PCBs site.

Table 5

Surface Water Bodies Along the 15-Mile Downstream Surface Water Pathway from the Lower Neponset River PCBs site

Surface Water Body	Descriptor[a]	Length of Reach (miles)*	Flow Characteristics (cfs)[b]	Length of Wetland Frontage (miles)
Lower Neponset River	Moderate stream	3.7	175.5 to 181.8	4-5
Neponset River/ Dorchester Bay/Boston Harbor	Coastal tidal water	15	NA	1.01

[a] Minimal stream <10 cfs. Moderate to large stream (flow = >100 cfs to 1,000 cfs). Coastal tidal waters (flow not applicable).
[b] Cubic feet per second
* Distance measured from PPE.
[43; 110]

The Neponset River is a fishery. Fish types found in the river include American Eel, Brown Bullhead, and White Sucker. A fish advisory for the Neponset River has been issued by the MA

DPH for the consumption of American Eel and White Sucker due to PCBs and DDT [47]. Primary Contact Recreation in the Neponset River has been classified as impaired by MassDEP due to *Escherichia coli* (*E. Coli*), *Enterococcus*, and PCBs [48]. Primary Contact Recreation is defined by MassDEP as any recreation or other water use in which there is prolonged and intimate contact with the water with a significant risk of ingestion of water. These include, but are not limited to, wading, swimming, diving, surfing, and water skiing [48].

The segment of the Neponset River from the confluence of Mother Brook to 3.7 miles downstream of the confluence to the Baker Dam in Milton, is designated a Class B surface water body (Inland Water). The segment of the Neponset River from the Baker Dam to the mouth of Dorchester Bay, which is tidally influenced, is designated a Class SB surface water body (Coastal and Marine) [48-49]. Class B waters are designated as a habitat for fish, other aquatic life, and wildlife, including their reproduction, migration, growth and other critical functions, and for primary and secondary recreation. Class SB waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value [49]. Dorchester Bay and Boston Harbor have been designated a Class SB surface water bodies [63]. Ninety-three percent (93%) of the area assessed in Boston Harbor (Proper) supports aquatic life use [64].

Streamflow of the Neponset River Drainage Basin has also been affected by the construction of dams, which have fragmented the Neponset River and changed low flows, high flows, and other hydrologic characteristics. In 2007, 51 dams were located along the Neponset River and its tributaries, impounding the water and sediments behind the dams [4]. These dams have also changed sediment regimes by trapping sediment in the impoundments behind most of the dams. Two hurricanes impacted the Northeast and destroyed many of the dams along the Neponset River in 1955, releasing sediments trapped behind the dams [65].

Two dams are currently located along the SWP, downstream of the most upstream PPE, and include the Baker Dam and the T&H Dam. The Baker Dam, located upstream of Adams Street in Dorchester/Milton, is classified as a Significant Hazard Potential. The T&H Dam, located east of River Street Terrace in Hyde Park, is also classified as a Significant Hazard Potential [48]. Significant Hazard Potential dam refers to dams located where failure may cause loss of life and damage home(s), industrial or commercial facilities, secondary highway(s) or railroad(s) or cause interruption of use or service of relatively important facilities [53].

The Neponset River is the most upstream Clean Water Act (CWA)-protected water body along the 15-mile downstream SWP. In addition, based on review of the National Wetland Inventory maps, there are approximately 1.14 miles of wetland frontage located along the SWP. [46]. However, more detailed review and on-site wetland observations indicate that there are between 4 and 5 miles of emergent and scrub-shrub fresh-water wetland frontage along the Neponset River from the confluence of Mother Brook to 3.7 miles downstream to the Baker Dam in Milton [57]. Additional marsh/wetlands areas are located farther downstream within the 15-mile downstream SWP; these wetland areas are tidally influenced [100]. There are four listed priority species habitats along the 15-mile downstream SWP [49]. Information regarding the specific type of priority habitat (State Threatened, State Endangered, Federal Threatened, or Federal Endangered), or the names of the listed threatened or endangered species habitats, was not available during the

writing of this report. The 1,300-acre Neponset River Estuary Area of Critical Environmental Concern (sensitive environment) begins at the Baker Dam in Dorchester/Milton. This area of Critical Environmental Concern separates the coastal estuary from the inland fresh-water portion of the Neponset, and extends to the mouth of the river at Commercial Point in Boston and Squantum Point in Quincy [52]. There are no known drinking water intakes located along the 15-mile downstream SWP from the property [34].

Table 6 summarizes sensitive environments along the 15-mile downstream SWP from the Lower Neponset River PCBs site.

Table 6

Sensitive Environments Along the 15-Mile Downstream Surface Water Pathway from the Lower Neponset River PCBs site

Sensitive Environment Name	Sensitive Environment Type	Surface Water Body	Downstream Distance from PPE (miles)	Flow Rate at Environment (cfs)[a]
Neponset River - Wetlands	Wetlands	Neponset River	0 to 3.7	175.5 to 181.8
Neponset River - Clean Water Act	Clean Water Act Water body	Neponset River	0 to 3.7	175.5 to 181.8
Neponset River Estuary - Area of Critical Environmental Concern	Area of Critical Environmental Concern	Neponset River Estuary	3.7 to 7.7	NA
Neponset River Estuary - Wetlands	Wetlands	Neponset River Estuary	3.7 to 7.7	NA
Dorchester Bay - Wetlands	Wetlands	Dorchester Bay	>7.7	NA
Boston Harbor - Wetlands	Wetlands	Boston Harbor	>7.7	NA
Boston Harbor – Sensitive Environment	Priority Habitat 1324	Boston Harbor	>7.7	NA
Boston Harbor – Sensitive Environment	Priority Habitat 1365	Boston Harbor	>7.7	NA
Boston Harbor – Sensitive Environment	Priority Habitat 1344	Boston Harbor	>7.7	NA
Boston Harbor – Sensitive Environment	Priority Habitat 1385	Boston Harbor	>7.7	NA
Boston Harbor – Sensitive Environment	Priority Habitat 1491	Boston Harbor	>7.7	NA
Boston Harbor – Sensitive Environment	Priority Habitat 1519	Boston Harbor	>7.7	NA

[a] Cubic feet per second
NA = Not applicable.
PPE = Probable Point of Entry.
> = Greater than.

[43; 46; 51]

The Neponset River, which was America's most industrialized river during the early 1700s, drains parts of, and areas adjacent to, the city of Boston, MA. Industrial activity continued until

approximately 1965 when the last major industrial facility relocated from the lower section of the river. A byproduct of this early industrialization was dams, which were constructed mostly for purposes of power production. Today (2018), 11 dam impoundment areas are located along the 29-mile Neponset River main stem, but they no longer serve their original purposes. Two dams, the T&H Dam and the Baker Dam, remain on the lower Neponset River within the area considered the site. Remnants of the former Jenkins Dam are located on the lower Neponset River within the site area, downstream of the Braided Channel sediment accumulation area (aka Wild Rice Islands). Four additional dams remain along the western segment of Mother Brook, upstream of the former LE Mason facility (see Attachment A, Figure 2A). One of the long-term effects of these dams is the accumulation of contaminants in the slack water and in the impounded sediments behind the dams [2-4].

Historical Surface Water Pathway Sampling

USGS New England Water Science Center collected sediment, water, and fish tissue samples between 2002-2003 and 2004-2006 from Mother Brook and the Neponset River. The study was conducted in an effort to restore fish passage, habitat, and recreational use of the Neponset River. The initial investigation in 2002-2003 focused on the Neponset River. Samples of sediment and water were collected at 63 sampling locations along the lower Neponset River. These included 20 sediment-grab sample locations, 31 sediment-core sample locations, and 12 PISCES water column sample stations (see Attachment A, Figure 4). The USGS 2004–2006 investigation involved the collection of additional sediment and surface water samples, and focused on source identification within the Neponset River and Mother Brook. Bottom-sediment samples were collected from the river and farther downstream in the estuary to supplement bottom-sediment data collected as part of the 2002-2003 USGS study. Specifically, riverine bottom-sediment samples were collected in and around areas near assumed sources of PCB contamination. Bottom-sediment grab samples were collected at 23 locations in the Neponset River, Neponset River Estuary, and Mother Brook [2-4].

Analytical results from the 2002-2003 study indicated PCBs were detected in all but six of the 20 surface sediment-grab samples. Of the nine PCB Aroclors analyzed for in the sediment samples, only three Aroclors were detected above their individual reporting limits for the sample (Aroclor-1242, Aroclor-1254, and Aroclor-1260). The remaining six Aroclors (-1016, -1221, -1232, -1248, -1262, -1268) were not detected in any of the 51 grab-sediment and core-sediment samples [2-3].

PCB Aroclor analytical results for 2002-2003 sediment-grab samples (surface sediment samples) collected from the Neponset River indicated that three Aroclors were detected above reporting limits and consist of the following (maximum concentration and sample location in parentheses): Aroclor-1242 (7,100 µg/Kg in M2Y-003); Aroclor-1254 (3,400 µg/Kg in BGY-105); and Aroclor-1260 (970 µg/Kg in BGY-112) (see Attachment A, Figures 5A and 5B) [2-3].

PCB Aroclor analytical results for 2002-2003 sediment-core samples (deep sediment samples) collected from the Neponset River indicate that the same three Aroclors were detected above reporting limits and consist of the following (maximum concentration and sample location in parentheses): Aroclor-1242 (208,000 µg/Kg in M2Y-002); Aroclor-1254 (17,000 µg/Kg in BGY-113/BGY-113D, M2Y-002, and BGY-128/BGY-128D); and Aroclor-1260 (5,800 µg/Kg in BGY-113D) (See Figures 5A and 5B) [2-3].

PCB PISCES passive-water-column samplers were filled with hexane and deployed on buoys at 12 locations throughout the study area, including upstream, downstream, and within Mother Brook

(see Attachment A, Figure 5C). The solubility of PCBs is much greater in hexane compared to river water and, therefore, increases the likelihood of detecting PCBs that could otherwise be undetectable in whole-water samples. Consequently, the concentrations of water-quality constituents in PISCES samples are reported in nanograms per hexane sample (ng/hexane sample). After about 2 weeks, the PISCES samples were collected and their contents analyzed for 209 individual PCB congeners; Aroclor concentrations were estimated from the PCB congener data [2-3].

The total concentration of PCBs by congener and by Aroclor were calculated by USGS for the 23 PISCES samples collected from the 12 sample stations in 2002-2003. Analytical results of the PISCES samples indicated the sum of the concentrations of PCBs by congener had a maximum concentration of 6,177 ng/hexane sample in PISCES Sample Number 8 and the sum of the concentrations of PCBs by Aroclor had a maximum concentration of 3,100 ng/hexane sample in PISCES Sample Number 8. PISCES analytical data also indicate that Aroclor-1254 was detected in several water column samples with a maximum concentration of 397 ng/hexane sample in PISCES Sample Number 8, located at the Ryan Playground Station location [2-3].

A second USGS study, performed from 2004-2006, investigated concentrations, loads, and sources of PCBs by collection and analysis of bottom-sediment grab samples, water samples, fish tissue samples, and PISCES samples. Bottom-sediment samples were collected from the Neponset River and farther downstream in the estuary to supplement bottom-sediment data collected as part of the 2002-2003 USGS study. Specifically, riverine bottom-sediment samples were collected in and around areas near assumed sources of PCB contamination [4]. The investigation area extended from a Mother Brook impoundment, located approximately 0.5 miles upstream of the former L.E. Mason Facility, downstream to the confluence of Mother Brook and the Neponset River (see Attachment A, Figure 4). According to USGS, the results of the 2004-2006 investigation indicated widespread PCB-contamination in the sediments of the lower Neponset River [4].

Total PCB congeners were measured in the 2004-2006 bottom-sediment grab samples and ranged from 120 µg/Kg in BGY-140 up to 28,100 µg/Kg in BGY-141D (both locations along Mother Brook). A total of three PCB Aroclors were detected in the bottom-sediment grab samples collected from the study area and consisted of the following (maximum concentration and sample location in parentheses): Aroclor-1242 (19,500 µg/Kg in BGY-141D); Aroclor-1254 (5,460 µg/Kg in BGY-141D); and Aroclor-1260 (791 µg/Kg in BGY-141D) (see Attachment A, Figure 5C) [4].

Total PCB congeners were detected in the 2004-2006 PISCES water-column samples and ranged from 64.4 ng/sample at Incinerator Road station and up to 5,360 ng/sample at the Fairmount Ave. station. Three PCB Aroclors were detected in the PISCES water column samples collected from the study area and include the following (maximum concentration and sample location in parentheses): Aroclor-1016/1242 (2,740 ng/sample at the Fairmount Avenue station); Aroclor-1254 (306 ng/sample at the Facility #2 station); and Aroclor-1260 (110 ng/sample at the Fairmount Ave. station) (see Attachment A, Figure 5C) [4].

Analytical results of the USGS bottom-sediment samples indicated total PCB concentrations varied, with a minimum concentration of 28 µg/Kg in the Neponset River (behind Star Market) upstream of the Mother Brook confluence, and a maximum concentration of 24,900 µg/Kg measured at sample location BGY-141 (Facility #2 station) in Mother Brook. Concentrations in sediment grab samples in Mother Brook averaged about 60 times less (270 µg/Kg) upstream of Facility #2 than downstream of this location (15,400 µg/Kg). PCB concentrations in Neponset River sediments downstream of Mother Brook averaged about 11,400 µg/Kg and about 900 µg/Kg

in estuarine mud samples (downstream of the Baker Dam). According to USGS, PCB concentrations generally declined with distance away from the river mouth into the estuary [4].

Based on available historical sediment PCB analytical data collected for samples along the Neponset River and Mother Brook, several areas along the 3.7-mile Lower Neponset River riverbed, from the confluence of Mother Brook and the Neponset River downstream to the Baker Dam, indicate that a release of hazardous substances (PCBs) to the SWP has been documented. Furthermore, the data suggest that PCB-contaminated sediments have accumulated to form a plume of PCB-contaminated sediment of unknown origins. Impacts to the local surface water, on-site fishery, and sensitive environments are suspected based on the available PCB data.

EPA Site Inspection Surface Water Pathway Sampling

In November 2017, as part of the US EPA Lower Neponset River PCB SI, Weston START collected and analyzed 60 sediment samples from the Lower Neponset River from the Walter Baker Dam upstream 3.7 miles to the confluence of Mother Brook and the Neponset River; Mother Brook from its confluence with the Neponset River, upstream 3.6 miles to the Colburn Dam impoundment area (near Maverick Street, Dedham, MA; coordinates 42.249017, -71.159816); as well as a segment of the upper Neponset River, from the confluence of the Neponset River and Mother Brook, upstream approximately 2 miles, to an area within the Neponset River Reservation II (aka Fowl Meadow) [located near Meadow Road, Boston MA (Neponset section); coordinates 42.228704, -71.129871] (see Attachment A, Figure 7). The upper Neponset River and Mother Brook segments were examined to document the upstream background conditions within the Neponset River and Mother Brook, upstream of the confluence of the Neponset River and Mother Brook (See Attachment C, Table 1).

START performed sediment/source sampling from the Lower Neponset River, Mother Brook, as well as a section of the upper Neponset River, to collect appropriate analytical data to identify and document the presence of hazardous PCB Aroclor substances associated with source areas on the site (the 3.7-mile segment of the Lower Neponset River); to document the potential for source area releases to impact the SWP; and to collect appropriate background analytical data to support attribution of a potential release to the SWP from source areas on the site.

In November 2017, START collected 30 sediment samples from the five general areas of concern: the Baker Dam Impoundment area (7 samples collected from the Baker Dam upstream to the Central Avenue Bridge), the Braided Channel area (11 samples collected from the Central Avenue Bridge, upstream to the Harvest River Bridge); the Blue Hill Avenue area (two samples collected from the Harvest River Bridge upstream to the T&H Dam); the T&H Dam Impoundment area (seven samples collected from the T&H Dam, upstream to Fairmount Avenue); and the Fairmount/Mother Brook Confluence area (three samples collected from the Fairmount Avenue Bridge, upstream to the confluence of Mother Brook with the Neponset River) (see Attachment A, Figures 7 through 7F). An additional 30 sediment background/reference samples were collected in upstream locations along the upper Neponset River and Mother Brook, upstream of the confluence of the Neponset River and Mother Brook. Reference samples were also collected from along Pine Tree Brook, a small tributary flowing into the Lower Neponset River near the Central Avenue Bridge, to determine background conditions for comparison to the Lower Neponset River sediment samples. Information regarding the November 2017 sediment samples, including locations and matrix descriptions, are available in Table C-1.

The November 2017 core samples were collected by START and EPA personnel using either hand augers, viber-core samplers, or percussion core samplers. START November 2017 samples were

collected from various depth intervals within the same core sample location/station. Sediment sample cores were described, recording the sample's geographical collection location and position, the time and method of collection, a general description of the sediment sample matrix material, and depth of the discrete sample interval sent for laboratory analysis (Attachment C, Table C-1). Sediment samples were sent through an EPA CLP laboratory for Aroclor (PCB) and Percent Solids analyses, and through a DAS laboratory for TOC, and grain size analyses. The November 2017 START samples were not analyzed for PCB congener analysis. Attachment D, Tables 1 through 4 presents a summary of the sediment sample PCB analytical results organized by laboratory sample delivery group (SDG) (See Attachment D, Tables 1 through 4) [57; 70-73].

As indicated in Attachment A, Figures 7A through 7F, and Attachment D, Tables 1 through 4, three PCB Aroclor compounds were noted at detectable concentrations within numerous sediments samples collected from the Lower Neponset River PCB area of concern. PCB Aroclors were also detected in the Upper Neponset River and from Mother Brook segments sampled to determine reference concentrations [57; 70-73].

Sample results qualified with a "J" on analytical tables are considered approximate because of limitations identified during analytical data validation. For further explanation of the "J" qualification, see the associated individual SDG data validation memorandum. Sample results qualified with an "EB" on analytical tables indicate equipment blank contamination. Sample results qualified with a "U" on analytical tables indicate the substances were analyzed for, but not detected, and the associated numerical value is the sample adjusted Contract Required Quantitation Limit (CRQL). Sample results qualified with a "UJ" on analytical tables indicate the substances were analyzed for, but not detected, and the associated numerical value is the estimated sample-adjusted CRQL. Sample results qualified with an "ND" on analytical tables indicate the substances were analyzed for, but not detected, and the associated numerical value is the Laboratory RL. Further qualifications can be found in Attachment D, Tables 1 through 7 [70-76].

Complete analytical results of equipment, rinsate, trip, and preservative blank samples, collected by START in accordance with the Site-Specific Quality Assurance Project Plan (QAPP), are presented in Attachment C of this report (Tables 2 and 3) [70-80].

Attachment F, Table 1, presents a summary of PCB Aroclors detected through laboratory analyses of the November 2017 sediment/source samples collected from the Lower Neponset River segment. Samples SD-36, SD-29, and SD-45 were selected as the background samples for the sediment/source samples. These three samples represent the highest levels of Aroclors detected in the samples collected from upstream of the confluence of Mother Brook and the Neponset River. SD-45 is located on the upper portion of the Neponset River and was used for the comparison of PCB Aroclor-1254 concentrations. PCB Aroclor-1254 was detected in sediment sample SD-45 at a concentration of 460 J µg/Kg. None of the upstream reference samples detected Aroclor 1248; however, samples SD-36 and SD-29, located on Mother Brook, represent the highest background sample-adjusted CRQL or the sample quantitation limit (SQL), and were therefore used for the comparison of PCB Aroclor-1248 concentrations. PCB Aroclor-1248 and Aroclor-1260 were noted in sediment samples SD-36 and SD-29 at a concentration of 140 UJ µg/Kg. None of the other six (6) PCB Aroclor compounds analyzed for were detected in any of the November 2017 samples submitted for CLP analysis [57; 70-73].

For each sample location, a compound is listed in Attachment F, Table 1 if it is detected at a concentration greater than or equal to three times the highest background sample's concentration. However, if a substance was not detected in the background samples, the highest background

sample SQL is used as the comparison value. These substances are listed if they occurred at a value equal to or greater than the background sample's SQL and are designated by their approximate relative concentration above these values. Based on an examination of the background samples submitted, the highest concentration for each compound is used in comparison in order to provide the most conservative background concentration [70-73; 78-79]. Those PCB compounds that meet the criteria outlined above are considered attributable to source areas within the Lower Neponset River PCBs Site.

Three PCB Aroclors were detected above laboratory reporting limits in the November 2017 sediment/source samples submitted for analysis ranging from non-detect to 2,100 µg/Kg within the Lower Neponset River segment. The following three PCB Aroclors were detected (maximum concentration and sample location in parentheses): Aroclor-1248 (2,100 *J[2] µg/Kg in SD-06); Aroclor-1254 (2,100 µg/Kg in SD-44); and Aroclor-1260 (78 J+[2] µg/Kg in SD-19). Aroclor-1248 was detected in 16 of the 30 samples collected from the Lower Neponset River segment, with 11 of those detections located with the Braided Channel segment of the river. Aroclor-1254 was detected in three of the 30 samples collected from the Lower Neponset River segment, with one detection in each of the following segments: Walter Baker Dam, Braided Channel, and Fairmount/Mother Brook segments. Aroclor-1260 was detected in two of the 30 samples collected from the Lower Neponset River segment, with one detection in each of the following segments: T&H Dam Impoundment area and Fairmount/Mother Brook segments (Attachment D, Tables 1 through 4). In addition, 14 samples exceed reference criteria for Aroclor-1248, and one sample (SD-44) exceeds reference criteria for Aroclor-1254 in the Lower Neponset River samples. No samples exceed reference criteria for Aroclor-1260 in the Lower Neponset River samples (Attachment F, Table 1) [70-73]. These elevated levels of PCB Aroclors document the presence of PCBs in the Lower Neponset River PCB site segment of the river.

TOC analysis was conducted on the sediment/source samples collected in November 2017 for PCB Aroclor analysis. Attachment D, Tables 5-7 summarize the TOC results for the November 2017 samples. Results of the TOC analysis indicated concentrations range from 3,700 J mg/kg (SD-43) up to 470,000 mg/kg (SD-36) [57; 74-76].

In July 2018, based on discussions between EPA and START personnel, EPA authorized START to conduct sediment sampling to collect PCB congener data for the Lower Neponset River PCB site previously sampled for PCB Aroclors in November 2017.

In September 2018, as part of the US EPA Lower Neponset River PCB SI, Weston START collected a total of 103 sediment/source samples, including four field duplicates, for PCB field screening analysis via the EPA Office of Environmental Measure and Evaluation (OEME) Mobile Laboratory. Additionally, EPA and START personnel selected and submitted 21 of the 103 sediment/source samples, including one field duplicate, to the EPA OEME laboratory for PCB (Aroclor) analysis. In addition, EPA and START personnel selected and submitted 12 of the 103 sediment/source samples though a CLP laboratory for PCB congener, Percent Solids, and TOC analyses [57].

The September 2018 sediment core samples were collected by START personnel using either hand augers, or percussion core samplers. START September 2018 samples were collected from various depth intervals within the same core sample location/station. Sediment sample cores were described, recording the sample's geographical collection location and position, the time and method of collection, a general description of the sediment sample matrix material, and depth of the discrete sample interval sent for laboratory analysis (Attachment C, Table C-4). Complete

analytical results of equipment, rinsate, trip, and preservative blank samples, collected by START in accordance with the Site-Specific QAPP, are presented in Attachment C of this report (Tables 2 and 3) [57; 74-80].

START collected 83 of the 103 sediment samples from the Lower Neponset River segment, within five general areas of concern: the Baker Dam Impoundment area (13 samples from the Baker Dam, upstream to the Central Avenue); the Braided Channel area (36 samples from Central Avenue, upstream to the Harvest River Bridge); the Blue Hill Avenue area (11 samples from the Harvest River Bridge upstream to the T&H Dam); the T&H Dam Impoundment area (16 samples from the T&H Dam, upstream to Fairmount Avenue); and the Fairmount/Mother Brook Confluence area (7 samples from Fairmount Avenue, upstream to the confluence of Mother Brook with the Neponset River) (see Attachment A, Figures 9 through 9F and 10 through 10F). An additional 20 sediment reference samples were collected in upstream locations along the upper Neponset River and Mother Brook, upstream of the confluence of the Neponset River and Mother Brook, to determine background conditions for comparison to the Lower Neponset River sediment samples. Reference samples were also collected from along Pine Tree Brook, a small tributary flowing into the Lower Neponset River near the Central Avenue Bridge, to determine background conditions for comparison to the Lower Neponset River sediment samples. Information regarding the September 2018 sediment samples, including locations and matrix descriptions, are available in Attachment C, Table 4 [57].

PCB field screening analysis of the 103 sediment samples collected as part of the EPA SI in September 2018 are summarized in Attachment E, Table 1. PCB (Aroclor) field screening data analysis indicates that three Aroclor compounds were detected: Aroclor-1248, Aroclor-1254, and Aroclor-1260. Results indicate that Aroclor-1248 ranged from non-detect to a maximum concentration of 58,000 µg/Kg at location LCA-C2 E; Aroclor-1254 ranged from non-detect to a maximum concentration of 21,000 µg/Kg at location LCA-C3 C; and Aroclor-1260 ranged from non-detect to a maximum concentration of 16,000 µg/Kg at location LCA-C3 C (Attachment E, Table 1). Aroclor-1248 was detected in 65 of the 103 samples collected from the Lower Neponset River segment. Aroclor-1254 was detected in 72 of the 103 samples collected from the Lower Neponset River segment. Aroclor-1260 was detected in 16 of the 103 samples collected from the Lower Neponset River segment (Attachment E, Table 1) [77].

The September 2018 field screening data results, along with other factors, including sample location spatial distribution, environmental targets, and sample similarities, were used to aid in the selection of samples for further analysis consisting of 21 sediment/source samples submitted to the EPA OEME laboratory for PCB (Aroclor) analysis and 12 sediment/source samples submitted though CLP and DAS laboratories for PCB congener, Percent Solids, and TOC analyses [57].

As indicated in Attachment A, Figures 9A through 9F, and Attachment E, Table 4, three PCB Aroclor compounds were noted at detectable concentrations within numerous sediments samples collected from the Lower Neponset River PCB area of concern during the September 2018 sampling activities. PCB Aroclors were also detected in the Upper Neponset River and from Mother Brook segments sampled to determine reference concentrations [57; 79].

As stated previously, sample results qualified with a "J" on analytical tables are considered approximate because of limitations identified during analytical data validation. For further explanation of the "J" qualification, see the associated individual SDG data validation memorandum. Sample results qualified with an "EB" on analytical tables indicate equipment blank contamination. Sample results qualified with a "U" on analytical tables indicate the substances were analyzed for, but not detected, and the associated numerical value is the sample adjusted

CRQL. Sample results qualified with a "UJ" on analytical tables indicate the substances were analyzed for, but not detected, and the associated numerical value is the estimated sample-adjusted CRQL. Sample results qualified with an "ND" on analytical tables indicate the substances were analyzed for, but not detected, and the associated numerical value is the Laboratory RL. Further qualifications can be found in Attachment D, Tables 1 through 7 and Attachment E, Tables 1 through 5 [74-80].

For each sample location, a compound is listed in Attachment F, Table 2 if it is detected at a concentration greater than or equal to three times the highest background sample's concentration. However, if a substance was not detected in the background samples, the highest background sample SQL is used as the comparison value. These substances are listed if they occurred at a value equal to or greater than the background sample's SQL and are designated by their approximate relative concentration above these values. Based on an examination of the background samples submitted, the highest concentration for each compound is used in comparison in order to provide the most conservative background concentration [57; 79]. Those PCB compounds that meet the criteria outlined above are considered attributable to source areas within the Lower Neponset River PCBs Site.

Attachment F, Table 2, presents a summary of PCB Aroclors detected through OEME laboratory analyses of the September 2018 sediment/source samples. Seventeen sediment/source samples were collected from within the Lower Neponset River segment of the study area. Four samples (UMB-C1 A, UMB-C2 B, UNR-C2 D, and UNR-C3 C) were selected and submitted for analysis to represent background/reference conditions from upstream of the confluence of Mother Brook and the Neponset River. Sediment samples UMB-C1 A and UMB-C2 B are located on Mother Brook, and UNR-C2 D and UNR-C3 C are located along the Neponset River. Sample UNR-C2 D represents the highest levels of Aroclor-1221, Aroclor-1232, Aroclor-1248, and Aroclor-1254. PCB Aroclor-1254 was detected in sediment sample UNR-C2 D at a concentration of 710 µg/Kg. None of the upstream reference samples detected Aroclor-1221, Aroclor-1232, or Aroclor-1248; however, samples UNR-C2 D, located on the Upper Neponset River segment, represents the highest background sample-adjusted CRQL/SQL and was therefore used for the comparison of PCB Aroclor-1221, Aroclor-1232, and Aroclor-1248 concentrations. PCB Aroclor-1221, Aroclor-1232, and Aroclor-1248 were noted in sediment samples UNR-C2 D at concentrations of 130 µg/Kg. None of the other five (5) PCB Aroclor compounds (Aroclor-1016, Aroclor-1242, Aroclor-1260, Aroclor-1262, and Aroclor-1268) analyzed for were detected in any of the September 2018 samples submitted for OEME analysis. Detectable levels of Aroclor-1242 and Aroclor-1260 were noted in one or more of the upstream reference samples [57; 79].

PCB Aroclor analysis indicate that four PCB Aroclors were detected above laboratory reporting limits in the September 2018 sediment/source samples submitted for PCB Aroclor analysis, ranging from non-detect to 2,000,000 µg/Kg within the Lower Neponset River segment. The following four PCB Aroclors were detected (maximum concentration and sample location in parentheses): Aroclor-1221 (2,000,000 µg/Kg in LCA-C3 C); Aroclor-1232 (42,000 µg/Kg in MBC-C1 D); Aroclor-1248 (21,000 µg/Kg in BCA-C4 B); and Aroclor-1254 (8,300 µg/Kg in WBD-C5 C) (Attachment E, Table 4). In addition, in the Lower Neponset River samples, nine samples exceeded reference criteria for Aroclor-1221, three samples exceeded reference criteria for Aroclor-1232, five samples exceeded reference criteria for Aroclor-1248, and one sample (WBD-C5 C) exceeded reference criteria for Aroclor-1254. No samples exceeded reference criteria for Aroclor-1016, Aroclor-1242, Aroclor-1260, Aroclor-1262, and Aroclor-1268 in the Lower Neponset River samples (Attachment F, Table 2) (Attachment A, Figures 9A through 9F) [79].

EPA and START personnel also selected and submitted 12 of the 103 sediment/source samples collected in September 2018 to CLP and DAS laboratories for PCB congener, Percent Solids, and TOC analyses [57]. The 12 samples selected consisted of eight sediment samples from the Lower Neponset River segment and four sediment samples from upstream locations along Mother Brook, the Upper Neponset River, and Pine Tree Brook for background/reference concentration comparison (Attachment A, Figures 10A through 10F) [57].

The PCB Congener samples were analyzed through a CLP laboratory in accordance with USEPA SOW HRSM01.2, dated October 2014 for 209 PCB Congeners [78]. Attachment E, Table 2 provides the analytical results of the full 209 PCB Congener, as well as the Total PCBs and Toxic Equivalent concentration for each sediment sample. Total PCBs are the sum of the total homologues [78]. Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds", Society of Toxicology, July 7, 2006. The TE values are calculated using the final validated data and include the positive results and estimated values [78].

Attachment E, Table 3 presents a summary of Total PCB Congeners detected through laboratory analyses of the September 2018 sediment/source samples, as well as the individual concentrations for each of the 21 World Health Organization (WHO) toxic PCBs homologues.

Four samples, PTB-C1 A, UNR-C2 D, UNR-C3 A, and UMB-C2 C, were selected and submitted for Congener analysis to represent background/reference conditions from upstream of the confluence of Mother Brook and the Neponset River; as well as from Pine Tree Brook, a tributary to the Lower Neponset River (Attachment A, Figures 10A through 10F). Sediment sample PTB-C1A is located on Pine Tree Brook, upstream of the Walter Baker Dam impoundment; sample UMB-C2 C is located on Mother Brook; and UNR-C2 D and UNR-C3 A are located along the Neponset River, upstream of the confluence of Mother Brook. Sample UNR-C2 D represents the highest levels of Total PCBs in the background/reference samples at a concentration 3,900 µg/Kg. The concentrations of Total PCBs in the other three background/reference samples were significantly lower, ranging from 4 µg/Kg to 930 µg/Kg [57; 78].

Attachment F, Table 3 provides a summary of the Total PCBs detected at concentrations significantly above background levels in the eight sediment/source samples collected form the Lower Neponset River segments. For each sample location, a compound is listed if it is detected at a concentration greater than or equal to three times the highest background sample's concentration. Based on an examination of the background samples submitted, the highest concentration for Total PCBs is used in comparison to provide the most conservative background concentration [70-73; 78-79]. Therefore, any location that exceeds the background/reference sample (UNR-C2 D) level of 3,900 µg/Kg meets the criteria outlined above, are considered attributable to source areas on the Lower Neponset River PCBs Site.

As indicated in Attachment F, Table 3, the concentration of Total PCBs in all eight sediment/source samples collected from the Lower Neponset River and submitted for PCB congener analysis were detected at significant levels above background/reference concentrations, ranging from 8 to 2,821 times the reference concentration of 3,900 µg/Kg. PCB Congener analysis indicated Total PCBs ranging from 4.6 µg/Kg in PTB-C1 A up to 11,000,000 in THD-C1 F (Attachment E, Tables 2 and 3). Sample THD-C1 D, collected from the Tileston & Hollingsworth Dam impoundment, had the highest concentration of Total PCBs at 11,000,000 µg/Kg. Elevated

levels of Total PCBs were documented from the Lower Neponset River segment as far upstream as the Fairmount/Mother Brook Area (sample LCA-C3 D) and downstream to the Water Baker Dam Area (sample WBD-C5 C) (Attachment A, Figures 9A through 9F) [57; 78].

TOC analysis was conducted on the 12 sediment/source samples collected in September 2018 for PCB Congener analysis. Attachment E, Table 5 summarizes the TOC results for the September 2018 samples. Results of the September 2018 TOC analysis indicate that concentrations range from 2,100 J mg/kg (PTB-C1 A) up to 100,000 J mg/kg (UNR-C2 D) [57; 80].

In summary, the EPA SI November 2017 and September 2018 sampling events and laboratory analyses document that several PCB Aroclors, PCB Congeners/Homologues, and Total PCBs are detected at significant levels above representative background/reference concentration throughout the Lower Neponset River (Attachment A, Figure 11) [57; 70-80].

Based on the comparison of sediment background/reference sample levels to the elevated concentrations of PCB compounds detected in the 2017 and 2018 SI sediment/source samples, START has documented a release of the hazardous substance PCBs to sediments and the SWP that are at least partially attributable to the Lower Neponset River PCBs site. Although the origin of the source of the PCBs detected in the sediment samples collected is not documented, a sediment plume containing significantly elevated concentrations of PCBs is documented throughout the 3.7-mile riverbed segment of the Lower Neponset River from immediately below the confluence of Mother Brook with the Neponset River, downstream to the Walter Baker Dam. In addition, the data documents that the wetlands and fishery within and along the banks of the Lower Neponset River have, or are likely to have been impacted by PCB contamination.

SOIL EXPOSURE PATHWAY

The Lower Neponset River PCBs site is considered an approximately 3.7-mile riverbed segment which contains several areas where PCB-contaminated sediments that have likely accumulated from both suspected and unknown sources and releases to form a plume of PCB-contaminated sediment of unknown origins. The site extends along the Neponset River from the confluence of Mother Brook and the Neponset River located upstream of Dana Avenue, Hyde Park, Massachusetts (MA), downstream to the Baker Dam located upstream of Adams Street, Dorchester/Milton, MA (see Attachment A, Figure 1) [3]

There are sections of the northern and southern banks of the Neponset River that are lined by residential properties [57]. An estimated 73,336 and 423,686 people reside within 1 radial mile and 4 radial miles of the Lower Neponset River PCBs site, respectively [40]. There are no state and/or federally designated endangered species habitats known to be located on the Lower Neponset River PCBs site [50].

There are one school and two day-care facilities located within 200 feet of the Neponset River PCBs Site [54; 55; 67; 68; 69]. The MATCH Community Day Charter Public School is located at 100 Poydras Street, Hyde Park, approximately 100 feet north of the Neponset River channel and the site. The MATCH Community Day Charter Public School has an enrollment of approximately 650 students per year [69]. In addition, there are two day-care facilities located within 200 feet of the Neponset River, the South Side Head Start (695 Truman Hwy 204, Hyde Park) and the Laronde De Marie-Claire Early Learning Center (130 River St, Mattapan) [54; 55; 67; 68]. The South Side Head Start services a maximum of 60 children per year [67]. The Laronde De Marie-Claire Early Learning Center services a maximum of 47 children per year [68].

Access to the Neponset River PCBs site is generally unrestricted, except where private properties abutting the river restrict pedestrian access [57]. Public recreational use land encompasses and borders the majority of the 3.7-mile site. There are five public canoe launches and approximately 1.5 miles of developed recreational multi-use walking/biking trails (Neponset Riverwalk) bordering the Lower Neponset River PCBs site. There are seven recreation areas located along the edge of the site/river: West Street Park, Neponset River Reservation, Doyle Playground, Kennedy Playground, City Natives Community Gardens, Neponset River Reservation I, and Ryan Playground [57].

The site is defined as portions of the Neponset River channel containing PCB-contaminated sediment forming a plume of contaminated sediments of unknown origins. In the past, sediment dredging has occurred with disposal of the possibly contaminated sediments spoils in upland areas; however, these areas are not being evaluated as part of the Lower Neponset River PCBs Site investigation. Therefore, the soil exposure pathway was not evaluated.

AIR PATHWAY

The Lower Neponset River PCBs site is considered an approximately 3.7-mile riverbed segment which contains several areas where PCB-contaminated sediments have likely come to accumulate from both suspected and unknown sources and releases to form a plume of PCB-contaminated sediment of unknown origins. The site consists of the river channel segment of the Neponset River, from the confluence of the Neponset River and Mother Brook, downstream to the Baker Dam. Based on the definition of the site, there are no on-site workers and no residents on the site [57]. Numerous residences are located adjacent to the north and south riverbanks, along the edges/border of the site. The nearest residences (571 Truman Parkway and 5 Warren Street, Milton) are located less than 35 feet from the banks of the river channel [57].

As noted in the Soil Exposure Pathway section above, there are one school and two day-care facilities located within 200 feet of the Neponset River PCBs Site [54; 55; 67; 68; 69]. These consist of the MATCH Community Day Charter Public School, South Side Head Start, and the Laronde De Marie-Claire Early Learning Center serving approximately 650 students, 60 children, and 47 children per year. [54; 55; 67; 68; 69].

Also as noted in the Soil Exposure Pathway section above, access to the Neponset River site is generally unrestricted. The river and surrounding areas are used for recreational purposes and include five public canoe launches, approximately 1.5 miles of developed recreational multi-use walking/biking trails (Neponset Riverwalk), and seven recreation areas located along the edge if the site/river [57].

An estimated 423,686 people reside within 4 radial miles of the Lower Neponset River PCBs site [40].

Table 7 summarizes the estimated population within 4 radial miles of the Lower Neponset River PCBs site.

Table 7

Estimated Population Within 4 Radial Miles of the Lower Neponset River PCBs site

Radial Distance From the Lower Neponset River PCBs site (miles)	Estimated Population
On Property	0
> 0.00 to < 0.25	17,343
> 0.25 to < 0.50	19,194
> 0.50 to < 1.00	36,799
> 1.00 to < 2.00	103,439
> 2.00 to < 3.00	128,148
> 3.00 to < 4.00	118,763
TOTAL	423,686

< = Less than. > = Greater than.

[40]

Approximately 6,842.5 acres of wetlands, CWA-protected water bodies, nine listed priority species habitats, and the Neponset River Estuary Area of Critical Environmental Concern are located within 4 radial miles of the Lower Neponset River PCBs site [46; 51; 52]. Information regarding the specific type of priority habitat (State Threatened, State Endangered, Federal Threatened, or Federal Endangered), or the names of the listed threatened or endangered species habitats, was not available during the writing of this report [50; 51].

Table 8 summarizes sensitive environments located within 4 radial miles of the Lower Neponset River PCBs site.

No quantitative laboratory-analyzed air samples are known to have been collected from the Lower Neponset River PCBs site. START did not conduct Air Pathway sampling as part of this SI. During the August 2017 on-site reconnaissance, and November 2017 and September 2018 sampling events conducted at the Lower Neponset River PCBs site, START personnel conducted periodic ambient air monitoring using a MultiRAE Plus (LEL, O_2, H_2S, CO, and PID) meter and a Micro R radiation meter. No readings above background levels were detected in the ambient air [57].

Based on the lack of quantitative data, no release of hazardous substances to the ambient air from on-site sources has been documented. No air pathway impacts to nearby residential populations or sensitive environments are known or suspected.

Table 8

Sensitive Environments Located Within 4 Radial Miles of the Lower Neponset River PCBs site

Radial Distance From Lower Neponset River PCBs site (miles)	Sensitive Environments/Species (status)
On Property	7.7 acres of wetlands
	Clean Water Act-protected water body
>0 to < 0.25	9.7 acres of wetlands
	Clean Water Act-protected water body
	Area of Critical Environmental Concern
> 0.25 to < 0.50	41.5 acres of wetlands
	Clean Water Act-protected water body
	Area of Critical Environmental Concern
> 0.50 to < 1.00	220.8 acres of wetlands
	Clean Water Act-protected water body
	Area of Critical Environmental Concern
> 1.00 to < 2.00	1,091.1 acres of wetlands
	Clean Water Act-protected water body
	Two listed priority species habitats
	Area of Critical Environmental Concern
> 2.00 to < 3.00	2,082.1 acres of wetlands
	Clean Water Act-protected water body
	Two listed priority species habitats
	Area of Critical Environmental Concern
> 3.00 to < 4.00	3,389.6 acres of wetlands
	Clean Water Act-protected water body
	Five listed priority species habitats
	Area of Critical Environmental Concern

[46; 50; 52]

SUMMARY

The Lower Neponset River PCBs site for this study is considered to be an approximately 3.7-mile riverbed segment which contains several areas where polychlorinated biphenyl (PCB)-contaminated sediments have accumulated from both suspected and unknown sources and/or releases to form a plume of PCB-contaminated sediment. The site is comprised of the riverbed channel along the lower segment of the Neponset River, from the confluence of the Neponset River and Mother Brook (upstream of Dana Avenue, Hyde Park; Confluence coordinates 42.251785, -71.123205) downstream to the Baker Dam (upstream of Adams Street, Dorchester/Milton; Dam coordinates 42.270765, -71.068818).

PCBs are a group of organic compounds consisting of a biphenyl ring structure with 1 to 10 attached hydrogen or chlorine atoms. Individually, these different compounds are called congeners. These congeners are designated by an International Union of Pure and Applied Chemistry (IUPAC) number from 1 to 209 (also known as a PCB number), with 1 indicating the lowest number of attached chlorine atoms (and the highest number of hydrogen atoms) and 209 the highest number of attached chlorine atoms (and the lowest number of hydrogen atoms). Specific mixtures of congeners, called Aroclors, were commercially manufactured and sold in the past. The composition of each Aroclor depended on the intended commercial use, but consisted of 60 to 90 congeners. These mixtures were identified by four digits (for example, 1232, 1242, and 1254), which indicate the number of carbon atoms (the first two digits) and the percentage of chlorine substituted for hydrogen by weight (the second two numbers). For example, Aroclor 1254 contains 12 carbon atoms and 54 percent substituted chlorine. Over 700,000 tons (1.4 billion pounds) of PCBs were sold in North America between the 1930s and the late 1970s.

The Neponset River, like most urban rivers in the Northeast, has a long industrial history. Industrialization and subsequent urbanization began in the Neponset River Basin as early as the 1630s. By the mid-1700s, the Neponset River drained one of the most heavily industrialized drainage basins in the Nation, draining parts of, and areas adjacent to, the city of Boston. From the 1930s through the 1970s, several industries using PCBs were located in the Neponset River Basin.

Sediments contaminated with elevated levels of PCBs have been documented within the lower segment of the Neponset River and Lower Neponset River PCBs site area. The original location of the release or releases of PCBs which have resulted in the contaminated sediment plume is unknown. However, there are several sites within the river basin which have been identified by previous investigations as having formerly used, stored, or had releases of PCBs and are likely to have contributed to the sediment contamination plume; numerous other sites which may have used, stored, or had releases of PCBs within the river basin and may have contributed PCB-contamination to the sediment contamination plume; and still other potential sites, sources, and/or releases, which have not yet been identified, but based on the long, complex, urban and industrial history of the area along the Neponset River and within the river basin, are likely to exist and potentially have contributed to the PCB-contaminated sediment. Therefore, the PCB-contaminated sediments have accumulated from both suspected and unknown sources and/or releases of PCBs, forming a plume of PCB-contaminated sediment of unknown origins, which constitutes the Lower Neponset River PCBs site.

The Lower Neponset River channel ranges from approximately 40 feet to 300 feet wide, and comprises an estimated 40 acres within or bordering the City of Boston (Hyde Park, Mattapan, and Dorchester sections) and the Town of Milton, MA. The site is bordered by residential, commercial,

industrial, and public parcels of land, including the Neponset River Greenway [aka the Neponset River trail and walkway].

For the purpose of this study, the site consists of five general areas of concern: the Baker Dam Impoundment area (from the Baker Dam, upstream to Central Avenue); the Braided Channel area (from Central Avenue, upstream to the Harvest River Bridge); the Blue Hill Avenue area (upstream of the Braided Channel area, to the T&H Dam); the T&H Dam Impoundment area (from the T&H Dam, upstream to Fairmount Avenue); and the Fairmount/Mother Brook confluence area (from Fairmount Avenue, upstream to the confluence of Mother Brook with the Neponset River).

The Lower Neponset River PCBs site is located in the Neponset River Watershed. Water and sediment flow into the site via a stream channel from Mother Brook and the upper segment of the Neponset River, upstream of the confluence of Mother Brook with the Neponset River. Water flowing through the site (along the Neponset River channel) discharges at the Baker Dam, the downstream-most portion of the site, and continues to flow downstream along the Neponset River through the Neponset River Marsh/Estuary, to Dorchester Bay, and Boston Harbor. Water also enters the site via Pine Tree Brook, a small tributary which discharges to the site (riverbed) near the Baker Dam Impoundment; overland flow; and various discharge pipes along the river banks.

According to the U.S. Geological Survey (USGS) and Weston Solutions, Inc. (Weston) Superfund Technical Assessment and Response Team (START) site observations, water depths along the Lower Neponset River PCBs Site range from less than 1 foot in portions of the Braided Channel area to a maximum depth of 15 feet within the T&H Dam Impoundment area.

Numerous sediment depositional areas have been observed along the riverbed channel, including several where PCB-contaminated sediments have been documented. These areas include, but are not limited to: the Baker Dam Impoundment, the Braided Channel, and the Tileston & Hollingsworth (T&H) Dam Impoundment areas. According to USGS, the measurements of maximum sediment thickness in 2002 were 5.8, 7.6, and 9.7 ft. in the Braided Channel, Baker Dam Impoundment, and T&H Dam Impoundment areas, respectively. Observations by START also noted that some areas within the riverbed channel are erosional zones, with limited sediment accumulation occurring, and other areas of the riverbed are heavily armored.

There are no specific details regarding the operational and regulatory history for the Lower Neponset River PCBs site. However, previous investigations of the Neponset River, including portions of the Lower Neponset River, have included sediment and water investigations conducted by the U.S. Army Corps of Engineers (US ACOE), USGS, Massachusetts Department of Environmental Protection (MassDEP), and others indicate that the bottom sediments contained elevated concentrations of PCBs, raising concerns about sediment, water, and biota quality of the Neponset River.

Estimates of the PCB-contaminated sediments exceed 30,000 cubic yards behind the two remaining dams along the Lower Neponset River. An additional 29,260 cubic yards of PCB-contaminated sediments reside in the Braided Channel area. In addition, PCB-contaminated sediment has been documented within other areas of the river, including near the confluence of Mother Brook, within the Lower Neponset River. No volume estimates are available for these additional PCB-contaminated sediment areas.

The groundwater beneath the Lower Neponset River PCBs site is classified as category GW-3 by MassDEP. The GW-3 classification applies to groundwater at all disposal sites that is a potential

source of discharge to surface water bodies. The nearest public drinking water supply wells are five overburden wells which constitute the Dedham-Westwood Water District [Public Water System Identification Number (PWS ID No.) MA3073000], located southwest of the property between 2 to 3 radial miles from the property. The nearest off-site private drinking water supply well is located between 0 and 0.25 miles south of the site. The total population which relies on groundwater as a drinking water supply source within 4 radial miles of the Lower Neponset River PCBs site is estimated to be 40,223.

To date, no documentation of PCB concentrations exceeding state standards in groundwater drinking water sources within 4 radial miles of the Lower Neponset River PCBs Site are known. Elevated PCB concentrations as high as 95 µg/L were documented at the DCR property immediately adjacent to the Former Lewis chemical site between 2002 and 2006. However, this PCB-contamination is likely moving from one of the known potential sources (Lewis Chemical) toward the Neponset River and contributing to the plume of contaminated sediment.

No groundwater pathway samples were collected as part of this EPA SI. Based on the lack of available data, no release of hazardous substances to the groundwater from on-site sources/sediment plume has been documented. Due to the limited use of drinking water in the immediate area, no impacts to drinking water supply or nearby residential populations are known or suspected.

The Lower Neponset River PCBs site is located in the Neponset River Watershed. The most upstream probable point of entry (PPE) to the Lower Neponset River PCBs 15-mile downstream SWP is located at the confluence of the Neponset River and Mother Brook (upstream of Dana Avenue, Hyde Park, MA) (PPE 1). The most downstream PPE is located along the Neponset River at the Baker Dam (upstream of Adams Street, Dorchester/Milton, MA) (PPE 2), 3.7-miles downstream of the most upstream PPE. The SWP extends 18.7 miles from PPE 1. The SWP extends past 15 miles due to the difference in distances from the terminus to the two PPEs located along the SWP.

The Lower Neponset River PCBs site SWP includes the following surface water bodies: Neponset River (7.87 miles), Dorchester Bay, and Boston Harbor (10.83 mile arc from the mouth of the Neponset River). The 15-mile downstream SWP terminus is located in Boston Harbor.

Numerous wetland areas are located within and along site. The majority of the wetland acreage is within the Braided Channel Section, but there is wetland frontage along the majority of the edge of the riverbed channel. Based on the EPA wetland specialist's observations and review of wetland delineations, there are an estimated 4 to 5 miles of wetland frontage along the Neponset River, within the Lower Neponset River PCBs site.

The Neponset River is a fishery. Fish types found in the river include American Eel, Brown Bullhead, and White Sucker. A fish advisory for the Neponset River has been issued by the Massachusetts Department of Public Health (MA DPH) for the consumption of American Eel and White Sucker due to PCBs and DDT. Primary Contact Recreation in the Neponset River has been classified as impaired by MassDEP due to *Escherichia coli (E. Coli),* Enterococcus, and PCBs. Primary Contact Recreation is defined by MassDEP as any recreation or other water use in which there is prolonged and intimate contact with the water with a significant risk of ingestion of water. These include, but are not limited to, wading, swimming, diving, surfing and water skiing.

In November 2017, as part of the US EPA Lower Neponset River PCB SI, Weston START collected and analyzed 60 sediment samples from the Lower Neponset River. START collected 30 sediment samples from various depth intervals from the five general areas of concern within the Lower Neponset River: the Baker Dam Impoundment area (7 samples collected from the Baker Dam, upstream to the Central Avenue Bridge); the Braided Channel area (11 samples collected from the Central Avenue Bridge, upstream to the Harvest River Bridge); the Blue Hill Avenue area (two samples collected from the Harvest River Bridge, upstream to the T&H Dam); the T&H Dam Impoundment area (seven samples collected from the T&H Dam, upstream to Fairmount Avenue); and the Fairmount/Mother Brook Confluence area (three samples collected from the Fairmount Avenue Bridge, upstream to the confluence of Mother Brook with the Neponset River). An additional 30 sediment background/reference samples were collected in upstream locations along the upper Neponset River and Mother Brook, upstream of the confluence of the Neponset River and Mother Brook. Reference samples were also collected from along Pine Tree Brook, a small tributary flowing into the Lower Neponset River near the Central Avenue Bridge, to determine background conditions for comparison to the Lower Neponset River sediment samples.

Analytical result indicate that three PCB Aroclors were detected above laboratory reporting limits in the November 2017 sediment/source samples ranging from non-detect to 2,100 µg/Kg within the Lower Neponset River segment. The following three PCB Aroclors were detected (maximum concentration and sample location in parentheses): Aroclor-1248 (2,100 *J2 µg/Kg in SD-06); Aroclor-1254 (2,100 µg/Kg in SD-44); and Aroclor-1260 (78 J+2 µg/Kg in SD-19). Aroclor-1248 was detected in 16 of the 30 samples collected from the Lower Neponset River segment, with 11 of those detections located with the Braided Channel segment of the river. Aroclor-1254 was detected in three of the 30 samples collected from the Lower Neponset River segment, with one detection in each of the following segments: Walter Baker Dam, Braided Channel, and Fairmount/Mother Brook segments. Aroclor-1260 was detected in two of the 30 samples collected from the Lower Neponset River segment, with one detection in each of the following segments: T&H Dam Impoundment area and Fairmount/Mother Brook. In addition, 14 samples exceed reference criteria for Aroclor-1248, and one sample exceeds reference criteria for Aroclor-1254 in the Lower Neponset River samples. No samples exceed reference criteria for Aroclor-1260 in the Lower Neponset River samples.

In September 2018, as part of the US EPA Lower Neponset River PCB SI, Weston START collected a total of 103 sediment/source samples for PCB field screening analysis via the EPA Office of Environmental Measure and Evaluation (OEME) Mobile Laboratory. Additionally, 21 of the 103 sediment/source samples were selected and submitted to the EPA OEME laboratory for PCB (Aroclor) analysis. In addition, 12 of the 103 sediment/source samples were selected and submitted for PCB congener analyses though a CLP laboratory.

START collected 83 of the 103 sediment samples from the Lower Neponset River segment, within five general areas of concern: the Baker Dam Impoundment area (13 samples from the Baker Dam, upstream to the Central Avenue); the Braided Channel area (36 samples from Central Avenue, upstream to the Harvest River Bridge); the Blue Hill Avenue area (11 samples from the Harvest River Bridge, upstream to the T&H Dam); the T&H Dam Impoundment area (16 samples from the T&H Dam, upstream to Fairmount Avenue); and the Fairmount/Mother Brook Confluence area (7 samples from Fairmount Avenue, upstream to the confluence of Mother Brook with the Neponset River). An additional 20 sediment reference samples were collected in upstream locations along the upper Neponset River and Mother Brook, upstream of the confluence of the Neponset River and Mother Brook, to determine background conditions for comparison to the Lower Neponset River sediment samples. Reference samples were also collected from along Pine

Tree Brook, a small tributary flowing into the Lower Neponset River near the Central Avenue Bridge, also to determine background conditions for comparison to the Lower Neponset River sediment samples.

PCB (Aroclor) field screening analysis indicates that three Aroclor compounds were detected: Aroclor-1248, Aroclor-1254, and Aroclor-1260. Results indicate that Aroclor-1248, Aroclor-1254, and Aroclor 1260 ranged from non-detect to maximum concentrations of 58,000 µg/Kg, 21,000 µg/Kg, and 16,000 µg/Kg, respectively. Aroclor-1248, Aroclor-1254, and Aroclor-1260 were detected in 65, 72, and 16 of the 103 samples collected from the Lower Neponset River segment, respectively.

EPA OEME laboratory PCB Aroclor analysis results indicate that four PCB Aroclors were detected above laboratory reporting limits in the 17 sediment/source samples submitted for PCB Aroclor analysis, ranging from non-detect to 2,000,000 µg/Kg within the Lower Neponset River segment. The following four PCB Aroclors were detected (maximum concentration and sample location in parentheses): Aroclor-1221 (2,000,000 µg/Kg in LCA-C3 C); Aroclor-1232 (42,000 µg/Kg in MBC-C1 D); Aroclor-1248 (21,000 µg/Kg in BCA-C4 B); and Aroclor-1254 (8,300 µg/Kg in WBD-C5 C). In addition, in the 17 Lower Neponset River samples, nine samples exceeded reference criteria for Aroclor-1221, three samples exceeded reference criteria for Aroclor-1232, five samples exceeded reference criteria for Aroclor-1248, and one sample exceeded reference criteria for Aroclor-1254.

EPA and START personnel also selected and submitted 12 of the 103 sediment/source samples collected in September 2018 to a CLP laboratory for PCB congener analyses. The 12 samples selected consisted of eight sediment samples from the Lower Neponset River segment and four sediment samples from upstream locations along Mother Brook, the Upper Neponset River, and Pine Tree Brook for background/reference concentration comparison.

The concentration of Total PCBs in all eight sediment/source samples collected from the Lower Neponset River and submitted for PCB congener analysis were detected at significant levels above background/reference concentrations, ranging from 8 to 2,821 times the reference concentration of 3,900 µg/Kg. PCB Congener analysis indicated Total PCBs ranging from 4.6 µg/Kg in PTB-C1 A up to 11,000,000 in THD-C1 F. Sample THD-C1 D, collected from the Tileston & Hollingsworth Dam impoundment, had the highest concentration of Total PCBs at 11,000,000 µg/Kg. Elevated levels of Total PCBs were documented from the Lower Neponset River segment as far upstream as the Fairmount/Mother Brook Area (sample LCA-C3 D) and downstream to the Water Baker Dam Area (sample WBD-C5 C).

Based on the comparison of sediment reference sample levels to the elevated concentrations of PCB Compounds (both PCB Aroclors and Total PCBs) detected in the 2017 and 2018 SI sediment/source samples, a release of the hazardous substance PCBs to sediments and the SWP has been documented, which are at least partially attributable to the Lower Neponset River PCBs site. Although the origin of the source of the PCBs detected in the sediment sample collected is not documented, a sediment plume containing significantly elevated concentrations of PCBs is documented throughout the 3.7-mile riverbed segment of the Lower Neponset River from the confluence of Mother Brook with the Neponset River, downstream to the Walter Baker Dam. In addition, the data documents that the wetlands and fishery within and along the banks of the Lower Neponset River have or are likely to have been impacted by PCB contamination.

The site is defined as a portion of the Neponset River channel containing PCB-contaminated sediment forming a plume of contaminated sediments of unknown origins. In the past sediment dredging has occurred with disposal of the possibly contaminated sediments spoils in upland areas; however, these areas are not being evaluated as part of the Lower Neponset River PCBs Site investigation. Therefore, no soil exposure was evaluated, and no soil exposure is known or suspected.

Additionally, there are portions along the northern and southern banks of the Lower Neponset River that are lined by residential properties, adjacent to the banks of the river. An estimated 73,336 and 423,686 people reside within 1 radial mile and 4 radial miles of the Lower Neponset River PCBs site, respectively. There are no state and/or federally designated endangered species habitats known to be located on the Lower Neponset River PCBs site.

There is one school and two day-care facilities located within 200 feet of the Neponset River PCBs Site. The MATCH Community Day Charter Public School has an enrollment of approximately 650 students per year. In addition, there are two day-care facilities located within 200 feet of the Neponset River, the South Side Head Start serving 60 children per year and the Laronde De Marie-Claire Early Learning Center serving 47 children per year.

Approximately 6,842.5 acres of wetlands, CWA-protected water bodies, nine listed priority species habitats, and the Neponset River Estuary Area of Critical Environmental Concern are located within 4 radial miles of the Lower Neponset River PCBs site.

No quantitative laboratory-analyzed air samples are known to have been collected from the Lower Neponset River PCBs site. Based on the lack of quantitative data, no release of hazardous substances to the ambient air from site sources has been documented. No air pathway impacts to nearby residential populations or sensitive environments are known or suspected.

REFERENCES

[1] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2017. Project Note, Lower Neponset River PCBs Site. Latitude and Longitude Calculations for the site. TDD: TO1-01-16-06-0009. 6 September.

[2] Breault, R.F., Cooke, M.G., and Merrill, Michael. 2004. Data on sediment quality and concentrations of polychlorinated biphenyls from the lower Neponset River, Massachusetts, 2002–03: U.S. Geological Survey Open-File Report 2004-1280, 55 p.

[3] Breault, R.F., Cooke, M.G., and Merrill, Michael. 2004. Sediment quality and polychlorinated biphenyls in the lower Neponset River, Massachusetts, and implications for urban river restoration. U.S. Geological Survey Scientific Investigations Report 2004-5109, 48 p.

[4] Breault, R.F., 2014, Concentrations, loads, and sources of polychlorinated biphenyls, Neponset River and Neponset River Estuary, eastern Massachusetts (ver. 1.1, June 2014): U.S. Geological Survey Scientific Investigations Report 2011–5004, 143 p., at http://pubs.usgs.gov/sir/2011/5004.

[5] AMEC Environment & Infrastructure, Inc. 2014. 2013 Sediment Sampling Results Transmittal Letter, Neponset River Dredge Spoils Site, Hyde Park, Boston, Massachusetts. 5 February.

[6] Massachusetts Department of Environmental Protection (MassDEP). 2007. Letter to Mr. Om Chopra, Thomas & Betts Corporation, RE: Boston/Hyde Park, Former L. E. Mason Facility 96-100 Business Street, RTN 3-0730, Mother Brook Excavation, Confirmation of Agreement Sediment Excavation Endpoints. 27 May.

[7] Shaw Environmental, Inc. 2011. Phase IV Completion Statement, Former L. E. Mason Facility 98 Business Street, Boston, Massachusetts, MassDEP Release Tracking Number 3-0730, Tier 1B Permit Number 104178. 4 May.

[8] Massachusetts Department of Environmental Protection (MassDEP). 2015. Memorandum to U.S. Environmental Protection Agency, Subject: Lower Neponset River – History and Sources of PCBs. 29 May.

[9] Massachusetts Department of Environmental Protection (MassDEP). 2015. Memorandum to U.S. Environmental Protection Agency, Subject: Neponset River PCB Contamination. 27 October.

[10] Haley & Aldrich, Inc. 2013. Report on Class B-2 Response Action Outcome (RAO) Statement, Uplands Disposal Site, 1377 Hyde Park Avenue, Boston, Massachusetts, RTN 3-27067. September.

[11] McPhail Associate Inc. 2009. Modified Release Abatement Measure Plan, 1415 Hyde Park Avenue, RTNs 3-28835 and 3-27791. 23 October.

[12] McPhail Associate Inc. 2010. 1415 Hyde Park Avenue; Boston (Hyde Park), Massachusetts, Release Abatement Measure Status Report No. 1, Release Tracking Numbers (RTNs) 3-28835 and 3-27791. 4 March.

REFERENCES (Continued)

[13] McPhail Associates, LLC. 2015. Permanent Solution Statement, Blake Estates 1344 Hyde Park Avenue, RTN 3-32581, Boston, Massachusetts. 21 December.

[14] Roberts Consulting, Inc. 2003. Phase I Environmental Site Assessment and Limited Subsurface Investigation, 56R Business Street Hyde Park, MA 02136. December.

[15] Brown and Caldwell. 2010. Immediate Response Action Completion Report. Mother Brook, 1415 Hyde Park Avenue Boston, Massachusetts, RTN 3-27168. August.

[16] Brown and Caldwell. 2010. Response Action Outcome Partial Statement, RAO-P Class A-3 for the Northern Bank of Mother Brook (1377 Hyde Park Avenue and Amtrak Parcel) 1415 Hyde Park Avenue, Boston, Massachusetts RTN 3-27168. November.

[17] Ebasco Services Incorporated. 1989. Final Remedial Investigation Report, Norwood PCB Site. June.

[18] GZA GeoEnvironmental, Inc. 2016. 2015 Annual Monitoring Report, Norwood PCB Superfund Site Norwood, Massachusetts. June.

[19] GEI Consultants, Inc. 2007. Immediate Response Action Completion Report, Former Canton Airport, Neponset Street Canton, MA DEP RTN 4-3020140, formerly 3-20140, Tier 1B Permit No. W019130. 12 April.

[20] Woodard & Curran. 2010. Release Abatement Measure Plan, Former Lewis Chemical Co. Site Soil Vapor Extraction. July.

[21] CDW Consultants, Inc. 2014. Phase I Initial Site Investigation, DCR Neponset River Reservation, Adjacent to 12-24 Fairmount Court, Hyde Park, MA. DEP Release Tracking Number 3-31548. 3 November.

[22] Woodard & Curran. 2013. Release Abatement Measure Completion Report, 0&12-24 Fairmount Court Hyde Park, MA 02136, RTN: 3-1616. June.

[23] CDW Consultants, Inc. 2014. Downgradient Property Status Summary Report. DCR Neponset River Restoration Adjacent to 12-24 Fairmount Ct Hyde Park, MA DEP Release Tracking #3-31548. 2 January.

[24] JTS Group, Inc. 2006. Phase I Initial Site Investigation and Tier Classification, American Acquisitions, LLC (Former Bay State Paper) Boston (Hyde Park), Massachusetts. 24 July.

[25] Haley & Aldrich, Inc. 2008. Report on Release Abatement Measure (RAM) Plan 892 River Street Development Former Bay State Paper Facility Hyde Park, Massachusetts RTN 3-25435. August.

[26] Haley & Aldrich, Inc. 2015. Post-RAO Construction RAM Completion Report, The Shops at Riverwood – Building G 892 River Street Hyde Park, Massachusetts RTN 3-25435. January.

[27] Massachusetts Department of Health and Human Services. 2017. Public Health Fish Consumption Advisory, Neponset River (between the Hollingsworth and Vose Dam in Walpole and the Walter Baker Dam in Boston). 12 July.

REFERENCES (Continued)

[28] U.S. Environmental Protection Agency (EPA). 2017. Superfund Enterprise Management System (SEMS) Database Search Results for Boston, MA. Available from https://www.epa.gov/enviro/sems-search. Internet accessed 6 September.

[29] U.S. Environmental Protection Agency (EPA). 2017. RCRAInfo Database Search Results for Boston, MA. Available from https://www3.epa.gov/enviro/facts/rcrainfo/search.html. Internet accessed 6 September.

[30] World Climate. 2017. Average Rainfall, Boston, Suffolk County, Massachusetts, USA. Available from http://www.worldclimate.com/cgi-bin/data.pl?ref=N42W071+2200+190770C. Internet Accessed 13 September.

[31] U.S. Department of Agriculture, Natural Resources Conservation Service. 2017. Soil Map, Lower Neponset River PCBs Site. 13 September.

[32] U.S. Geological Survey (USGS). 1993. Bedrock Geologic Map of Massachusetts.

[33] Commonwealth of Massachusetts. 2013. Massachusetts Contingency Plan, 310 CMR 40.0000, Subpart I: Risk Characterization. On-line version.

[34] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2017. Figure, Lower Neponset River PCBs Site. Wellhead Protection and Surface Water Protection Areas. TDD: TO1-01-16-06-0009. 6 September.

[35] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2017. Project Note, Lower Neponset River PCBs Site. Population of Towns Within 4 Radial Miles of the Lower Neponset River PCBs site. TDD: TO1-01-16-06-0009. 6 September.

[36] U.S. Geological Survey (USGS). 1989. Boston, Massachusetts-Rhode Island-Connecticut 30x60-minute Quadrangle Topographical Map.

[37] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2017. Project Note, Lower Neponset River PCBs Site. Public Groundwater Supply Sources within 4-Radial Miles of the Lower Neponset River PCBs Site. TDD: TO1-01-16-06-0009. 12 September.

[38] U.S. Environmental Protection Agency (EPA). 2017. Information about Public Water Systems, last updated on March 8, 2017. Available from https://www.epa.gov/dwreginfo/informationaboutpublicwatersystems. Internet accessed 12 September.

[39] Boston Water and Sewer Commission. 2017. Water Sources. Available from http://www.bwsc.org/ABOUT_BWSC/systems/water/sources.asp. Internet accessed 19 September.

[40] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2017. Project Note, Lower Neponset River PCBs Site. Total Population and Private Well Population Calculations Within 4 Radial Miles of Lower Neponset River PCBs Site. TDD: TO1-01-16-06-0009. 12 September.

[41] U.S. Environmental Protection Agency (EPA). 2017. Surf Your Watershed Information for the Charles Watershed. Available from https://cfpub.epa.gov/surf/locate/index.cfm. Internet accessed 12 September.

[42] Massachusetts Executive Office of Energy and Environmental Affairs. 2017. Charles River Watershed. Available from http://www.mass.gov/eea/waste-mgnt-recycling/water-resources/preserving-water-resources/mass-watersheds/. Internet accessed 19 September.

[43] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2017. Project Note, Lower Neponset River PCBs Site. Surface Water Flow Rate Calculations for Lower Neponset River PCBs Site. TDD: TO1-01-16-069-0009. 12 September.

[44] Federal Emergency Management Agency (FEMA), National Floodplain Insurance Program (NFIP). 2009. Flood Insurance Rate Map (FIRM) Suffolk County, Massachusetts, Panel 88 of 151, 25 September.

[45] Federal Emergency Management Agency (FEMA), National Floodplain Insurance Program (NFIP). 2014. Flood Insurance Rate Map (FIRM) Norfolk County, Massachusetts, Panel 64 of 430, 9 June.

[46] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2016. Project Note, Lower Neponset River PCBs Site. Wetland Acreage Located Within 4-Radial Miles and Wetland Frontage Located Along the 15-Mile Surface Water Pathway Target Distance Limit (TDL) of the Lower Neponset River PCBs Site. TDD: TO1-01-16-06-0009. 6 September.

[47] Massachusetts Department of Public Health, Bureau of Environmental Health. 2017. Freshwater Fish Consumption Advisory List. August.

[48] Massachusetts Department of Environmental Protection. 2010. Neponset River Watershed 2004 Water Quality Assessment Report. February.

[49] Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs. 2013. 314 CMR 4.00: Massachusetts Surface Water Quality Standards. 6 December.

[50] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2017. Project Note, Lower Neponset River PCBs Site. Threatened and Endangered Species Habitat Along the 15-Mile Surface Water Pathway Target Distance Limit (TDL) of the Lower Neponset River PCBs Site. TDD: TO1-01-16-06-0009. 19 September.

[51] Mace, B. Weston Solutions, Inc., Superfund Technical Assistance and Response Team IV (START). 2017. Project Note, Lower Neponset River PCBs Site. Threatened and Endangered Species Habitat Within 4-Radial Miles of the Lower Neponset River PCBs Site. TDD: TO1-01-16-06-0009. 19 September.

[52] Massachusetts Executive Office of Energy and Environmental Affairs. 2017. Neponset River Estuary. Available from http://www.mass.gov/eea/agencies/dcr/conservation/ecology-acec/neponset-river-estuary.html. Internet accessed 19 September.

REFERENCES (Concluded)

[53] Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs, Department of Conservation and Recreation. 2017. Dam Safety. Available from .http://www.mass.gov/eea/agencies/dcr/conservation/dam-safety/. Internet, accessed 19 September.

[54] Google Maps. 2017. Daycare Search Near The Neponset River. Available from www.google.com. Internet accessed 26 October.

[55] Google Maps. 2017. School Search Near The Neponset River. Available from www.google.com. Internet accessed 26 October.

[56] USGS (U.S. Geological Survey), in cooperation with the Massachusetts Department of Fish and Game, Division of Ecological Restoration, Riverways Program. 2011. *Concentrations, Loads and Sources of Polychlorinated Biphenyls, Neponset River and Neponset River Estuary, Eastern Massachusetts*. Scientific Investigations Report 2011-5004.

[57] Weston Solutions, Inc. 2017. Field Logbook Notes, Lower Neponset River PCBs. TDD No. TO1-01-16-06-0009. Logbook No. 107-S.

[58] EDR. 2017. EDR DataMap™ Corridor Study. Lower Neponset River PCB. 26 October.

[59] Dorcester Atheneum. 2017. Dorcester, MA, Town History 1630-1870. Available from http://www.dorchesteratheneum.org/page.php?id=52 Internet accessed 12 September.

[60] Dorcester Atheneum. 2017. Dorcester, MA, Industry & Commerce. Available from http://www.dorchesteratheneum.org/page.php?id=8 Internet accessed 12 September.

[61] New England Historical Society. 2018. Mother Brook Canal: Still Useful After All These Years. Available from http://www.newenglandhistoricalsociety.com/mother-brook-canal-still-useful-years/ Internet accessed 21 March.

[62] Norman B. Leventhal Map Center. 2018. Hyde Park, Massachusetts: 1890. Available from https://collections.leventhalmap.org/search/commonwealth:x633fc32v Internet accessed 21 March.

[63] Norman B. Leventhal Map Center. 2018. Mattapan, Massachusetts, 1890. Available from https://collections.leventhalmap.org/search/commonwealth:x633fc29j Internet accessed 21 March.

[64] Norman B. Leventhal Map Center. 2018. View of Hyde Park, Mass., 1879. Available from https://collections.leventhalmap.org/search/commonwealth:x633fc024 Internet accessed 21 March.

[65] Norman B. Leventhal Map Center. 2018. Milton, Lower Mills, Massachusetts: 1890. Available from https://collections.leventhalmap.org/search/commonwealth:x633ff663 Internet accessed 21 March.

[66] Norman B. Leventhal Map Center. 2018. A map of the towns of Dorchester and Milton, 1831. Available from https://collections.leventhalmap.org/search/commonwealth:x633ff76b Internet accessed 22 March.

[67] Care.com. 2018. South Side Head Start. Available from https://www.care.com/b/l/south-side-head-start/hyde-park-ma Internet accessed 29 March.

[68] Cribsters.com. 2018. La Ronde De Marie Claire Early Learning Center. Available from http://www.cribsters.com/child-care-providers/ma/mattapan/la-ronde-de-marie-claire-early Internet accessed 29 March.

[69] Match Charter Public School. 2018. About Us — Match Charter Public School. Available from http://www.matchschool.org/about/about-us/ Internet accessed 29 March.

[70] Mahany, B. (START). 2017. Letter to M. Bosworth (EPA Region 1 – New England), RE: Case No. 47280. SDG No. A41G7. Chemtech Consulting Group (CHM), Lower Neponset River PCBs, Boston, Massachusetts. 22 December.

[71] Mahany, B. (START). 2018. Letter to M. Bosworth (EPA Region 1 – New England), RE: Case No. 47280. SDG No. A41H3. Chemtech Consulting Group (CHM), Lower Neponset River PCBs, Boston, Massachusetts. 17 January.

[72] Mahany, B. (START). 2018. Letter to M. Bosworth (EPA Region 1 – New England), RE: Case No. 47280. SDG No. A41K4. Chemtech Consulting Group (CHM), Lower Neponset River PCBs, Boston, Massachusetts. 17 January.

[73] Mahany, B. (START). 2018. Letter to M. Bosworth (EPA Region 1 – New England), RE: Case No. 47280. SDG No. A41M8. Chemtech Consulting Group (CHM), Lower Neponset River PCBs, Boston, Massachusetts. 18 January.

[74] Mahany, B. (START). 2018. Letter to M. Bosworth (EPA Region 1 – New England), RE: DAS Case No. 0906F. SDG No. D35204. Earth Toxics, Inc., Lower Neponset River PCBs, Boston, Massachusetts. 17 January.

[75] Mahany, B. (START). 2018. Letter to M. Bosworth (EPA Region 1 – New England), RE: DAS Case No. 0906F. SDG No. D35210. Earth Toxics, Inc., Lower Neponset River PCBs, Boston, Massachusetts. 5 January.

[76] Mahany, B. (START). 2018. Letter to M. Bosworth (EPA Region 1 – New England), RE: DAS Case No. 0906F. SDG No. D35231. Earth Toxics, Inc., Lower Neponset River PCBs, Boston, Massachusetts. 5 January.

[77] U.S. Environmental Protection Agency. 2018. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 18090006. Lower Neponset River Site – Hyde Park, MA. PCB's in Soil Field Method. 19 September.

[78] Downey, L. (ESAT). 2018. Letter to M. Bosworth (EPA Region 1 – New England), RE: TO No. 05, Task No. 1, TDF No. 1639, Case No. 47773. SDG No. PA41R3. Cape Fear

Analytical – Wilmington, NC, Lower Neponset River PCBs Site, Boston/Milton, MA. 3 December.

[79] U.S. Environmental Protection Agency. 2018. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 18090008. Lower Neponset River Site – Hyde Park, MA. PCBs Medium Level in Soils and Sediments. 2 October.

[80] Mahany, B. (START). 2018. Letter to M. Bosworth (EPA Region 1 – New England), RE: DAS Case No. 0914F. SDG No. D35475. Earth Toxics, Inc., Lower Neponset River PCBs, Boston, Massachusetts. 18 October.

ATTACHMENT A

LOWER NEPOSET RIVER PCBS SITE
FIGURES

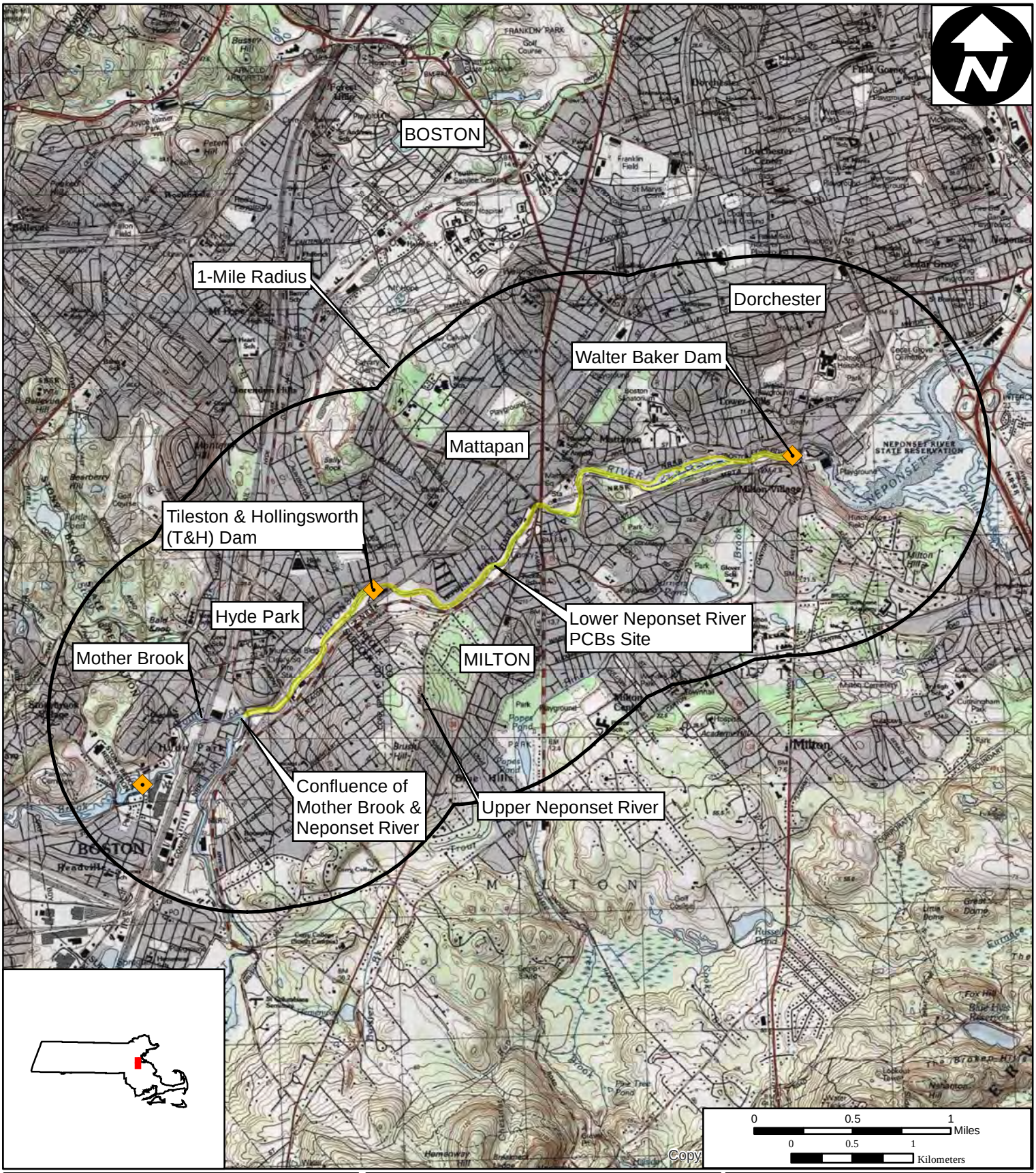

Figure 1

Site Location Map

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	4 April 2017
Modified by:	B. Mace
Modified on:	18 April 2019

Data Sources:
Topos: MicroPath/USGS/USA Topo Maps
Quadrangle Names: Blue Hill, Boston South, MA
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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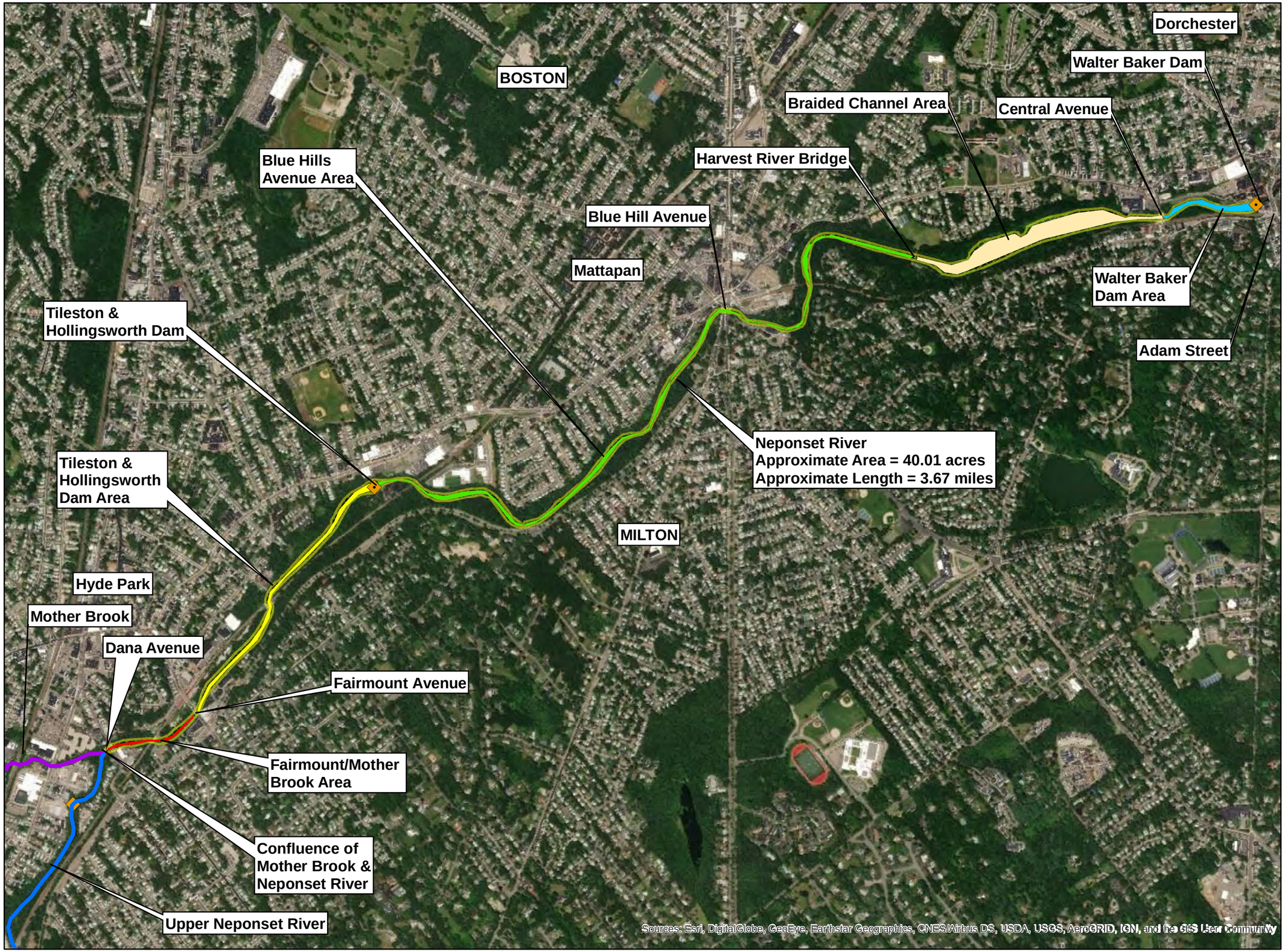

Figure 2

Site Map

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	18 April 2019

LEGEND

- Approx. Site Boundary
- Upper Neponset River
- Mother Brook to Charles
- Dams
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area

N

0 0.2 0.4
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP USGS

WESTON SOLUTIONS

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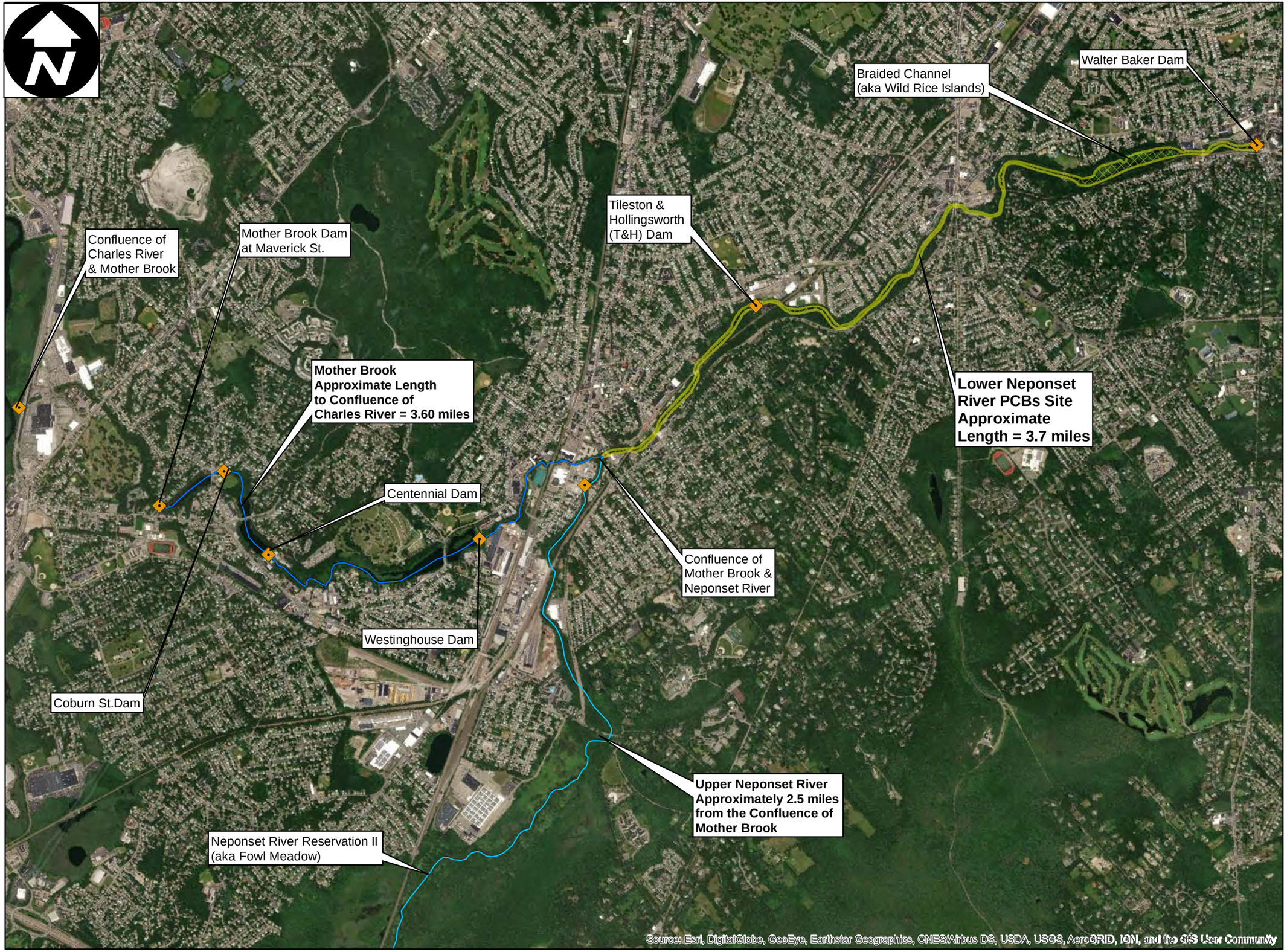

Figure 2A

Area of Concern Map

Lower Neponset River PCBs
Boston, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Approximate Site Boundary
- Mother Brook to Maverick St.
- Upper Neponset River
- Dams

0 0.25 0.5
Miles

0 1,500 3,000
Feet

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

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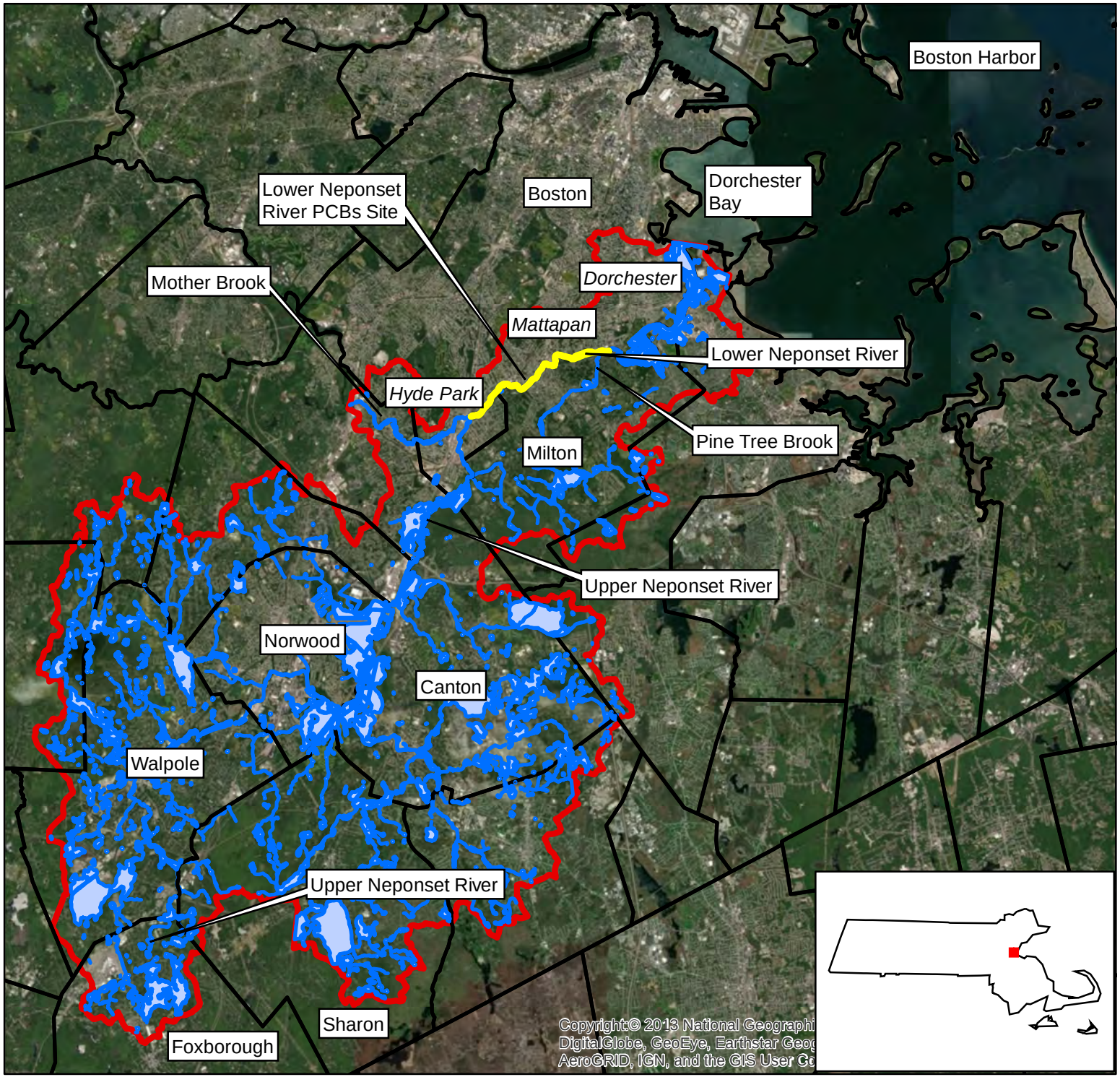

Figure 3

Neponset River Watershed

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number: TO1-01-16-06-0009
Created by: B. Mace
Created on: 3 April 2018
Modified by: B. Mace
Modified on: 13 February 2019

LEGEND

- Site Boundary
- Neponset Watershed
- Ponds
- Streams/Rivers
- Town Boundary

N

0 2.5 5

Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS

WESTON SOLUTIONS

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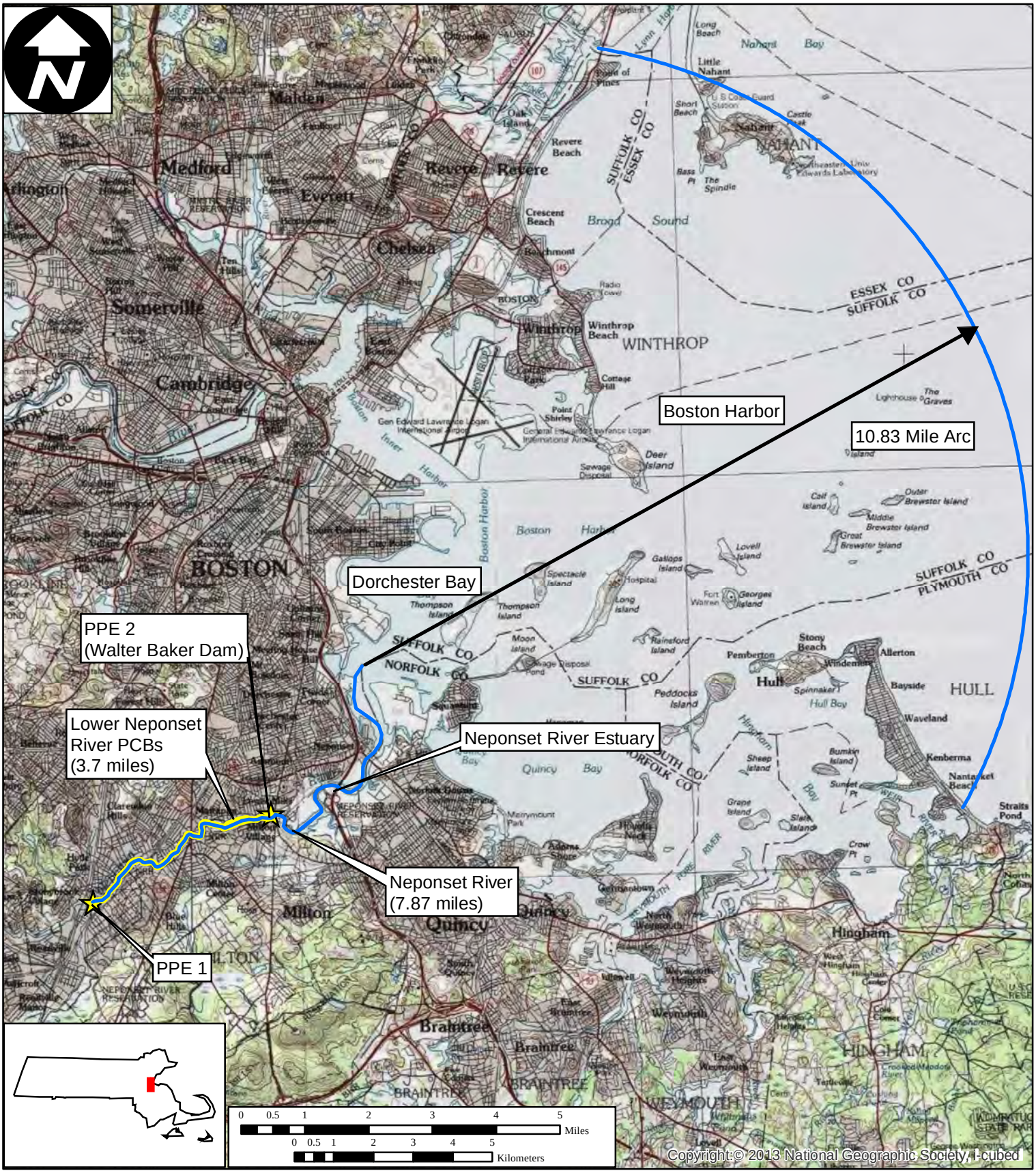

Figure 3A

Surface Water Pathway

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) III
Contract No. EP-W-05-042

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	9 April 2019

Data Sources:

Topos: MicroPath/USGS
Quadrangle Name: Boston, MA
All other data: START

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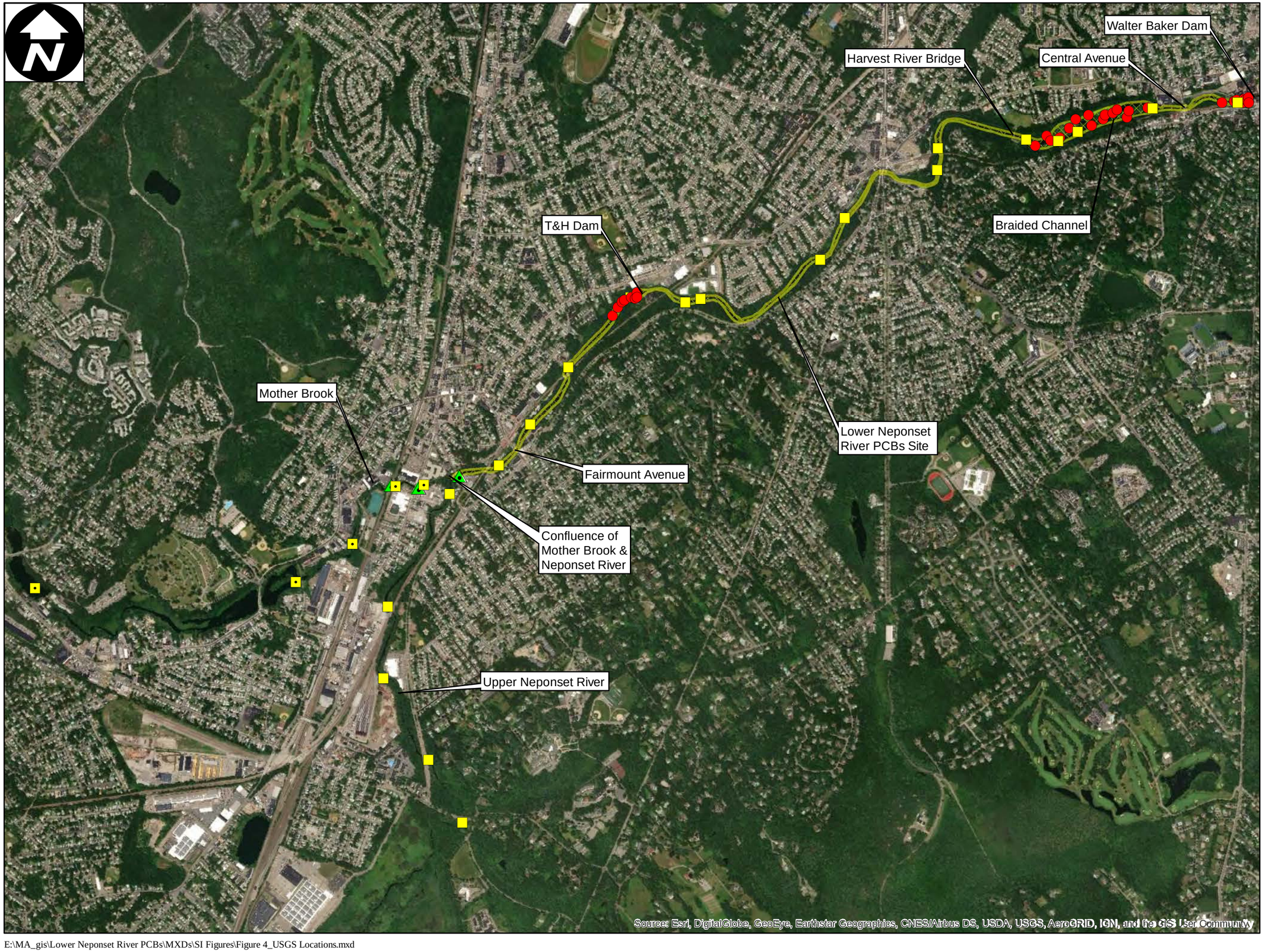

Figure 4

2002-2003 and 2004-2006 USGS Sample Locations

Lower Neponset River PCBs
Boston, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Approx Site Boundary
- 2002 Sediment-Core Locations
- 2002 Sediment-Grab Locations
- 2005 Sediment Grab Locations
- 2002/2005 PISCES Locations
- 2005 PISCES Locations

PISCES = Passive in-situ chemical-extraction sampler

0 0.2 0.4
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP USGS

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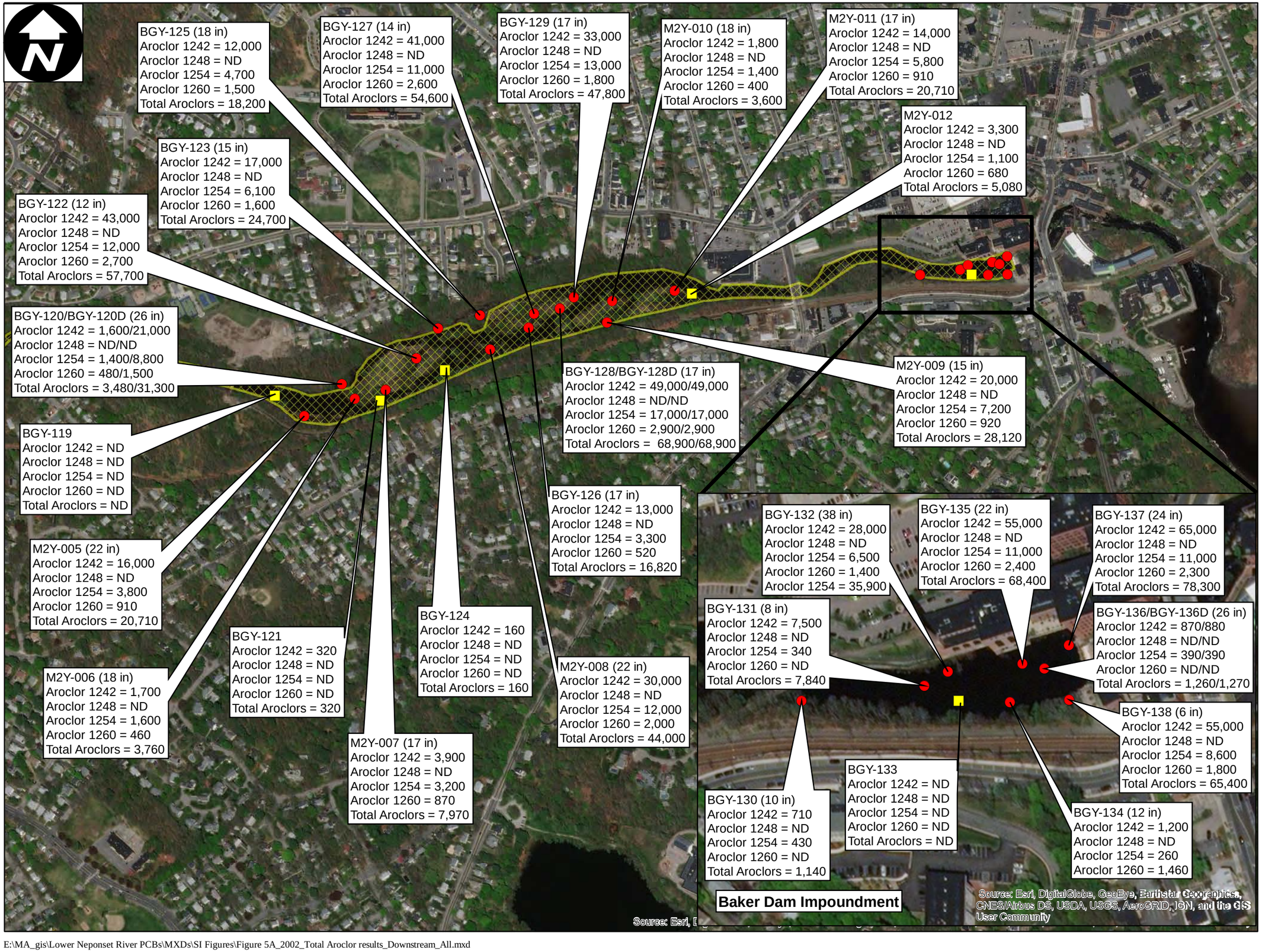

Figure 5A

PCBs in Sediment Results (USGS 2002-2003 Grab and Core Sediment Samples Downstream Locations)

Lower Neponset River PCBs
Boston, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 January 2019

LEGEND

- Site
- Sediment-Core Locations
- Sediment-Grab Locations

All results in parts per billion (ppb).

ND = Not Detected.
D = Duplicate sample.

0 450 900
Feet

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP USGS

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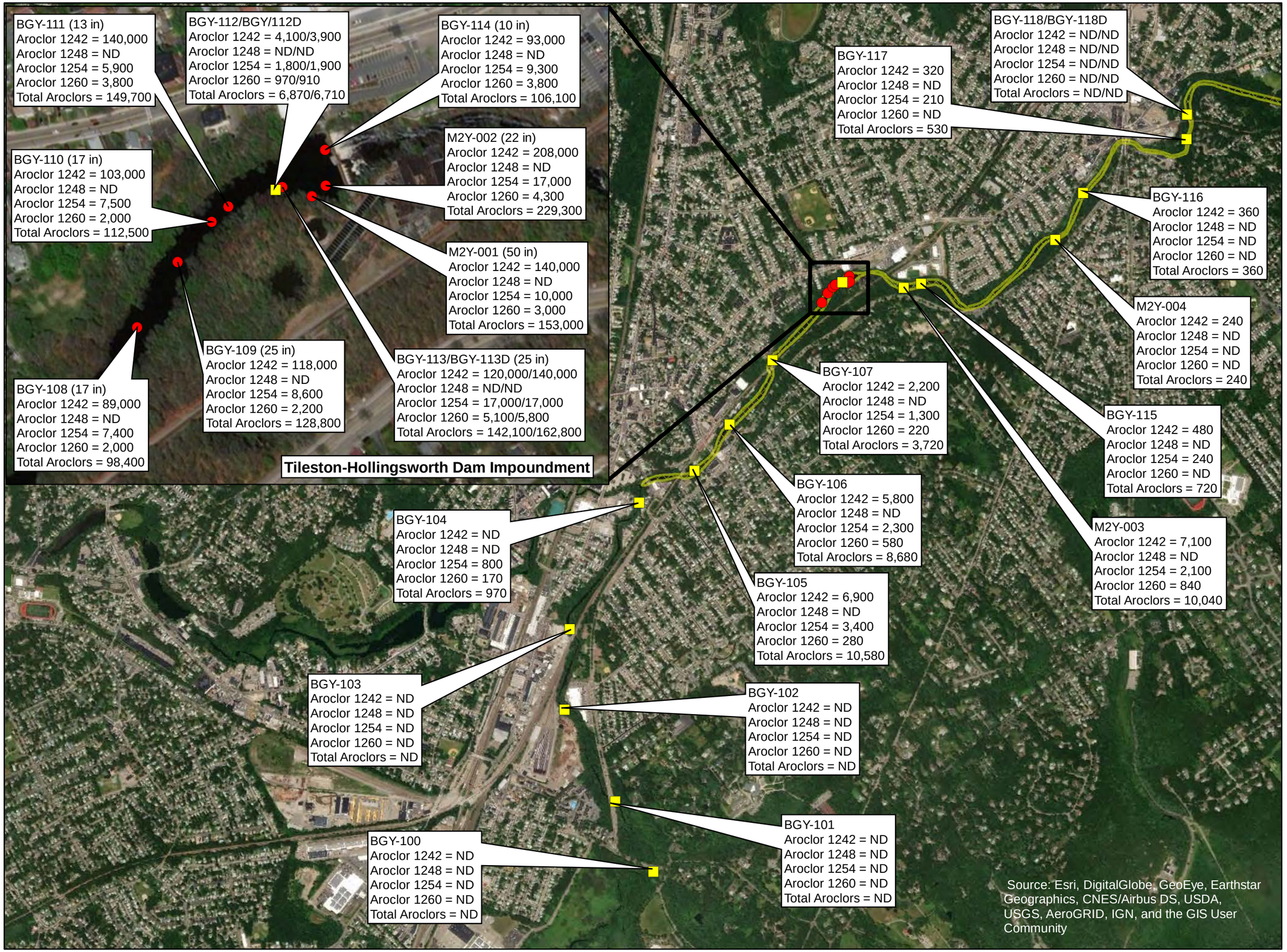

Figure 5B

PCBs in Sediment Results (USGS 2002-2003 Grab and Core Sediment Samples Upstream Locations)

Lower Neponset River PCBs
Boston, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 January 2019

LEGEND

- Site
- Sediment-Core Locations
- Sediment-Grab Locations

All results in parts per billion (ppb).

ND = Not Detected.
D = Duplicate sample.

0 1,000 2,000
Feet

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP USGS

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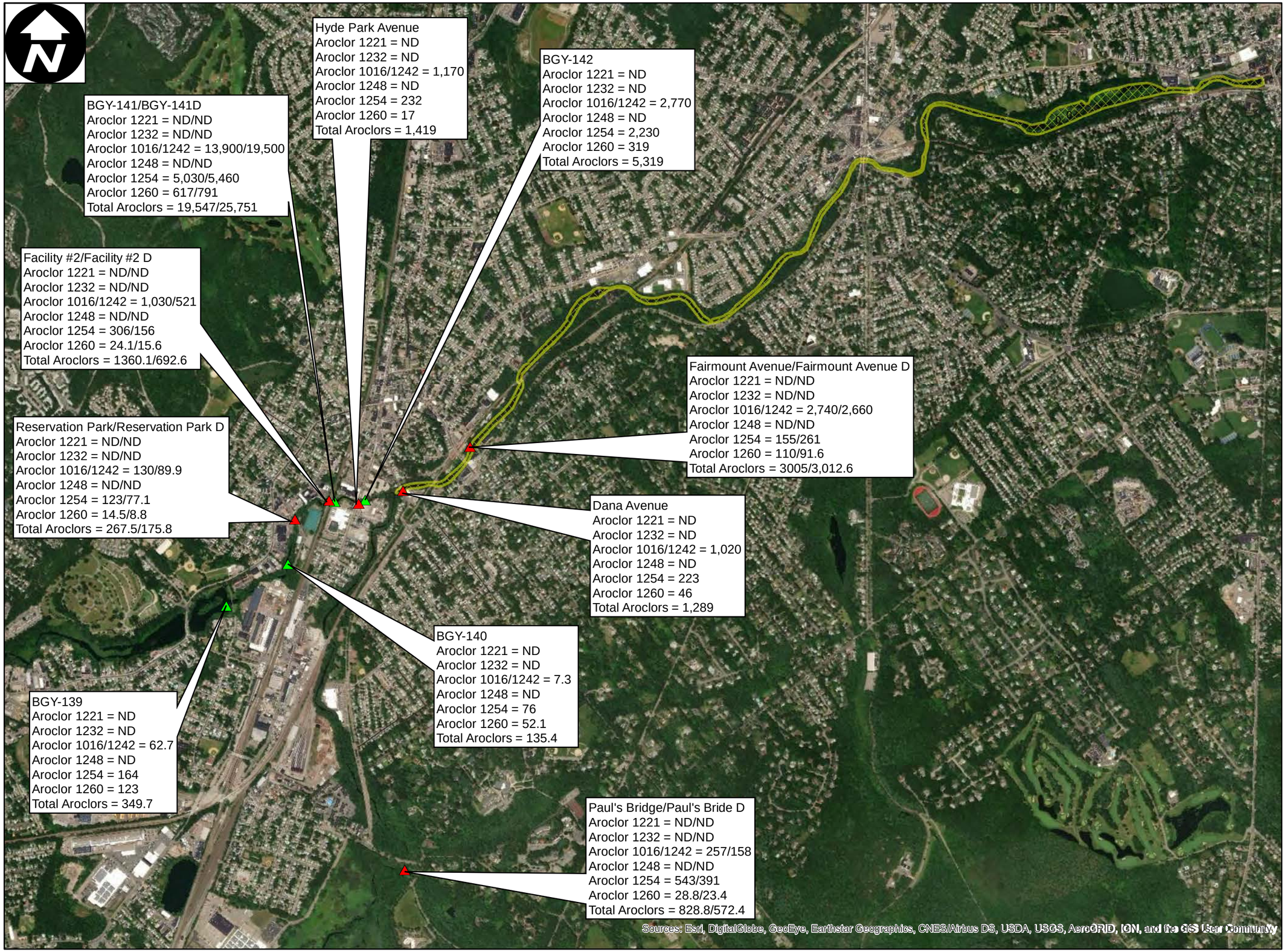


Figure 5C

PCBs in Sediment Results (USGS 2004-2006 Bottom-Grab and PISCES Samples)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Approx. Site Boundary
- Sediment Grab Locations
- PISCES Locations

Sediment Grab Results in nanograms per gram (ng/g).

PISCES Results in nanograms per sample (ng/sample).

ng/g equivalent to parts per billion (ppb)

D = Duplicate sample.

0 0.225 0.45
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP USGS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 5C_2005_Total Aroclor results_All.mxd

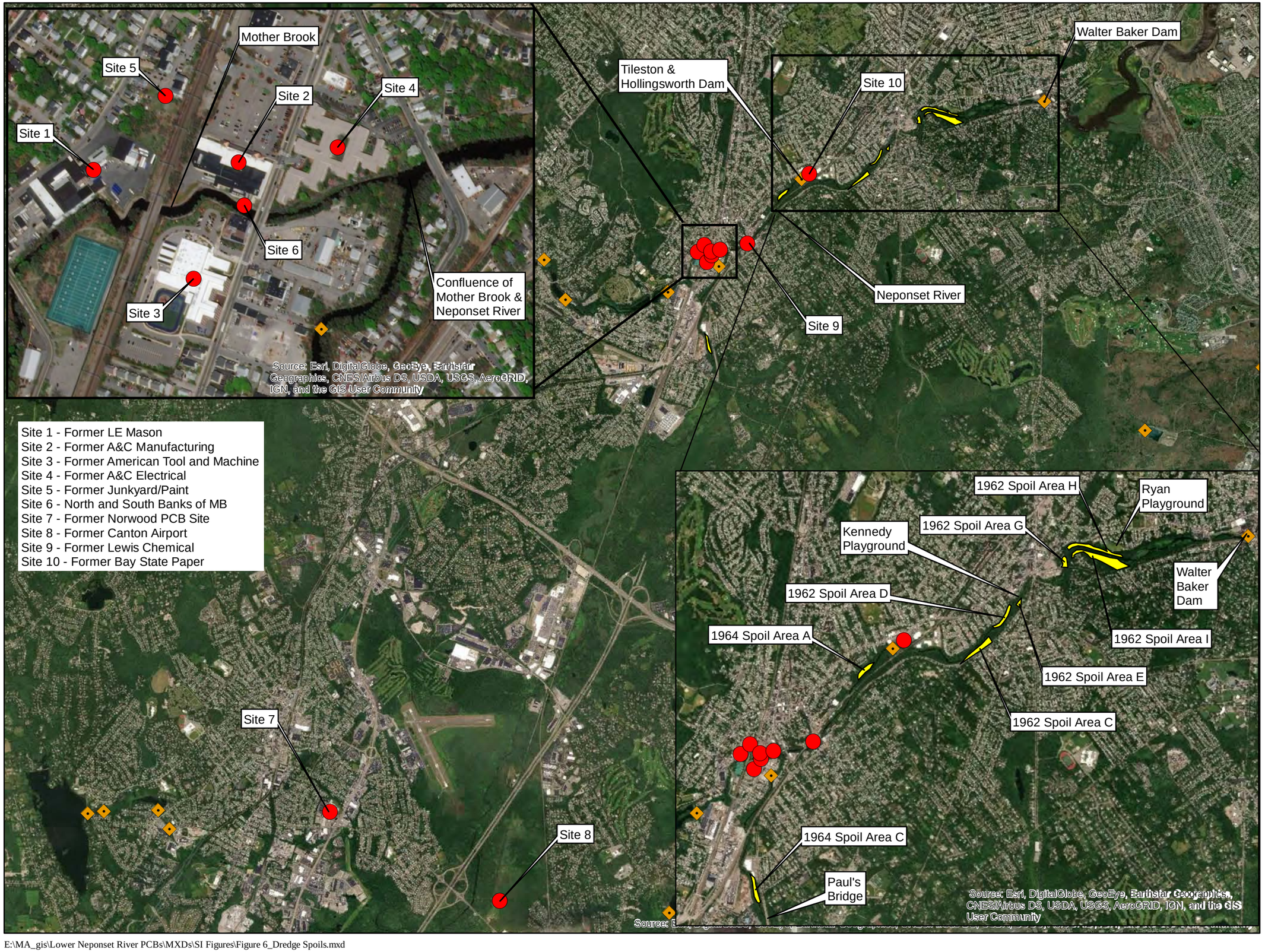


Figure 6

PCB Disposal Sites and Dredge Spoils Areas Map

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Dredge Spoils Areas
- PCB Disposal Sites
- Dams

N

0 2,500 5,000
Feet

0 0.5 1
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

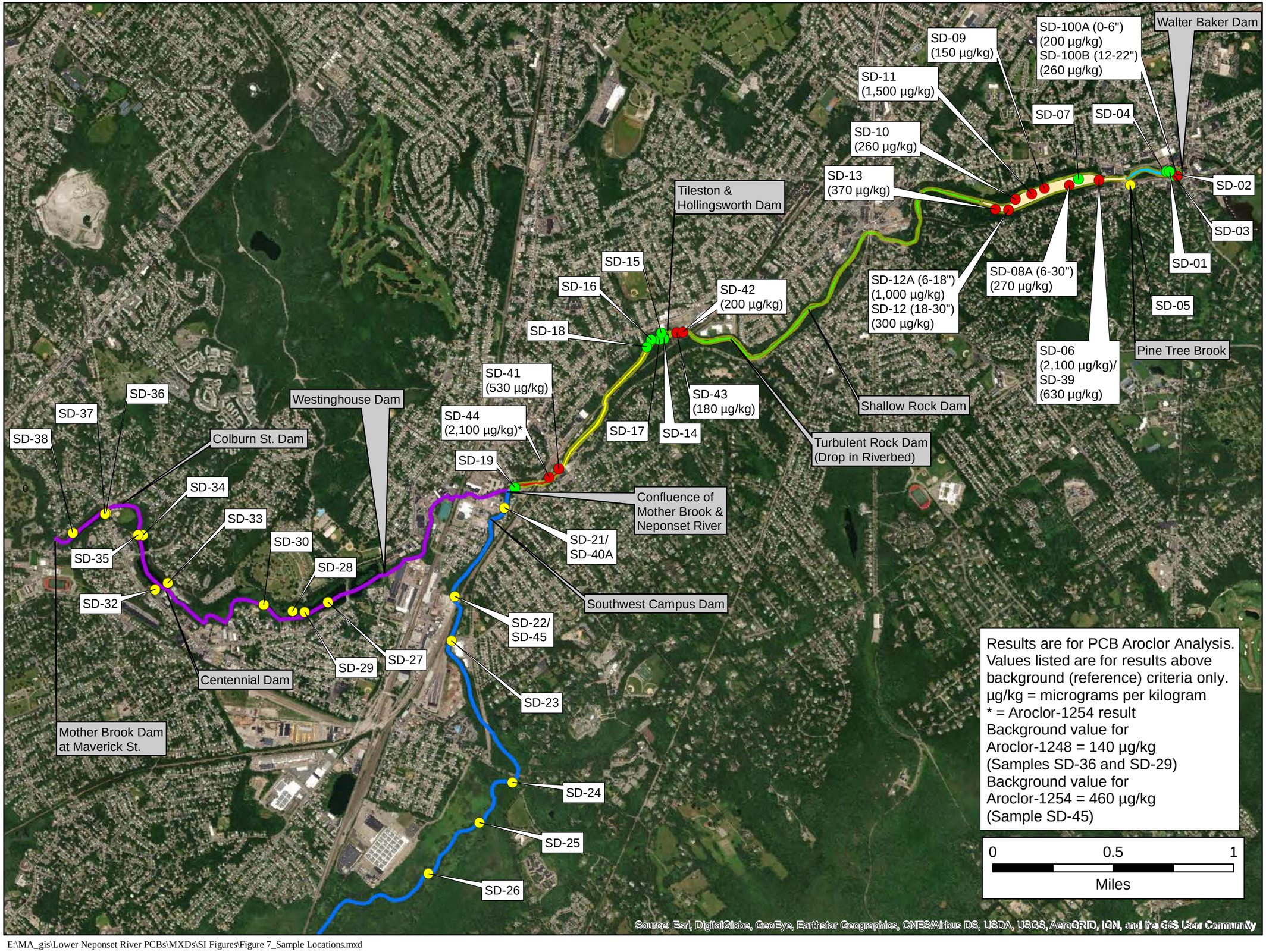
WESTON SOLUTIONS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 6_Dredge Spoils.mxd

Figure 7

2017 START Sediment Sample Location and Results Map

Lower Neponset River PCBs
Boston/Milton, Massachusetts



EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	11 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Upper Neponset River
- Mother Brook to Charles

PCB Aroclor-1248 Results

- Background Sample
- Below background
- Above background

SD-09 (150 µg/kg) — Sample ID, Aroclor-1248 result

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 7_Sample Locations.mxd

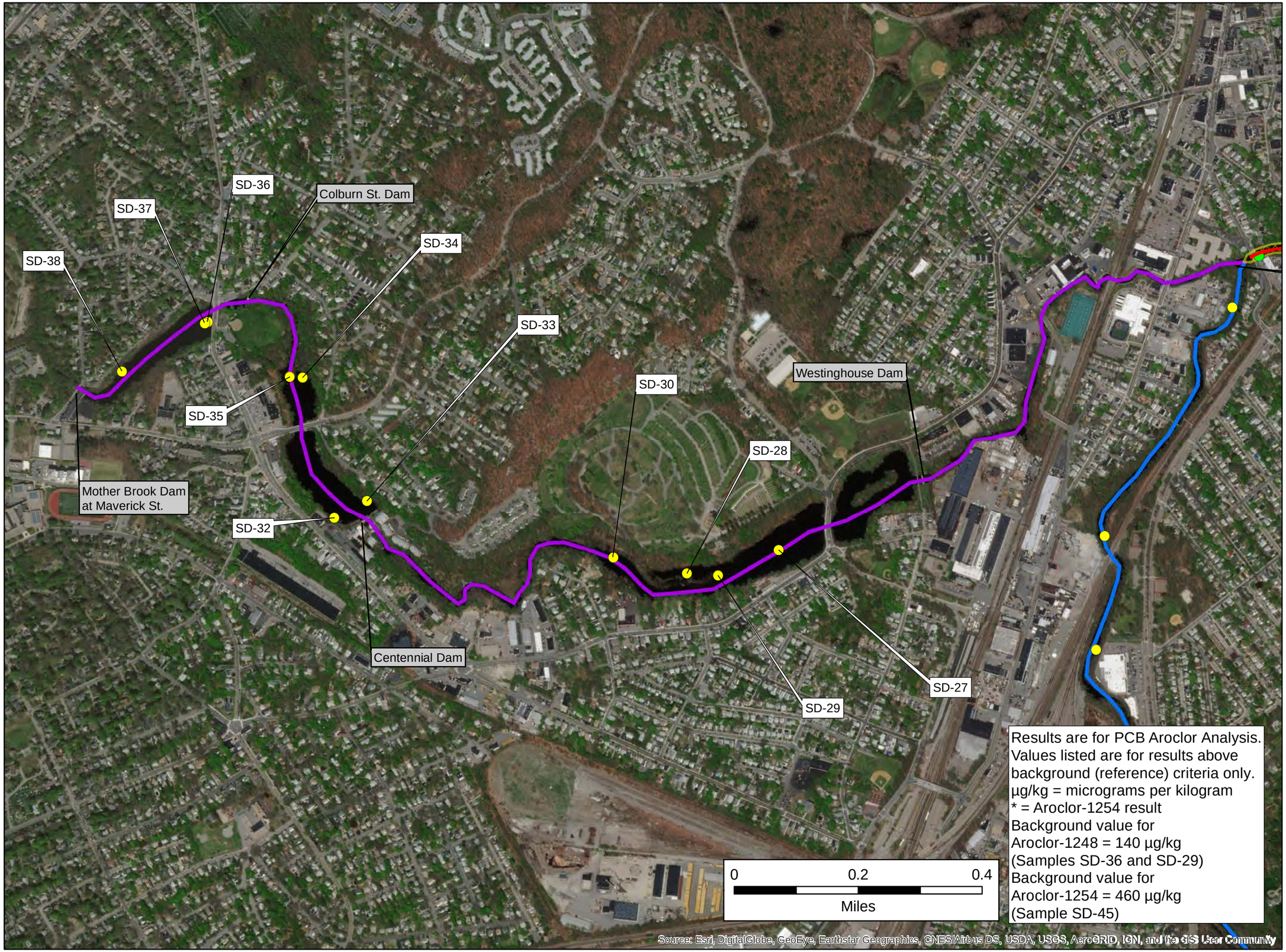
Figure 7A

2017 START Sediment Sample Locations and Results Map (Mother Brook)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019



Results are for PCB Aroclor Analysis.
Values listed are for results above background (reference) criteria only.
µg/kg = micrograms per kilogram
* = Aroclor-1254 result
Background value for Aroclor-1248 = 140 µg/kg (Samples SD-36 and SD-29)
Background value for Aroclor-1254 = 460 µg/kg (Sample SD-45)

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Upper Neponset River
- Mother Brook to Charles

PCB Aroclor-1248 Results

- Background Sample
- Below background
- Above background

SD-09 (150 µg/kg) — Sample ID, Aroclor-1248 result

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 7A_MB_Charles.mxd

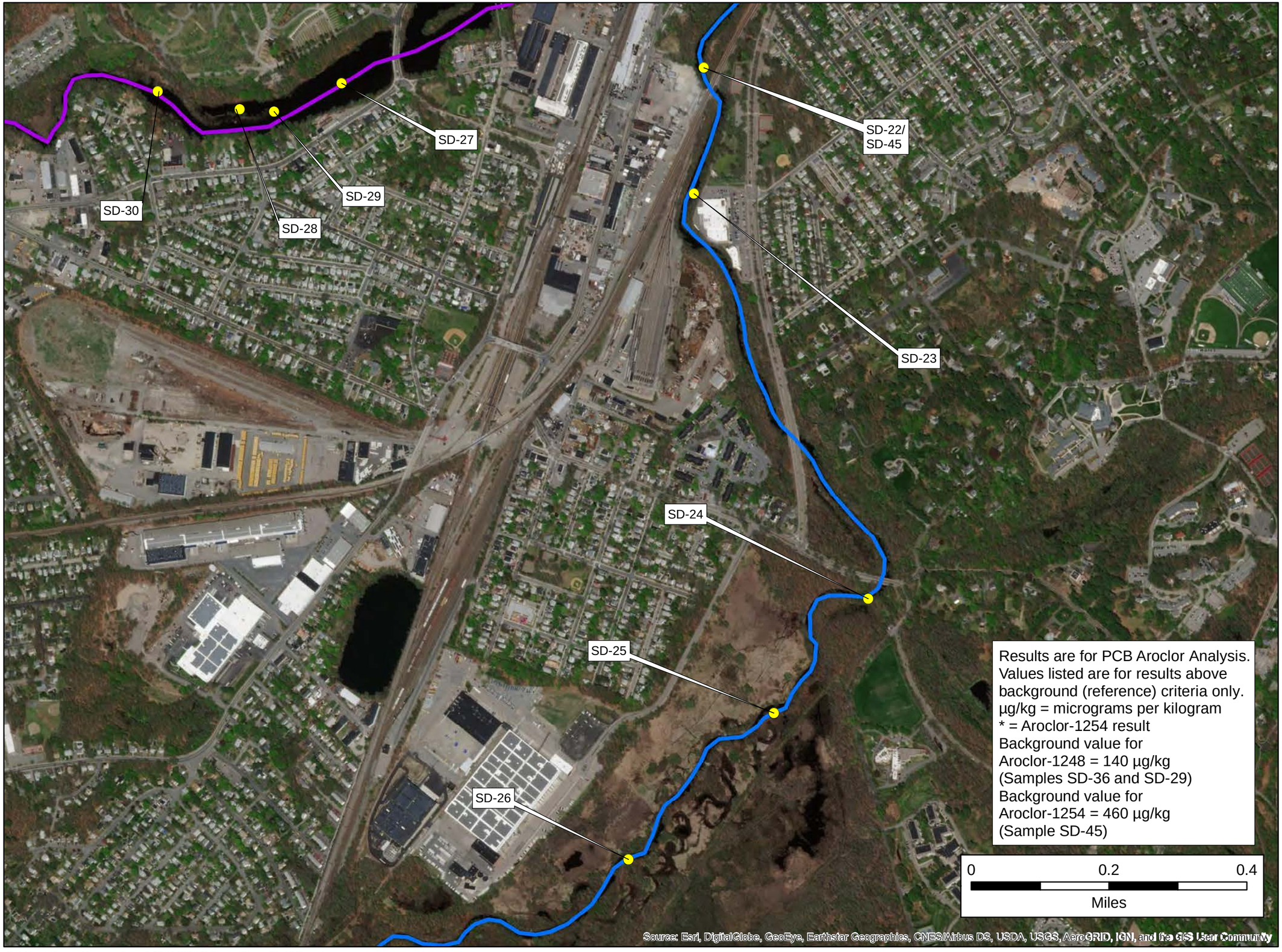


Figure 7B

2017 START Sediment Sample Locations and Results Map (Upper Neponset River)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

PCB Aroclor-1248 Results

- Background Sample
- Below background
- Above background

SD-09 (150 µg/kg) — Sample ID, Aroclor-1248 result

N

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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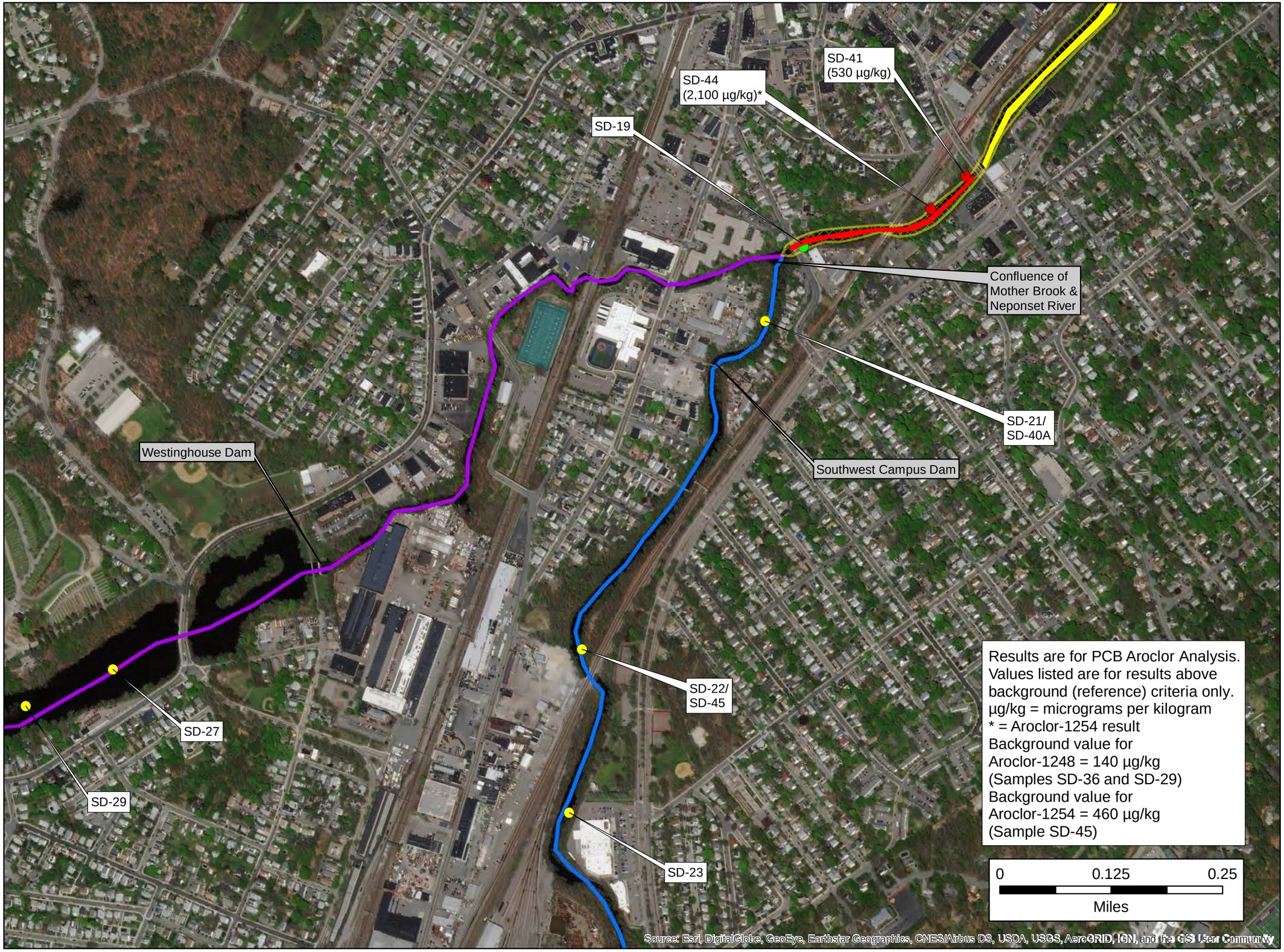

Figure 7C

2017 START Sediment Sample Locations and Results Map (Fairmount/Mother Brook Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Upper Neponset River
- Mother Brook to Charles

PCB Aroclor-1248 Results

- Background Sample
- Below background
- Above background

SD-09
(150 µg/kg)

Sample ID
Aroclor-1248 result

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 7C_Fairmount_MB.mxd

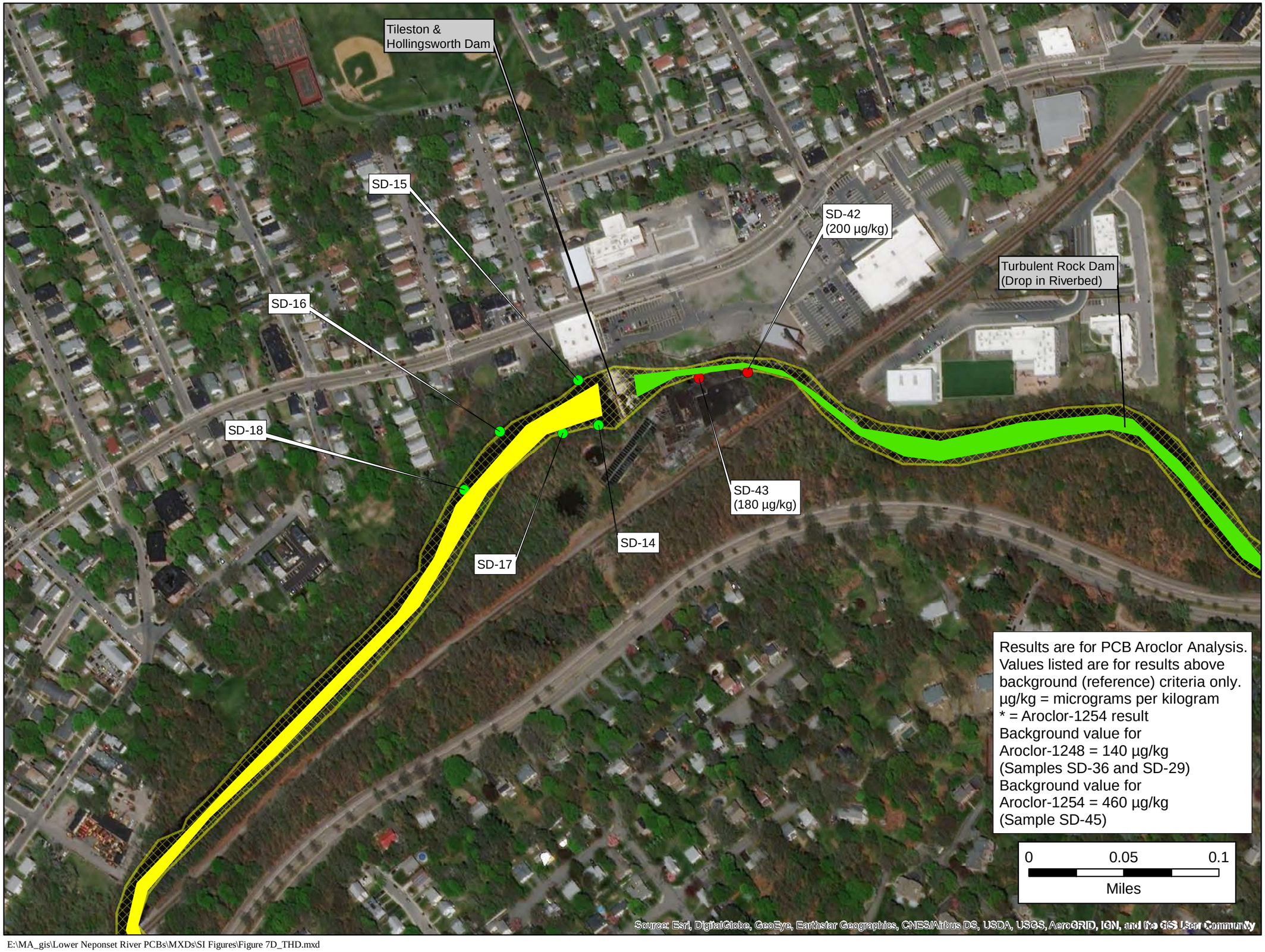

Figure 7D

2017 START Sediment Sample Locations and Results Map (Tileston & Hollingsworth Dam and Blue Hill Ave Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Upper Neponset River
- Mother Brook to Charles

PCB Aroclor-1248 Results

- Background Sample
- Below background
- Above background

SD-09 (150 µg/kg) — Sample ID, Aroclor-1248 result

N

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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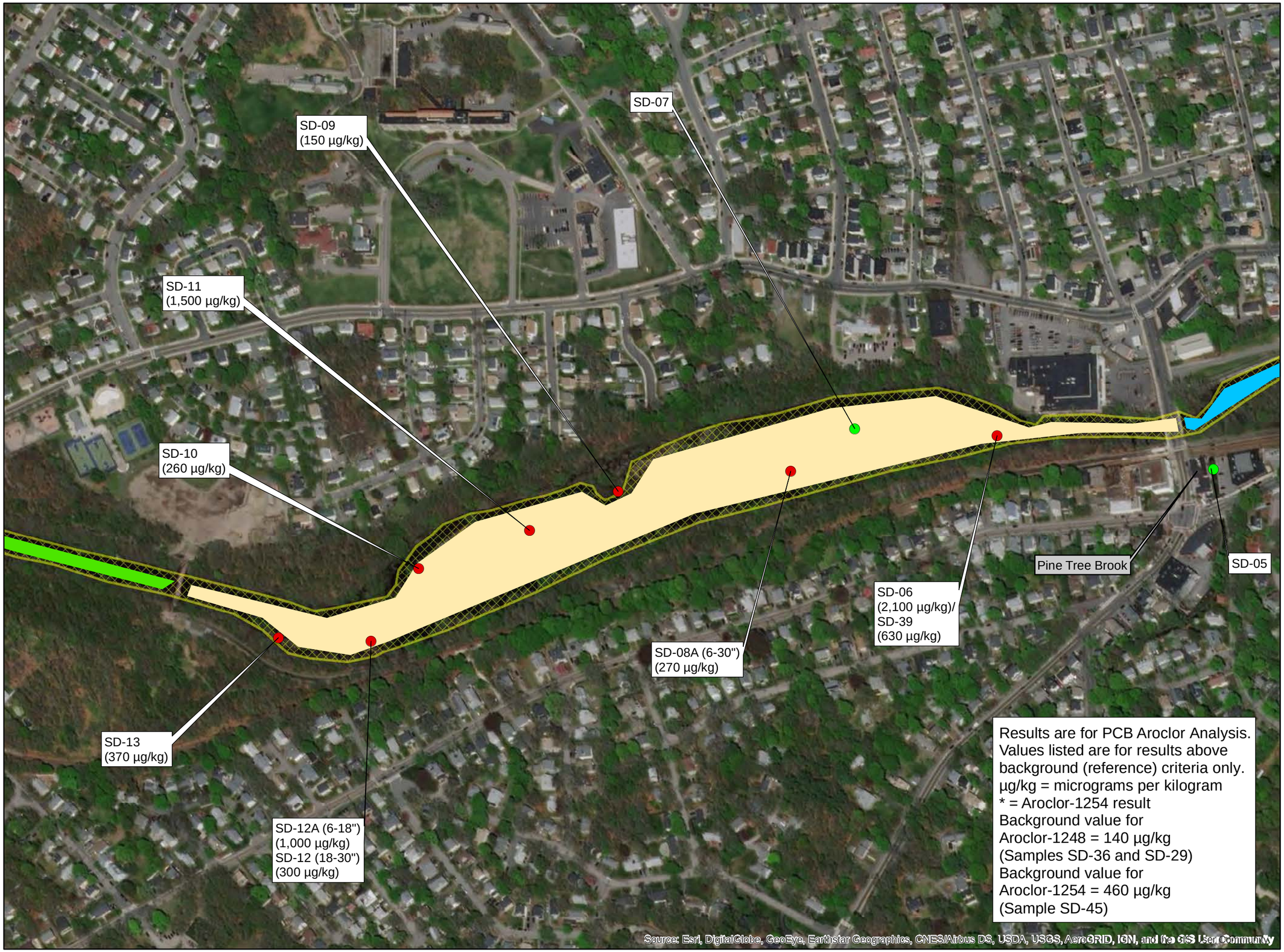


Figure 7E

2017 START Sediment Sample Locations and Results Map (Braided Channel Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Upper Neponset River
- Mother Brook to Charles

PCB Aroclor-1248 Results

- Background Sample
- Below background
- Above background

SD-09 (150 µg/kg) — Sample ID, Aroclor-1248 result

N

0 0.05 0.1
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

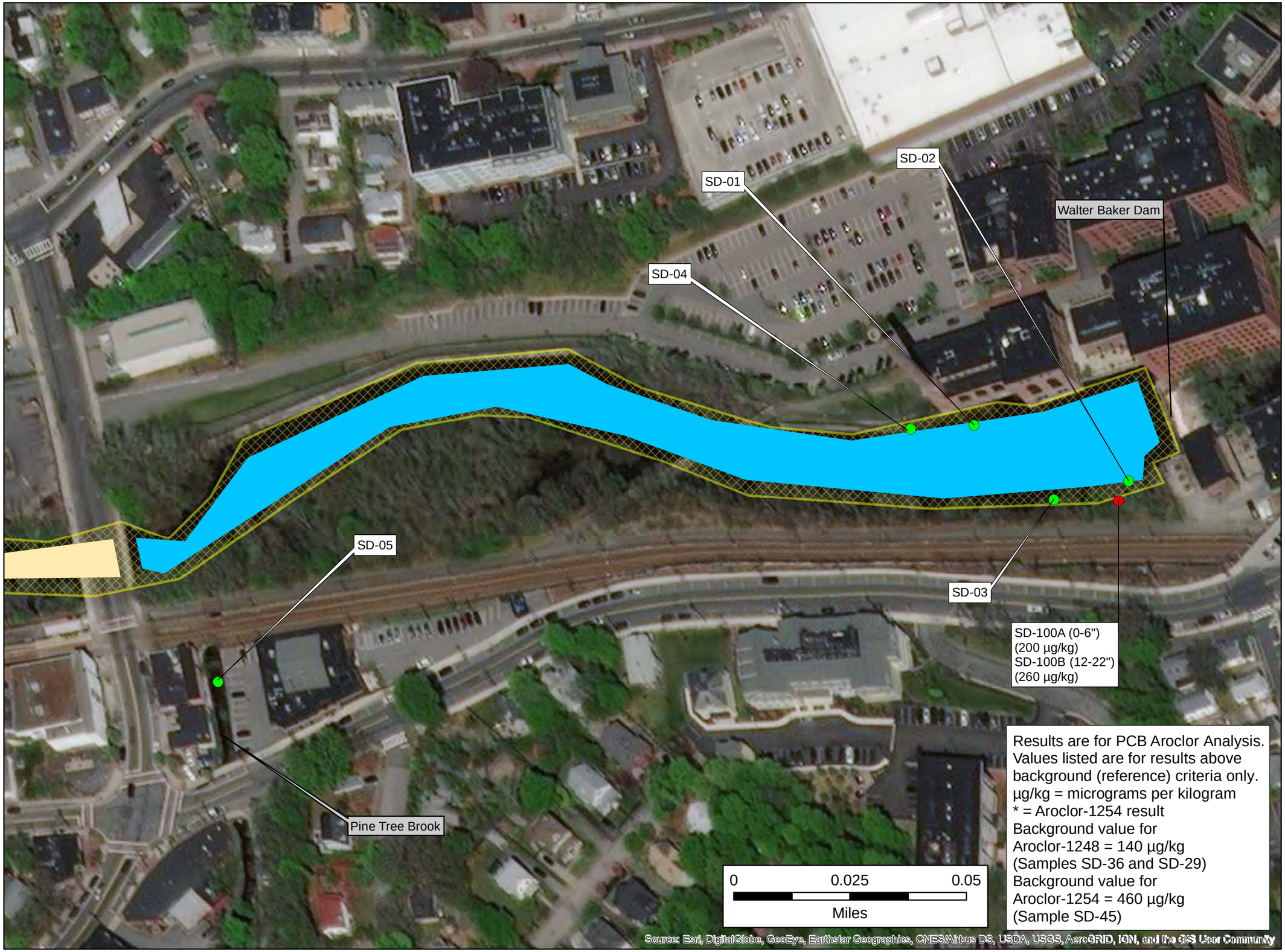
WESTON SOLUTIONS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 7E_BCA.mxd

Figure 7F

2017 START Sediment Sample Locations and Results Map (Walter Baker Dam Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts



Results are for PCB Aroclor Analysis.
Values listed are for results above background (reference) criteria only.
µg/kg = micrograms per kilogram
* = Aroclor-1254 result
Background value for Aroclor-1248 = 140 µg/kg (Samples SD-36 and SD-29)
Background value for Aroclor-1254 = 460 µg/kg (Sample SD-45)

EPA Region I	
Superfund Technical Assessment and Response Team (START) IV	
Contract No. EP-S3-15-01	
TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	13 February 2019

LEGEND

- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Approx. Site Boundary
- Upper Neponset River
- Mother Brook to Charles

PCB Aroclor-1248 Results

- Background Sample
- Below background
- Above background

SD-09 (150 µg/kg) — Sample ID, Aroclor-1248 result

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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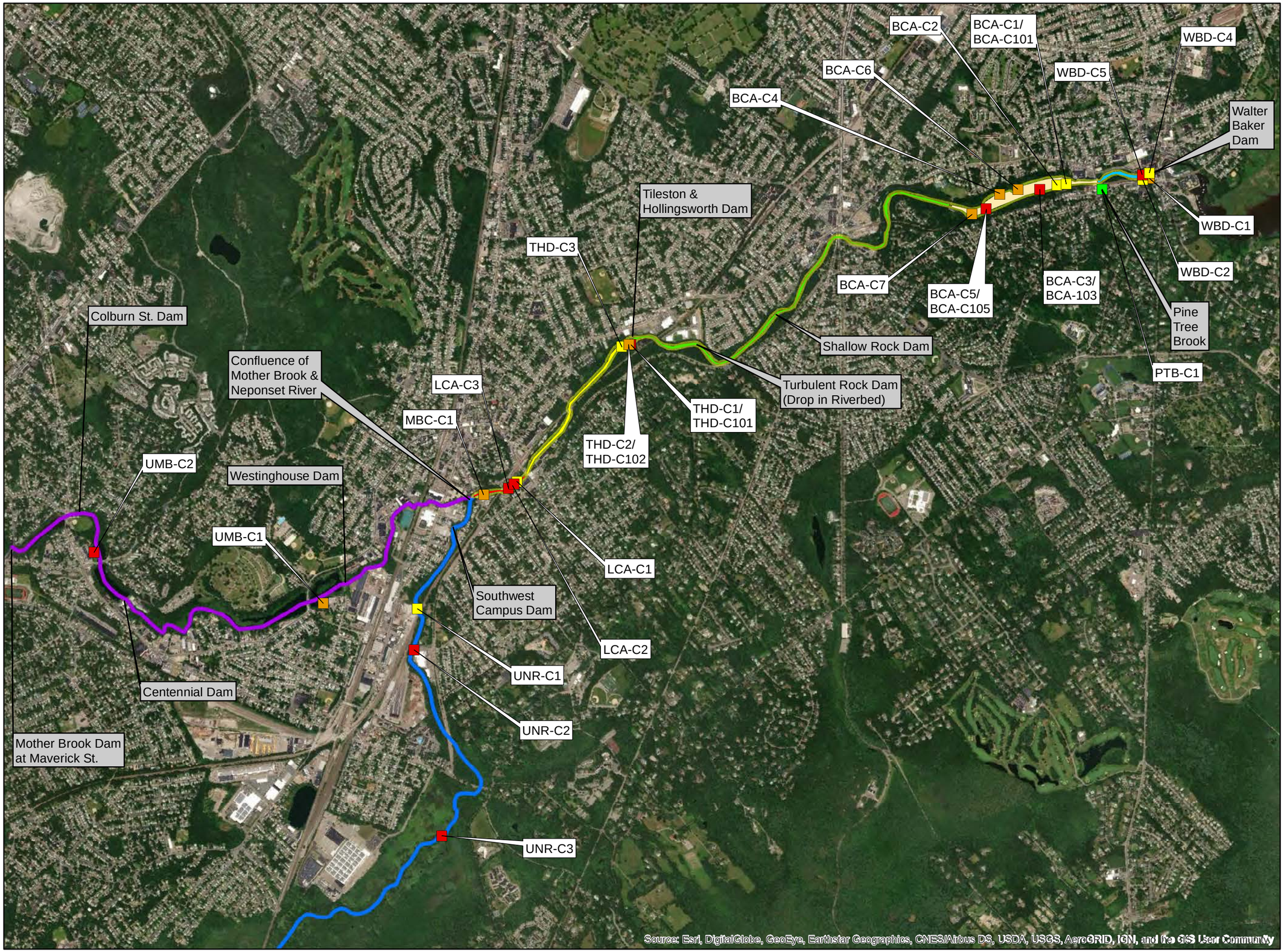


Figure 8

2018 START Sediment Sample Locations and Analyses Map

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

Sample Analyses

- Field Screening Only
- Total PCBs (Congener)
- PCB Aroclor
- PCB Aroclor and Total PCBs

NOTE: All Samples were field screened for PCBs.

N

0 0.25 0.5

Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

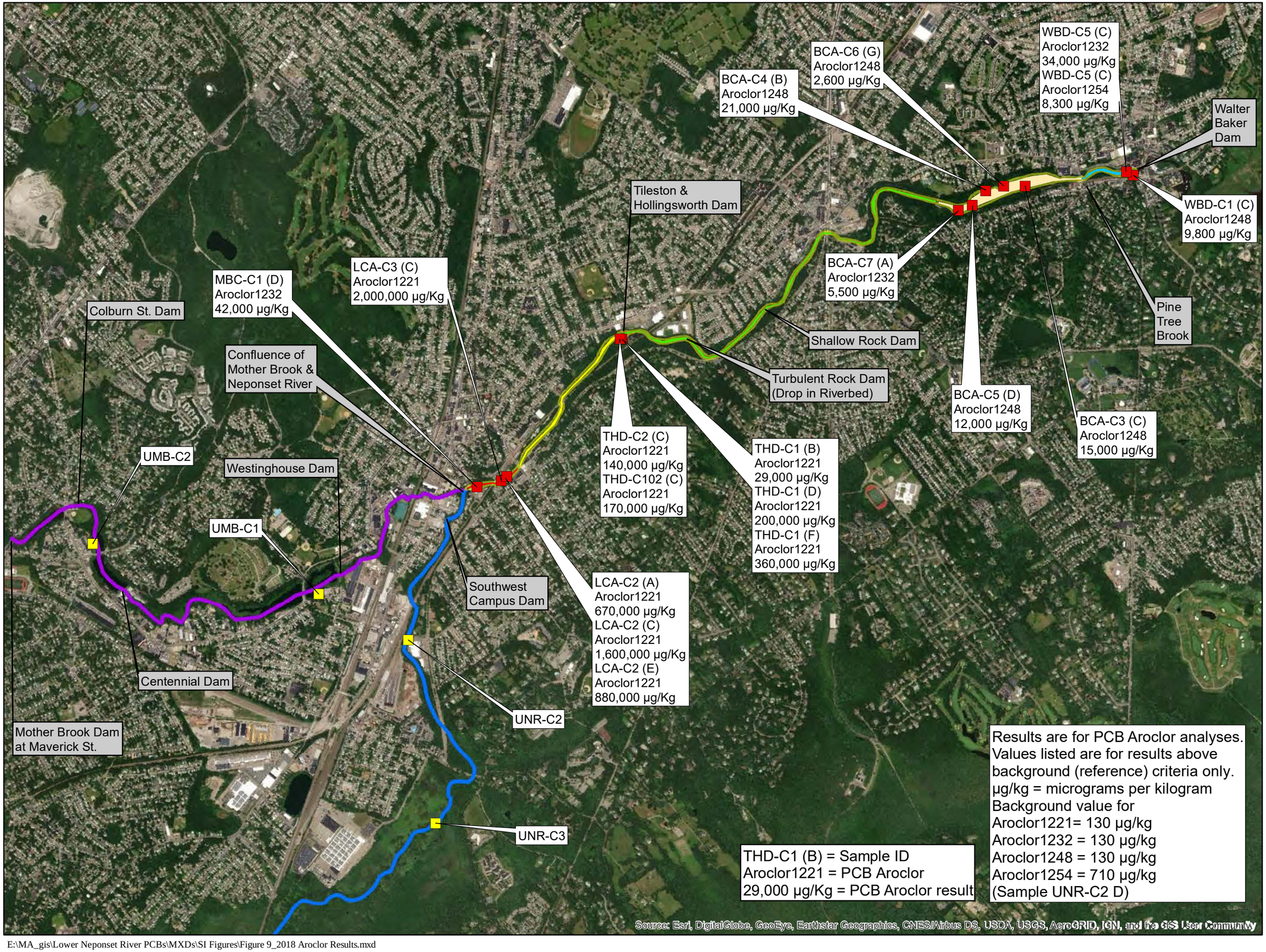
WESTON SOLUTIONS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 8_2018 Sample Analysis.mxd

Figure 9

2018 START Sediment Sample Locations and PCB Aroclor Results Map

Lower Neponset River PCBs
Boston/Milton, Massachusetts



EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

PCB Aroclor Results

- Background Sample
- Above Background
- Below Background

N

0 0.25 0.5
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 9_2018 Aroclor Results.mxd

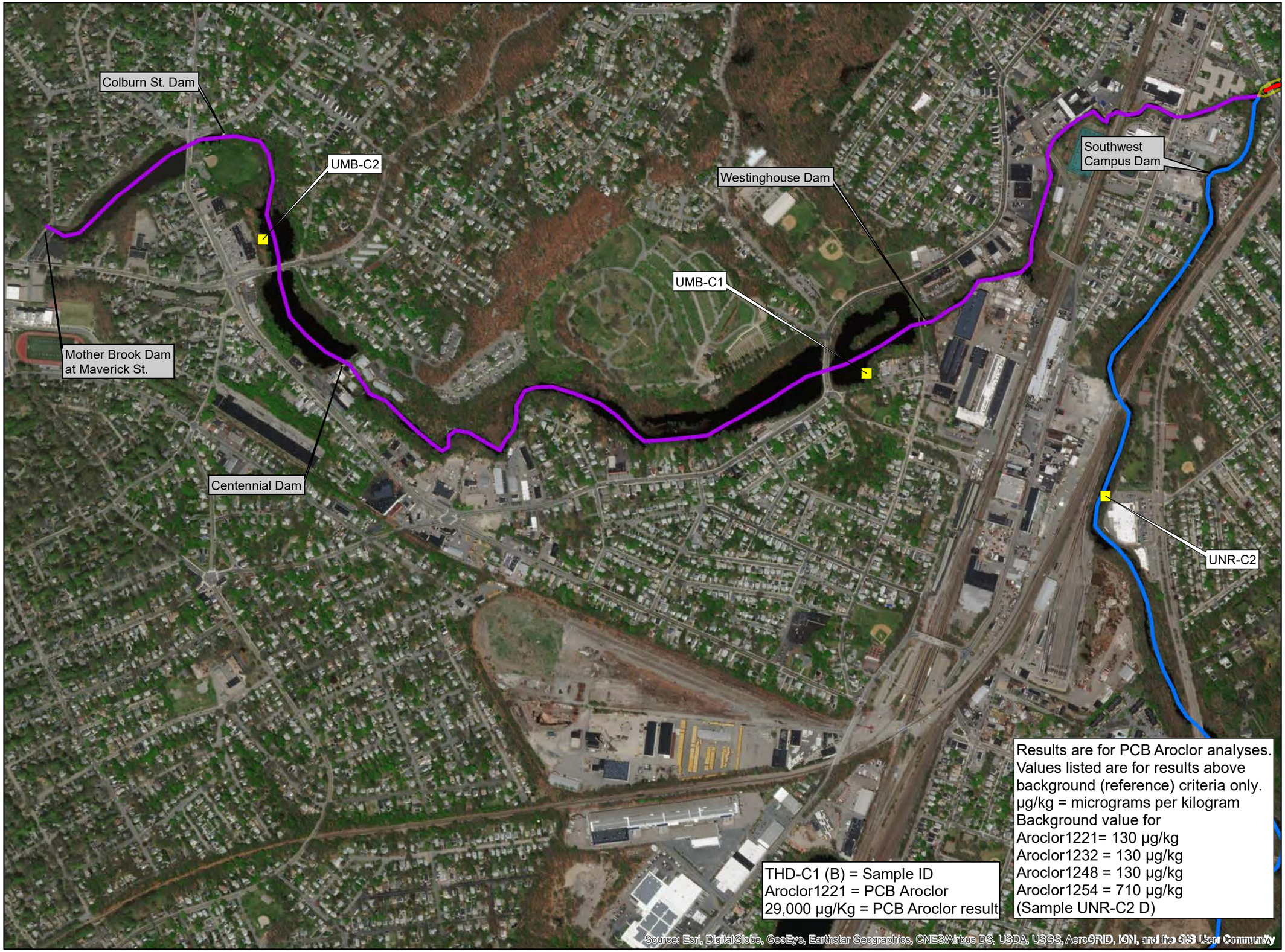


Figure 9A

2018 START Sediment Sample Locations and PCB Aroclor Results Map (Mother Brook)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

PCB Aroclor Results

- Background Sample
- Above Background
- Below Background

0 0.1 0.2
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 9A_MB_Charles.mxd

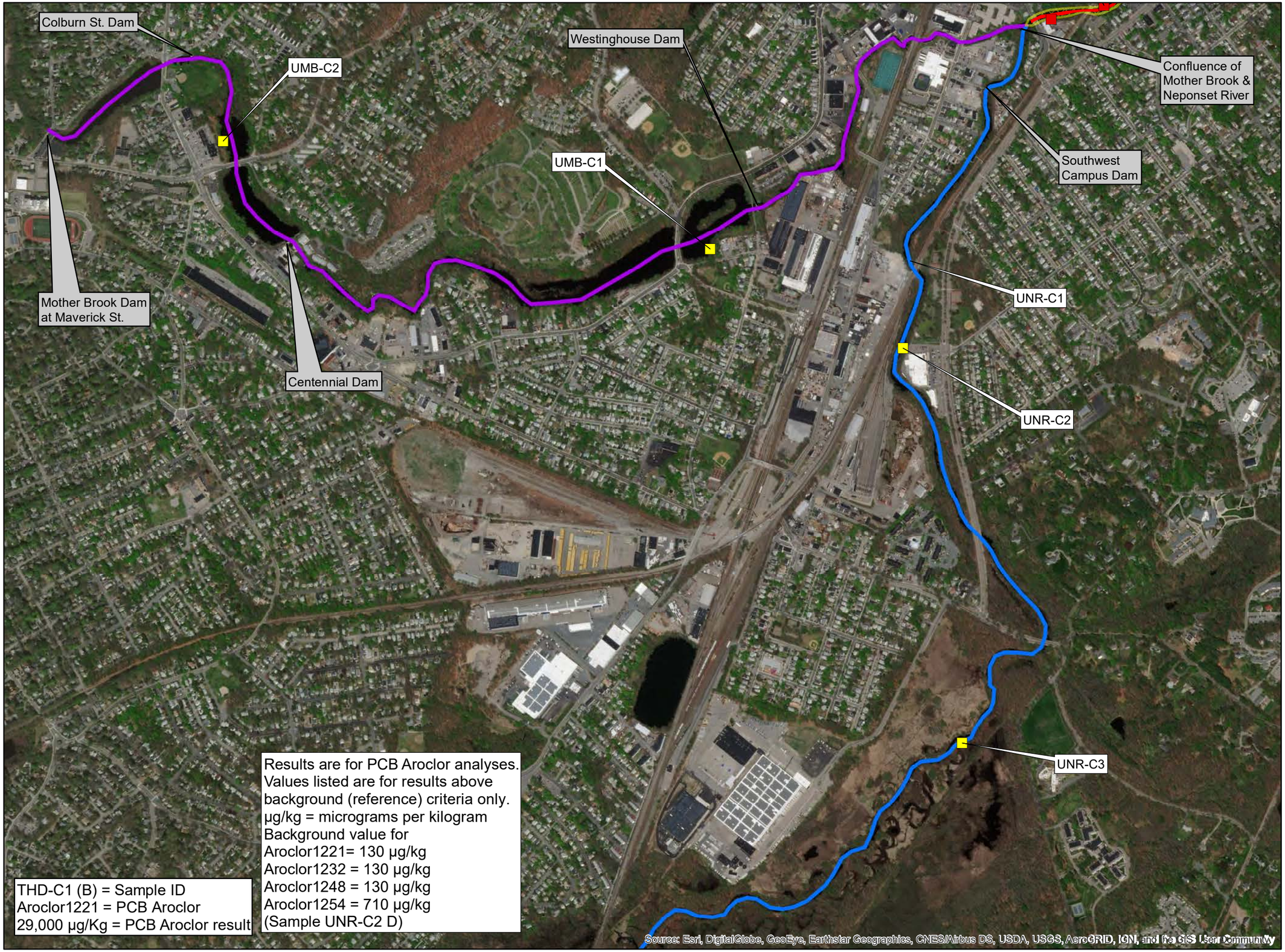


Figure 9B

2018 START Sediment Sample Locations and PCB Aroclor Results Map (Upper Neponset River)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

PCB Aroclor Results

- Background Sample
- Above Background
- Below Background

0 0.125 0.25
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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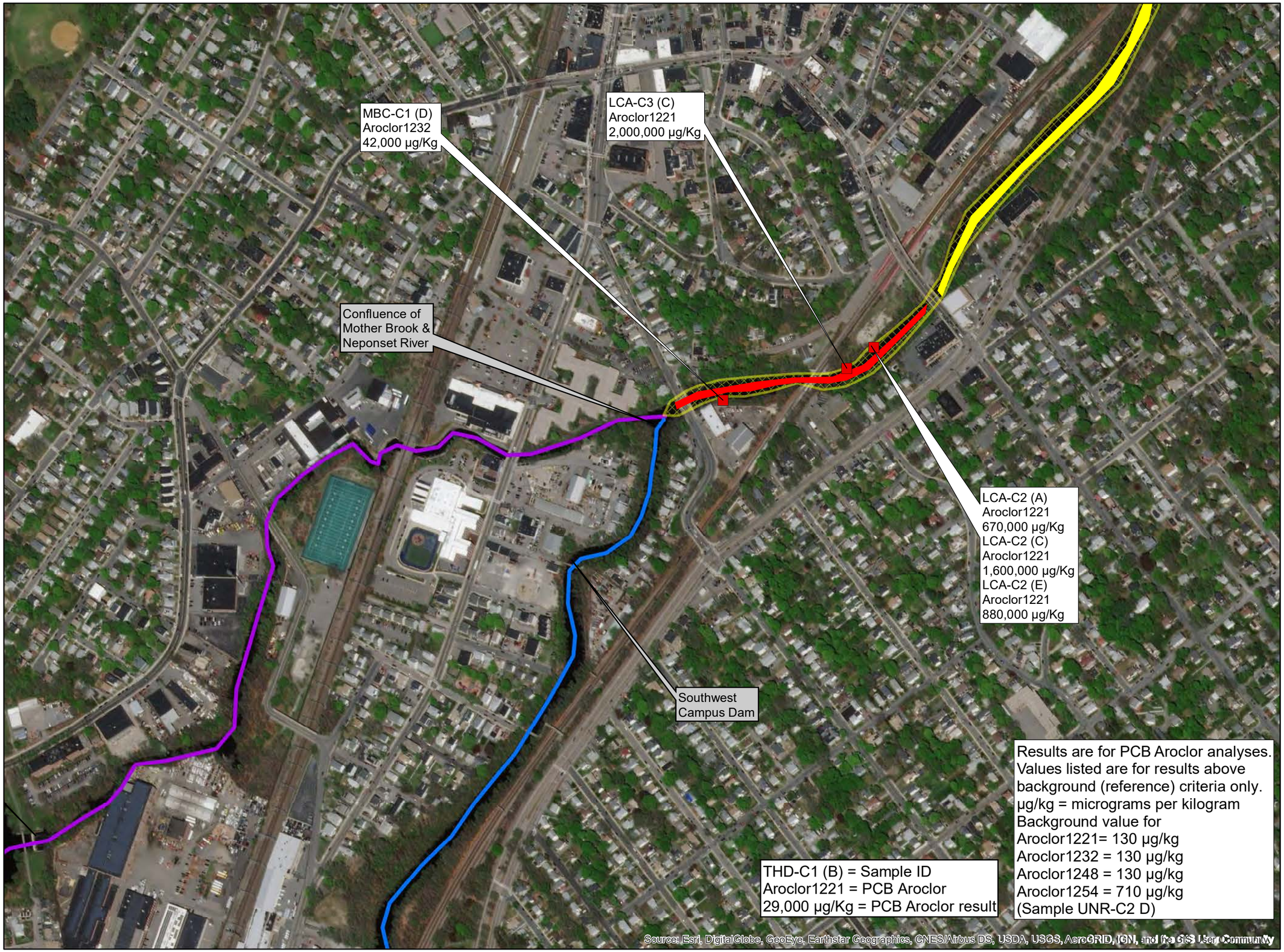

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 9C_Fairmount_MB.mxd

Figure 9C

2018 START Sediment Sample Locations and PCB Aroclor Results Map (Fairmount/Mother Brook Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

PCB Aroclor Results

- Background Sample
- Above Background
- Below Background

N

0 0.05 0.1
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

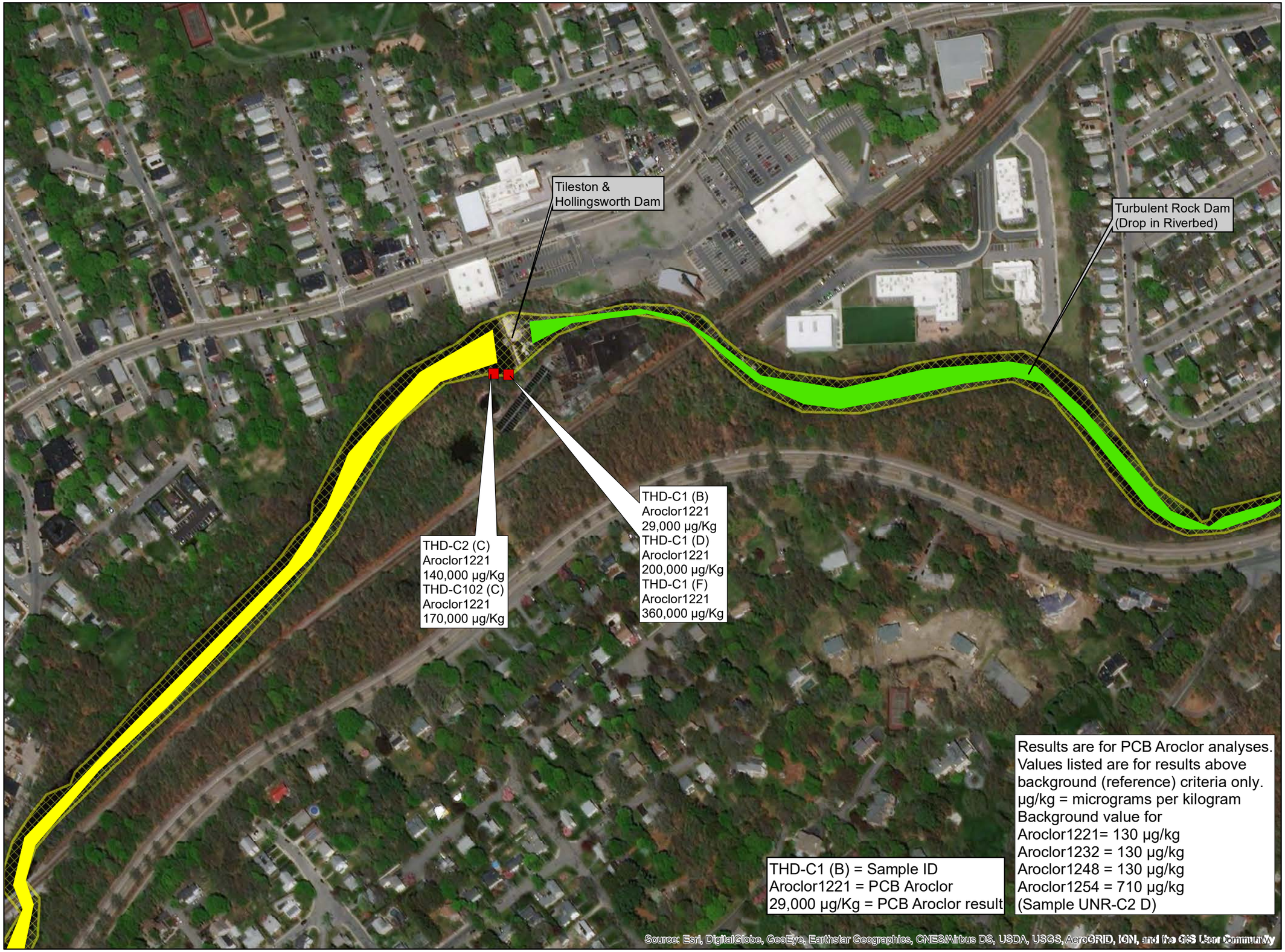

Figure 9D

2018 START Sediment Sample Locations and PCB Aroclor Results Map (Tileston & Hollingsworth Dam and Blue Hill Ave Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

PCB Aroclor Results

- Background Sample
- Above Background
- Below Background

N

0 0.0375 0.075

Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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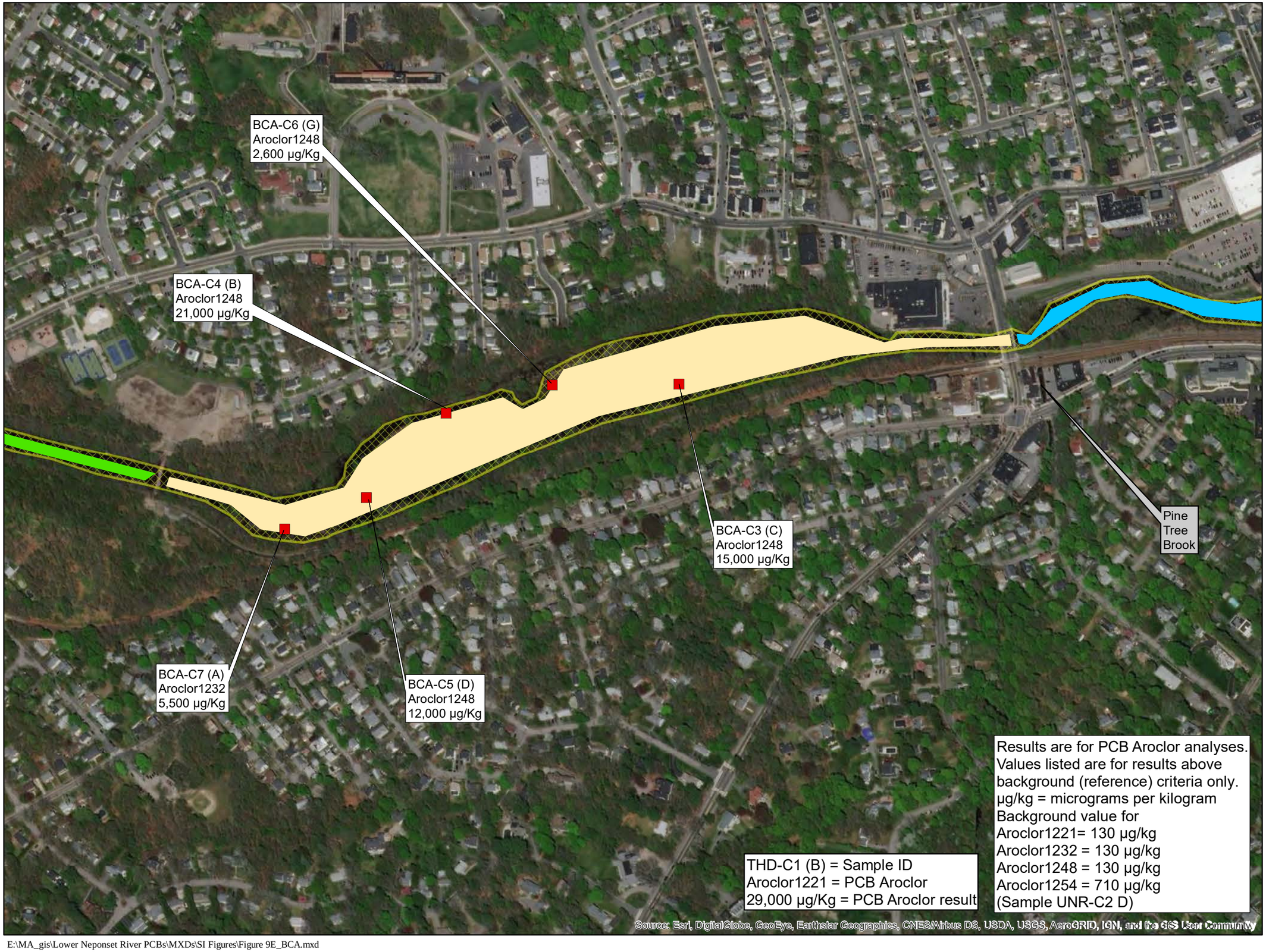

Figure 9E

2018 START Sediment Sample Locations and PCB Aroclor Results Map (Braided Channel Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

PCB Aroclor Results

- Background Sample
- Above Background
- Below Background

N

0 0.05 0.1
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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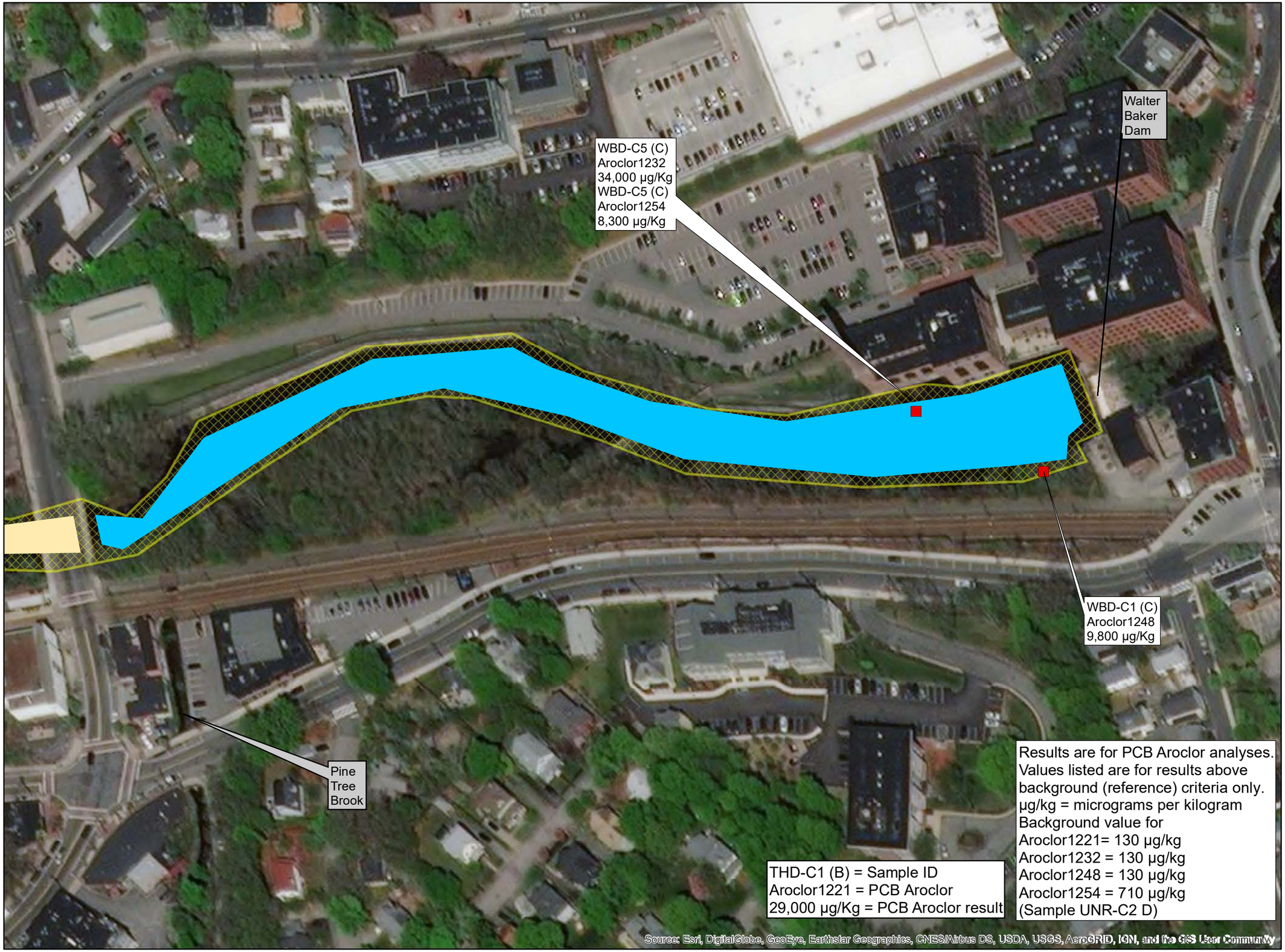

Figure 9F

2018 START Sediment Sample Locations and PCB Aroclor Results Map (Walter Baker Dam Area)

Lower Neponset River PCBs Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

PCB Aroclor Results

- Background Sample
- Above Background
- Below Background

0 0.0125 0.025

Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 9F_WBD.mxd

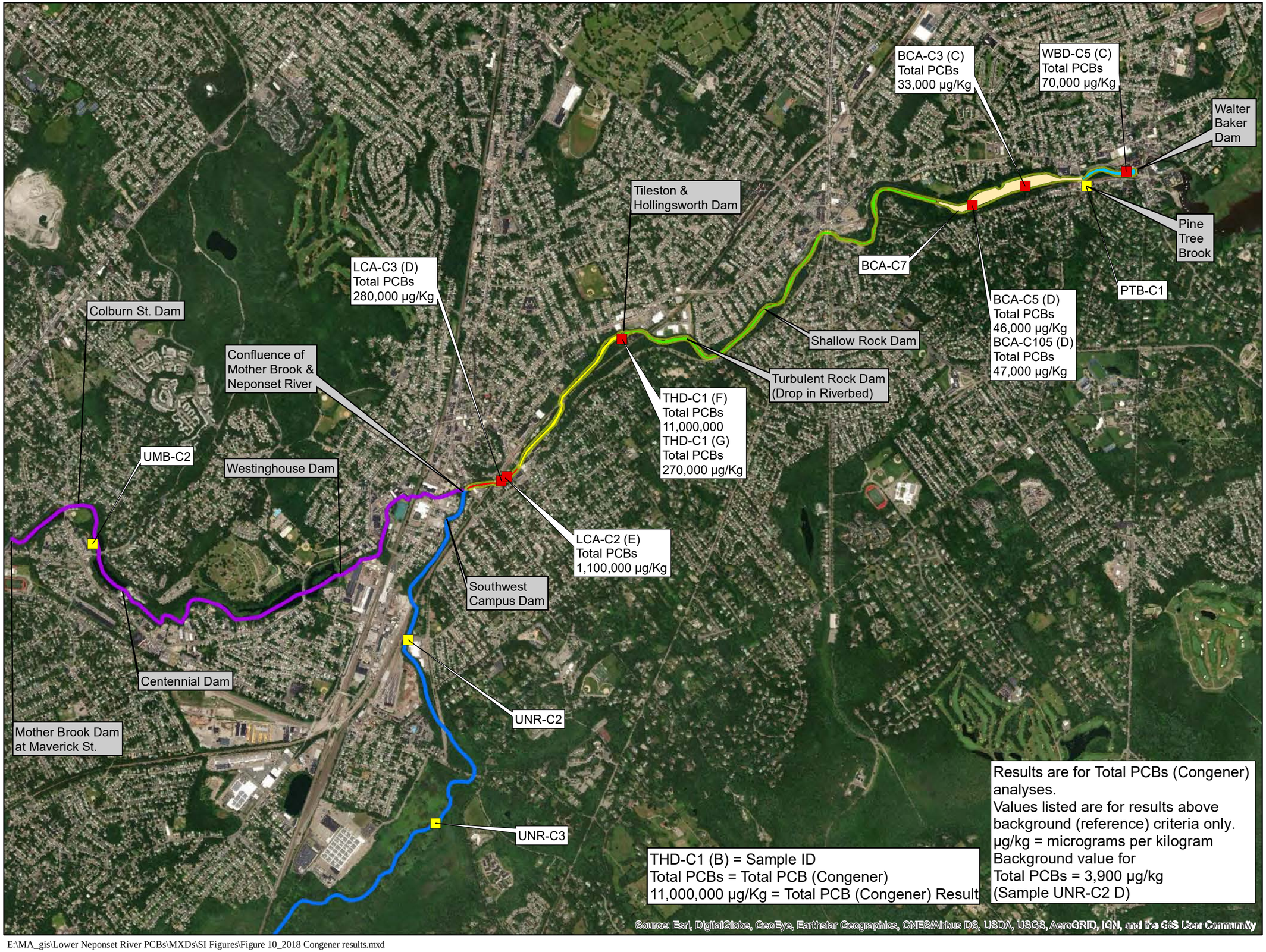

Figure 10

2018 START Sediment Sample Locations and Total PCBs (Congener) Results Map

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

Total PCBS (Congener) Results

- Background Sample
- Above Background
- Below Background

0 0.25 0.5
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

E:\MA_gis\Lower Neponset River PCBs\MXDs\SI Figures\Figure 10_2018 Congener results.mxd

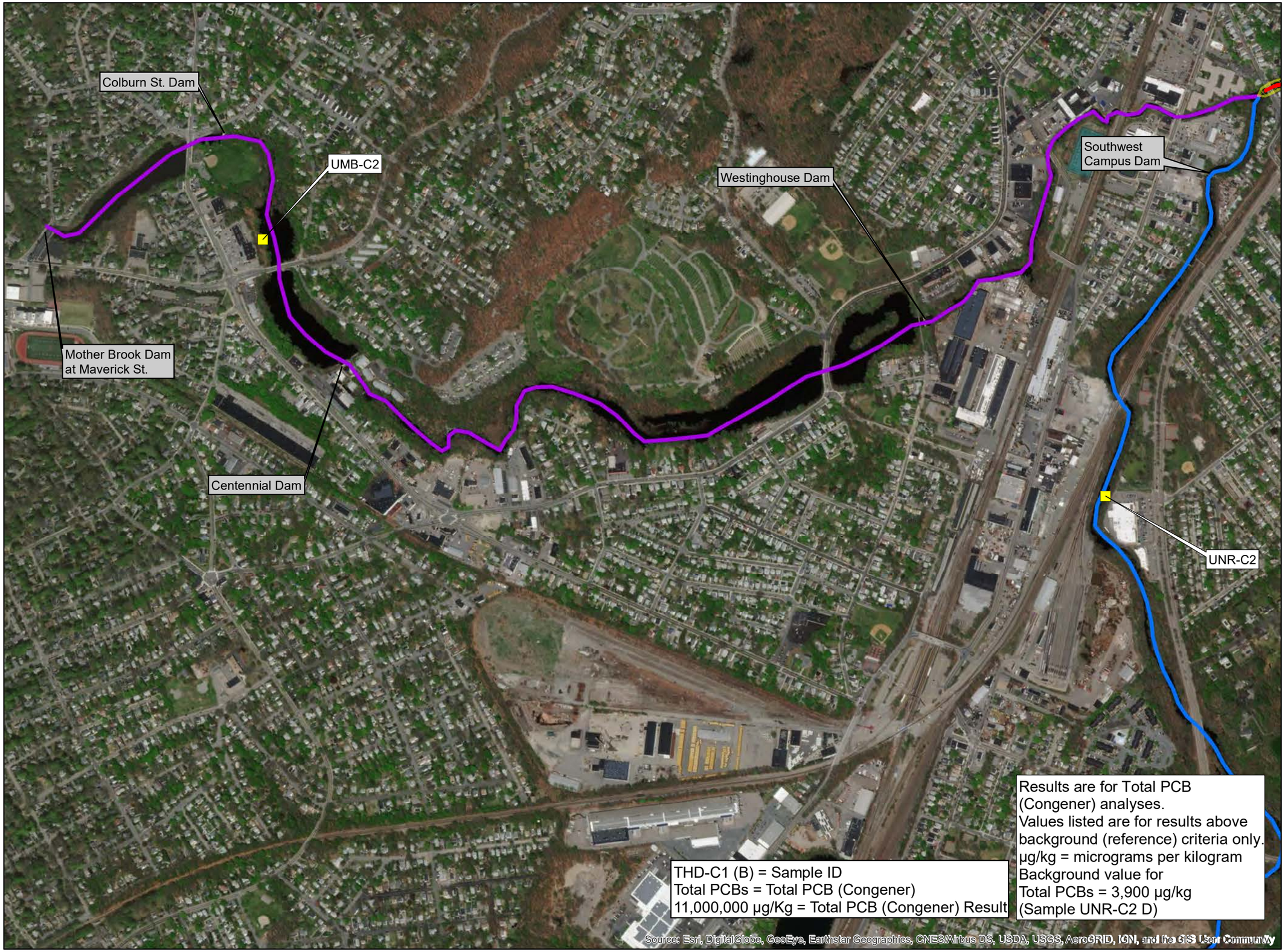

Figure 10A

2018 START Sediment Sample Locations and Total PCBs (Congener)Results Map (Mother Brook)

Lower Neponset River PCBs Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

Total PCBS (Congener) Results

- Background Sample
- Above Background
- Below Background

N

0 0.1 0.2

Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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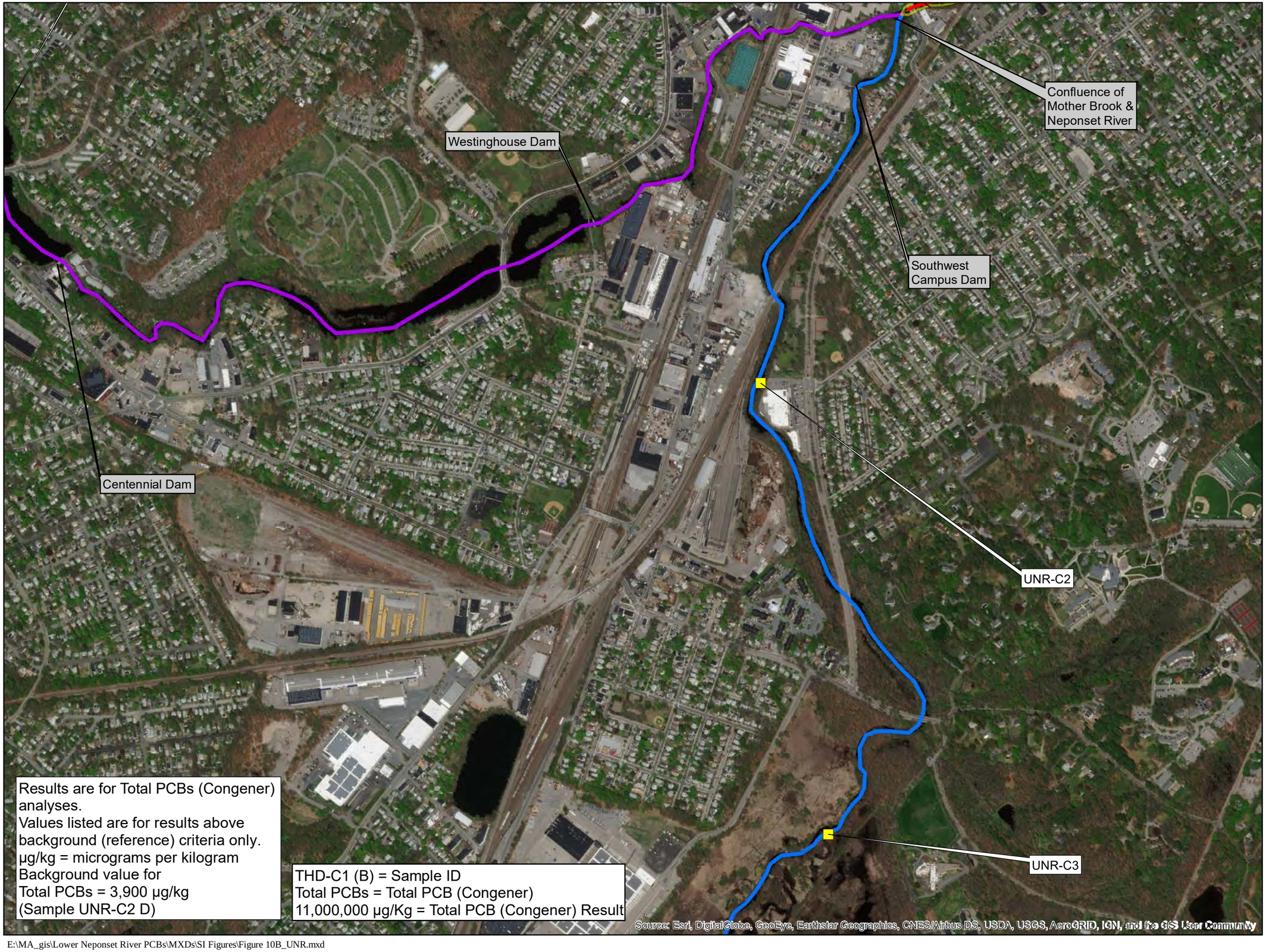

Figure 10B

2018 START Sediment Sample Locations and Total PCBs (Congener) Results Map (Upper Neponset River)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

Total PCBS (Congener) Results

- Background Sample
- Above Background
- Below Background

N

0 0.1 0.2
Miles

Results are for Total PCBs (Congener) analyses.
Values listed are for results above background (reference) criteria only.
µg/kg = micrograms per kilogram
Background value for
Total PCBs = 3,900 µg/kg
(Sample UNR-C2 D)

THD-C1 (B) = Sample ID
Total PCBs = Total PCB (Congener)
11,000,000 µg/Kg = Total PCB (Congener) Result

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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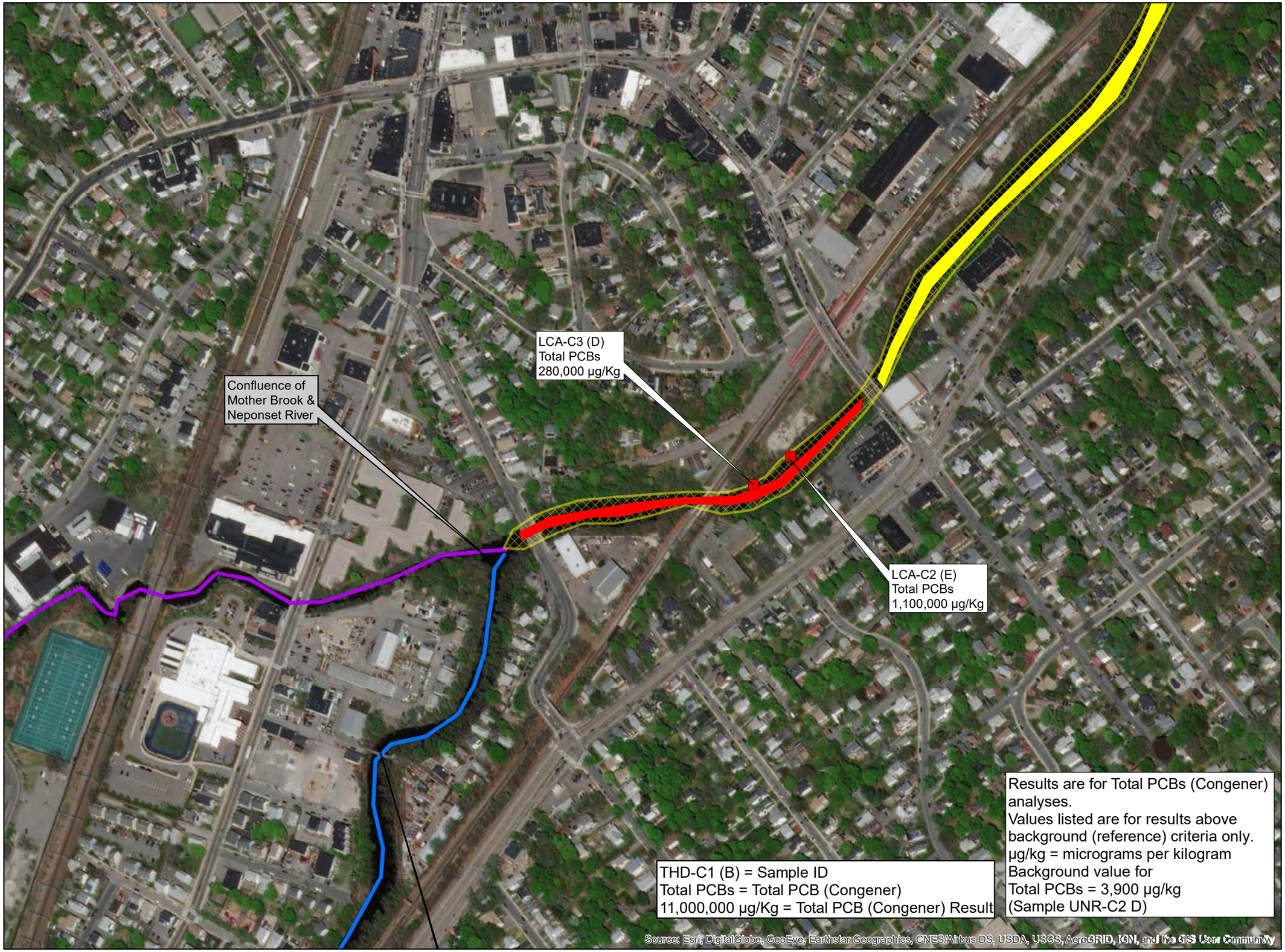

Figure 10C

2018 START Sediment Sample Locations and Total PCBs (Congener) Results Map (Fairmount/Mother Brook Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

Total PCBS (Congener) Results

- Background Sample
- Above Background
- Below Background

N

0 0.05 0.1
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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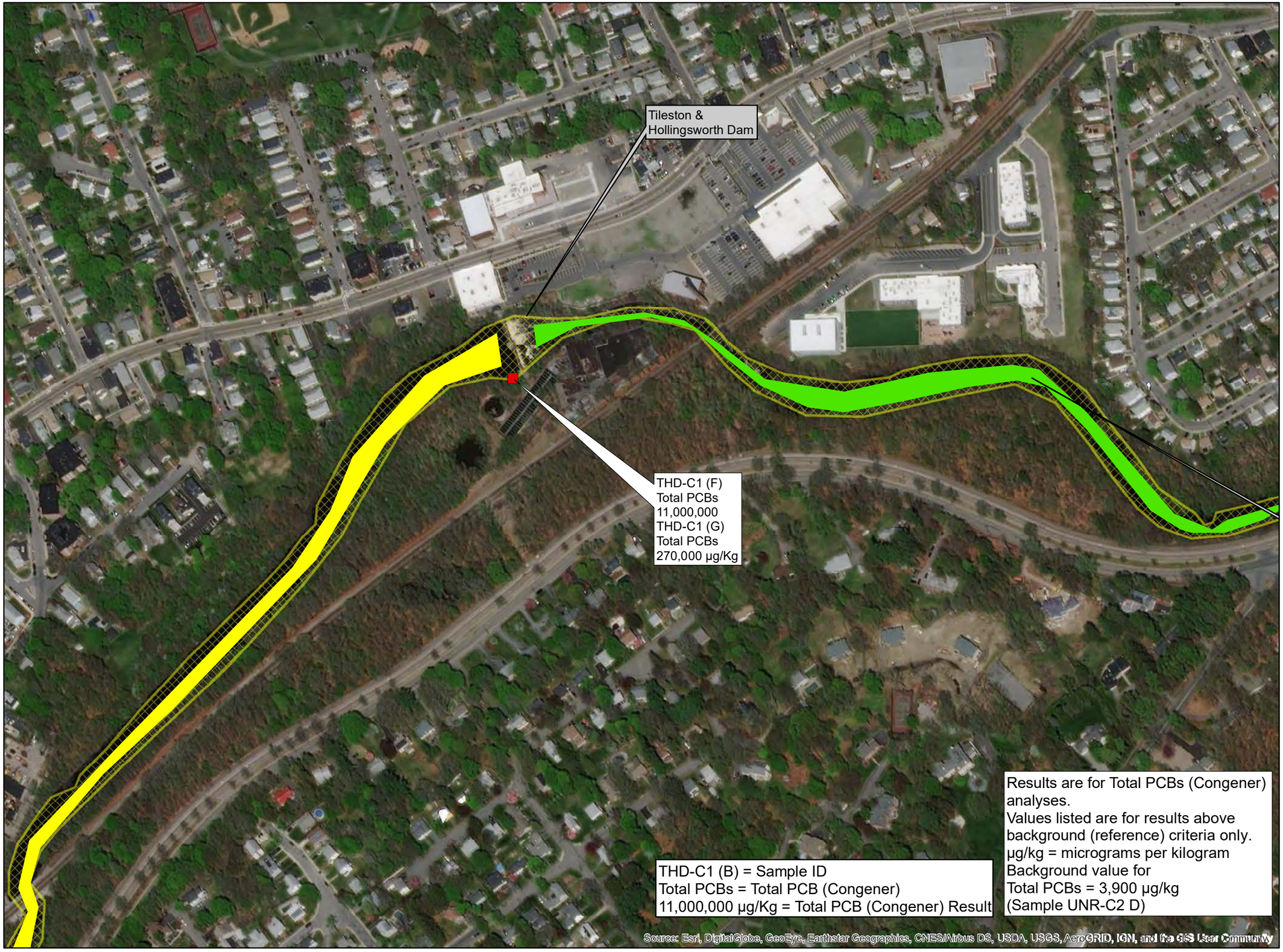

Figure 10D

2018 START Sediment Sample Locations and Total PCBs (Congener) Results Map (Tileston & Hollingsworth Dam and Blue Hill Ave Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

Total PCBS (Congener) Results

- Background Sample
- Above Background
- Below Background

N

0 0.045 0.09

Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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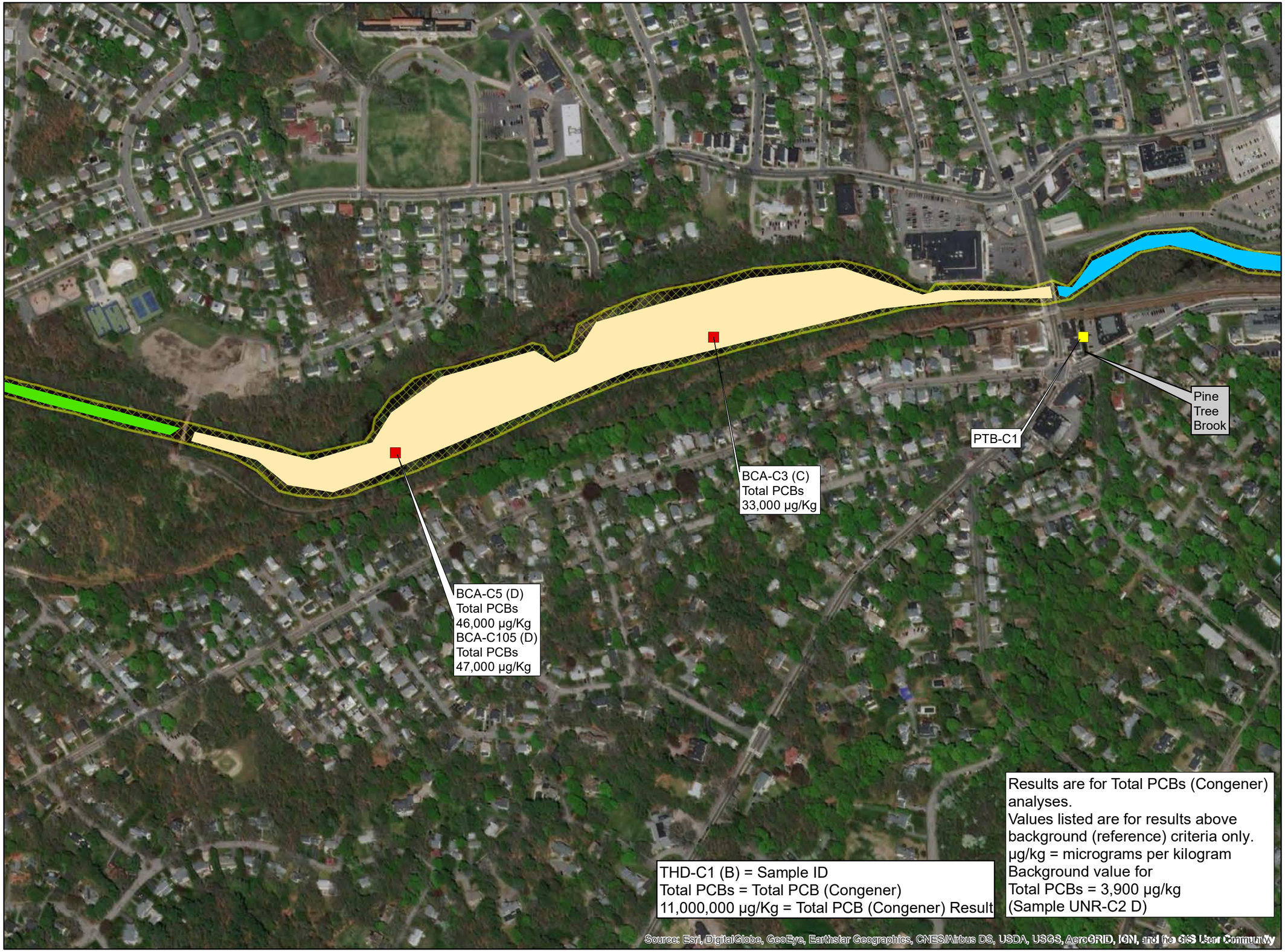

Figure 10E

2018 START Sediment Sample Locations and Total PCBs (Congener) Results Map (Braided Channel Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

Total PCBS (Congener) Results

- Background Sample
- Above Background
- Below Background

N

0 0.05 0.1
Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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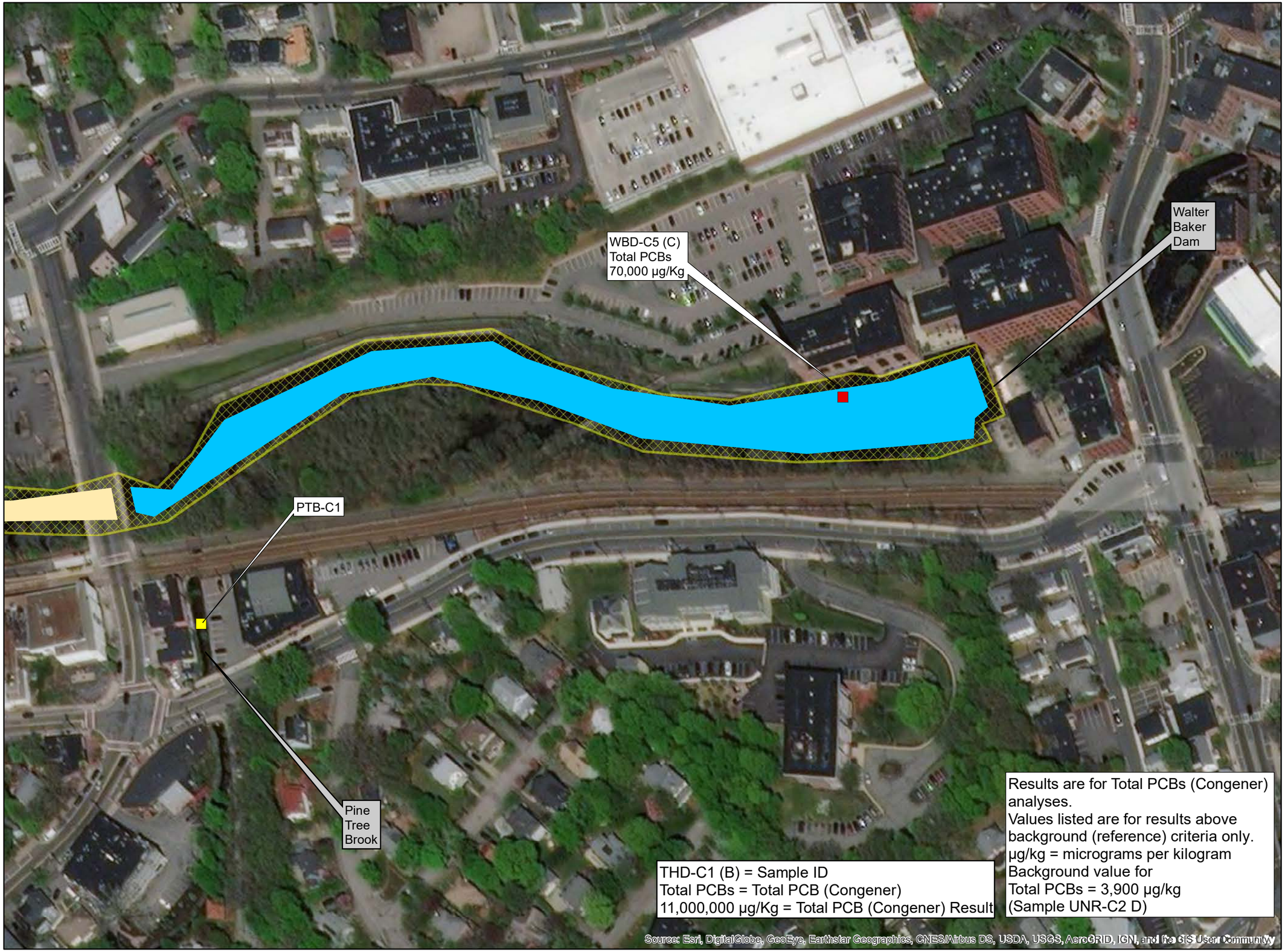

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Figure 10F

2018 START Sediment Sample Locations and Total PCBs (Congener) Results Map (Walter Baker Dam Area)

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Approx. Site Boundary
- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingsworth Dam Area
- Fairmount/Mother Brook Area
- Mother Brook to Charles
- Upper Neponset River

Total PCBS (Congener) Results

- Background Sample
- Above Background
- Below Background

N

0 0.0175 0.035

Miles

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

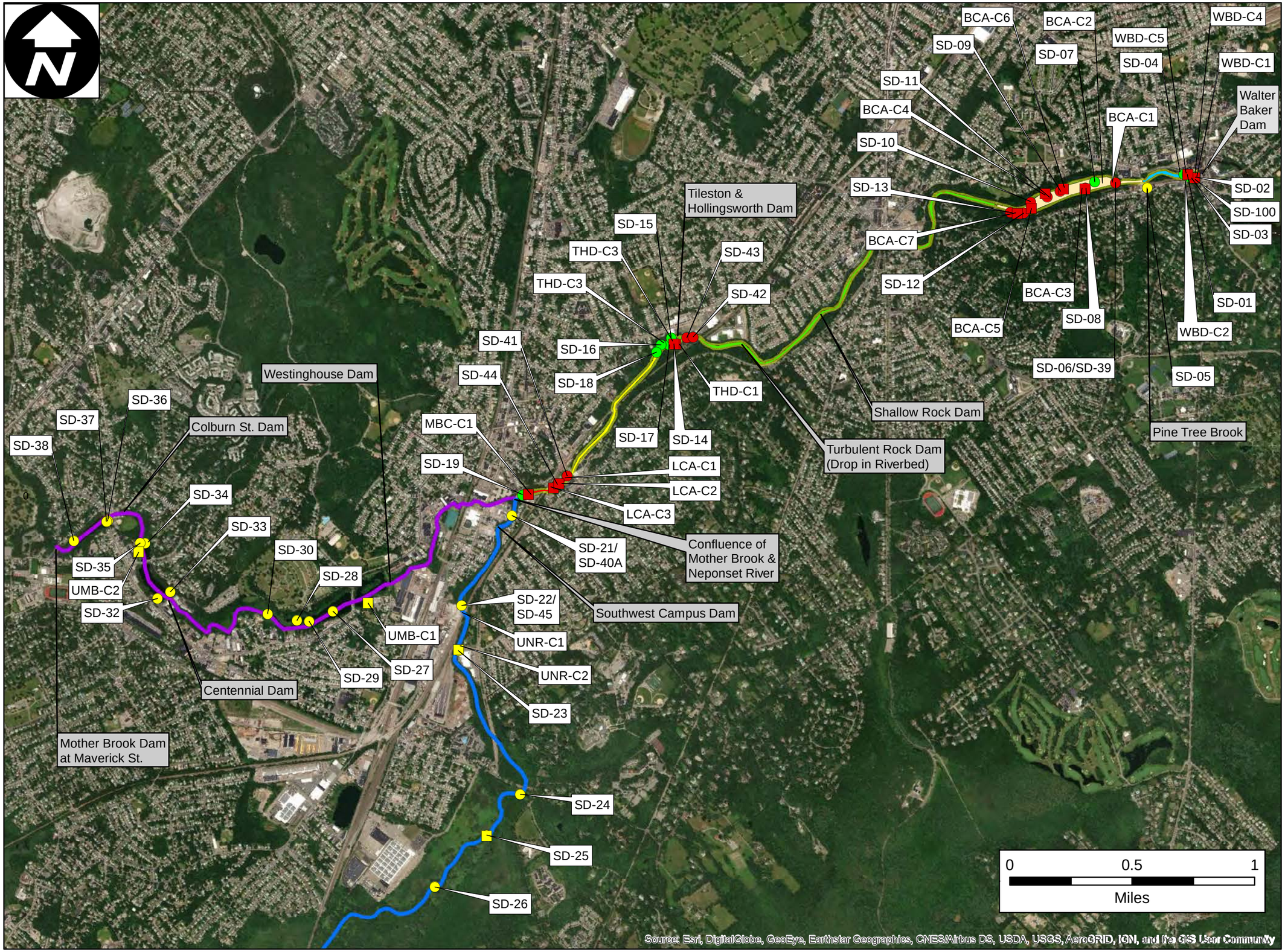

Figure 11

2017 and 2018 START Sediment Sample Locations and Analytical Summary Map

Lower Neponset River PCBs
Boston/Milton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) IV
Contract No. EP-S3-15-01

TDD Number:	TO1-01-16-06-0009
Created by:	B. Mace
Created on:	3 April 2017
Modified by:	B. Mace
Modified on:	14 February 2019

LEGEND

- Walter Baker Dam Area
- Braided Channel Area
- Blue Hills Avenue Area
- Tileston & Hollingswoth Dam Area
- Fairmount/Mother Brook Area
- Approx. Site Boundary
- Upper Neponset River
- Mother Brook to Charles

2017 START Sample Locations

- Background Sample
- Below Background
- Above Background

2018 START Sample Locations

- Background Sample
- Above Background
- Below Background

SD-09 Sample ID

Data Sources:

Imagery: ESRI, i-cubed, USDA FSA, USGS AEX, GeoEye, Getmapping, Aerogrid, IGP
Topos: MicroPath
All other data: START, MassGIS, MassDEP

WESTON SOLUTIONS

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ATTACHMENT B

LOWER NEPONSET RIVER PCBS SITE

PHOTODOCUMENTATION LOG - NOVEMBER 2017
PHOTODOCUMENTATION LOG - SEPTEMBER 2018

PHOTODOCUMENTATION LOG - NOVEMBER 2017
Lower Neponset River PCBs Site ● Boston, Massachusetts

SCENE: View of sample location SD-06 located in the Braided Channel portion of the Neponset River. Photograph taken facing northeast.
DATE: 13 November 2017 **TIME:** 1109 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

SCENE: View of sample locations SD-02 and SD-100 located behind the Walter Baker Dam. Photograph taken facing north.

DATE: 13 November 2017 **TIME:** 1309 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

PHOTODOCUMENTATION LOG – SEPTEMBER 2018
Lower Neponset River ● Boston, Massachusetts

SCENE: View of the Neponset River at the Walter Baker Dam (WBD) area.

DATE: 4 September 2018 **TIME:** 1012 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of a sediment core, WBD-C4, collected at the WBD Area.

DATE: 4 September 2018 **TIME:** 1012 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of sediment sample location WBD-C4. Photograph taken facing northeast.

DATE: 4 September 2018 **TIME:** 1012 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of sediment sample location WBD-C4. Photograph taken facing northwest.

DATE: 4 September 2018 **TIME:** 1016 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of sediment sample location WBD-C5. Photograph taken facing northwest.

DATE: 4 September 2018 **TIME:** 1047 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of sediment sample location WBD-C5. Photograph taken facing northwest.

DATE: 4 September 2018 **TIME:** 1047 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of sediment sample location BCA-C2. Photograph taken facing north.

DATE: 4 September 2018 **TIME:** 1316 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 8

SCENE: View of sediment sample location BCA-C1. Photograph taken facing east.

DATE: 4 September 2018 **TIME:** 1515 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 8

SCENE: Close-up of view of sediment sample location BCA-C1.

DATE: 4 September 2018 **TIME:** 1515 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 8

SCENE: View of sediment sample location BCA-C4. Photograph taken facing north.

DATE: 4 September 2018 **TIME:** 1720 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 8

SCENE: View of sediment sample location BCA-C6. Photograph taken facing south.

DATE: 5 September 2018 **TIME:** 0955 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 8

SCENE: View of the Neponset River, looking toward the Braided Channel Area (BCA). Photograph taken facing east.

DATE: 5 September 2018 **TIME:** 1050 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 8

SCENE: View of sediment sample location THD-C3, with the Tileston and Hollingsworth Dam (THD) in the background. Photograph taken facing northeast.
DATE: 5 September 2018 **TIME:** 1323 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 8

SCENE: View of sediment sample THD-C2 with the THD in the background. Photograph taken facing northeast.

DATE: 5 September 2018 **TIME:** 1331 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 8

SCENE: View of sediment sample THD-C1 with the THD in the background. Photograph taken facing east.

DATE: 5 September 2018 **TIME:** 1331 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 8

SCENE: View of sediment sample location LCA-C2. Photograph taken facing northeast.

DATE: 5 September 2018 **TIME:** 1627 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 8

SCENE: View of START personnel paddling towards sediment sample location UNR-C2. Photograph taken facing southwest.
DATE: 5 September 2018 **TIME:** 1627 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 8

SCENE: Close-up view of sediment sample location UMB-C2.

DATE: 6 September 2018 **TIME:** 1110 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of sediment sample location UMB-C2.

DATE: 6 September 2018 **TIME:** 1111 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of sediment sample location UMB-C2. Photograph taken facing north.

DATE: 6 September 2018 **TIME:** 1112 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of solid investigation-derived waste (IDW) drum, staged at the former Lewis Chemical staging area.

DATE: 10 September 2018 **TIME:** 1046 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of aqueous IDW drum, staged at the former Lewis Chemical staging area.

DATE: 10 September 2018 **TIME:** 1046 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of IDW drums, staged at the former Lewis Chemical staging area. Photograph taken facing north.

DATE: 10 September 2018 **TIME:** 1056 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of the locked former Lewis Chemical Plant gate following sampling activities. Photograph taken facing southwest.

DATE: 10 September 2018 **TIME:** 1102 hours
PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of the locked former Lewis Chemical Plant gate following sampling activities. Photograph taken facing southwest.

DATE: 10 September 2018 **TIME:** 1102 hours

PHOTOGRAPHER: Bill Mahany **CAMERA:** iPhone 8

SCENE: View of sample location SD-11 collected from downstream portion of large island in the Braided Channel portion of the Neponset River. Photograph taken facing north.
DATE: 13 November 2017 **TIME:** 0940 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-12 collected from Braided Channel portion of the Neponset River (Rice Islands). Photograph taken facing west.
DATE: 14 November 2017 **TIME:** 1017 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-13 collected from most upstream island in the Braided Channel. Photograph taken facing southeast.
DATE: 14 November 2017 **TIME:** 1047 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-01 located behind the Walter Baker Dam. Photograph taken facing east.

DATE: 14 November 2017 **TIME:** 1119 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

SCENE: View of sample location SD-42 located off the northeast corner of the former tannery/paper mill building, downstream from the Tileston & Hollingsworth (T&H) Dam. Photograph taken facing south.
DATE: 14 November 2017 **TIME:** 1253 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

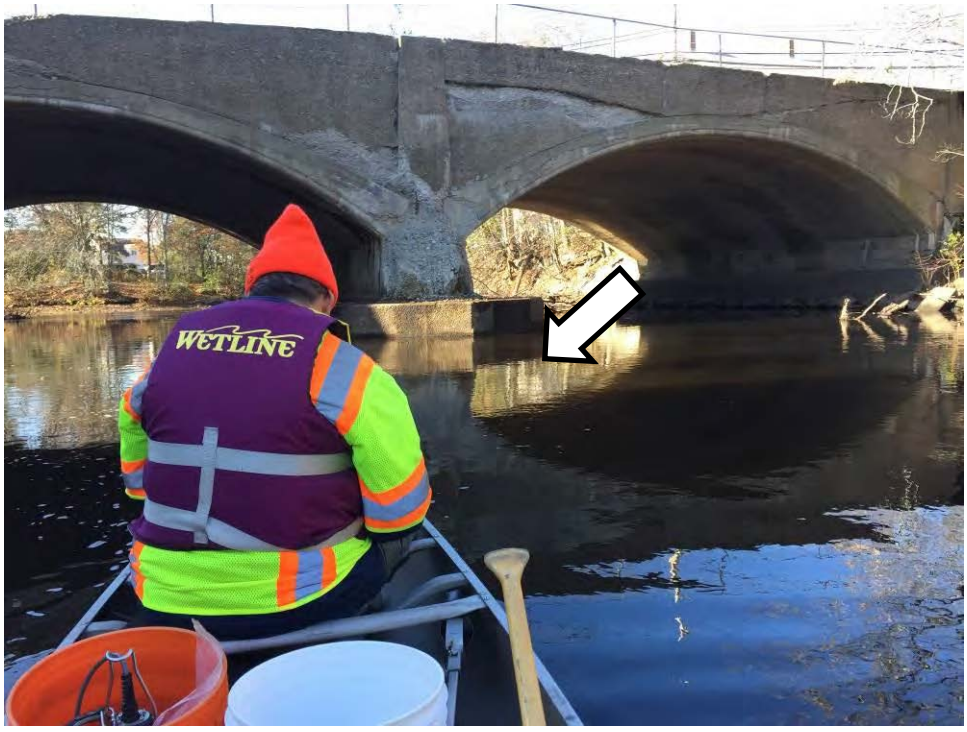
SCENE: Close-up view of the northeast corner of the former tannery/paper mill building. Photograph taken facing south.

DATE: 14 November 2017 **TIME:** 1332 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of pipes (raceway) along former tannery/paper mill building; note the T&H Dam on the right. Photograph taken facing southwest.
DATE: 14 November 2017 **TIME:** 1301 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-43 located immediately below pipes (raceway) along former tannery/paper mill building, downstream of the T&H Dam. Photograph taken facing south.
DATE: 14 November 2017 **TIME:** 1303 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-41, collected on northern bank of the Neponset River, at downstream section of the former Lewis Chemical Facility. Photograph taken facing east.
DATE: 14 November 2017 **TIME:** 1515 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6



SCENE: View of sample location SD-19 located below Dana Avenue Bridge, just downstream of the Neponset River/Mother Brook confluence. Photograph taken facing west.
DATE: 15 November 2017 **TIME:** 1022 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-21/SD-40 located on the Neponset River, just upstream from the Neponset River/Mother Brook confluence. Photograph taken facing southwest.
DATE: 15 November 2017 **TIME:** 1106 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-21/SD-40 with the Dana Avenue Bridge/confluence in the background. Photograph taken facing northeast.
DATE: 15 November 2017 **TIME:** 1107 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-23 located on the Upper Neponset River (UNR) behind the Stop & Shop. Photograph taken facing southwest.
DATE: 15 November 2017 **TIME:** 1357 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-22 located on the UNR, downstream of the railroad bridge and Martini Playground. Photograph taken facing south.
DATE: 15 November 2017 **TIME:** 1423 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of Mill Pond on Mother Brook, upstream of the Westinghouse Dam; note River Street Bridge in the background. Photograph taken facing east.
DATE: 15 November 2017 **TIME:** 1451 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

SCENE: View of sample location SD-27 located on Mill Pond on Mother Brook, upstream of the Westinghouse Dam (Fairview Cemetery in the background). Photograph taken facing north.
DATE: 15 November 2017 **TIME:** 1517 hours
PHOTOGRAPHER: **CAMERA:** iPhone 6

SCENE: View of sample location SD-28 located on northern portion of Mill Pond on Mother Brook, upstream of the Westinghouse Dam. Photograph taken facing south.
DATE: 15 November 2017 **TIME:** 1517 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

SCENE: View of sample location SD-24, located on the UNR approximately 120 feet upstream of Paul's Bridge. Photograph taken facing northeast.
DATE: 16 November 2017 **TIME:** 0822 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-29, located on the edge of a peninsula in Mill Pond on Mother Brook, upstream of the Westinghouse Dam. Photograph taken facing west.
DATE: 16 November 2017 **TIME:** 0832 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

SCENE: View of using the percussion corer at sample location SD-30 on Mill Pond on Mother Brook, upstream of the Westinghouse Dam. Photograph taken facing north.
DATE: 16 November 2017 **TIME:** 0901 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

SCENE: View of sample location SD-26 located on UNR; this is the most upstream sample on the Neponset River. Photograph taken facing northwest.
DATE: 16 November 2017 **TIME:** 1010 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of using the Vibecore Mini to collect sample SD-25. Photograph taken facing northeast.

DATE: 16 November 2017 **TIME:** 1108 hours
PHOTOGRAPHER: Paul Callahan **CAMERA:** iPhone 6

SCENE: View of sample location SD-25 located on the southeastern bank of the UNR. Photograph taken facing northwest.

DATE: 16 November 2017 **TIME:** 1118 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-33 located behind/upstream of the Centennial Dam on Mother Brook. Photograph taken facing northeast.
DATE: 16 November 2017 **TIME:** 1225 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

SCENE: View of sample location SD-32 located behind/upstream of the Centennial Dam on Mother Brook. Photograph taken facing southwest.
DATE: 16 November 2017 **TIME:** 1225 hours
PHOTOGRAPHER: Bonnie Mace **CAMERA:** iPhone 6

SCENE: View of sample location SD-34, located upstream of the Centennial Dam on Mother Brook. Photograph taken facing northeast.
DATE: 16 November 2017 **TIME:** 1440 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-35 located upstream of the Centennial Dam on Mother Brook. Photograph taken facing north.
DATE: 16 November 2017 **TIME:** 1441 hours
PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

SCENE: View of sample location SD-38 located upstream of the Colburn Dam on Mother Brook (most upstream sample location on Mother Brook). Photograph taken facing north.
DATE: 16 November 2017 **TIME:** 1443 hours
PHOTOGRAPHER: **CAMERA:** iPhone 6

SCENE: View of the two investigation-derived waste (IDW) drums (one solid, one liquid), just inside the gate at the former Lewis Chemical Facility. Photograph taken facing southwest.

DATE: 17 November 2017 **TIME:** 0804 hours

PHOTOGRAPHER: John Kelly **CAMERA:** iPhone 6

ATTACHMENT C

LOWER NEPONSET RIVER PCBS
SAMPLE DESCRIPTION AND RATIONALE TABLES
Samples Collected from 13 to 17 November 2017 and 4 to 6 September 2018

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-01	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition and emergent wetland area along the northern bank of the Neponset River, upstream of the Baker Dam. The source sample was collected from within the surface water impoundment area, approximately 200 feet upstream of the Baker Dam to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.27072 North Latitude 71.069635 West Longitude	---	10-20	D35204/A41G7	11/15/2017 9:00	PCBs Percent Solids TOC Grain Size	Sample was collected using a Vibe-core Mini on 11/14/17 at 1130 hours in 4' of water. Core length 60", recovery 20". Material described as dark gray silt and very fine sand, trace roots and clay. Specific conductance (µS/cm) = 354; Temp. (°C) = 3.86; Turbidity (NTU) = 1.95; pH = 7.00; DO (mg/L) = 7.94; PID = 0, water had a slight sheen.
SD-02	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area, adjacent an emergent wetland area. The sample is collected along the southern bank of the Neponset River, within the surface water impoundment area, approximately 60 feet upstream of the Baker Dam, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.270543 North Latitude 71.068988 West Longitude	---	8-16	D35205/A41G8	11/15/2017 10:15	PCBs Percent Solids TOC Grain Size	Sample was collected using a Vibe-core Mini on 11/14/17 at 0916 hours in 8-10' of water. Core length 60", recovery 16". Material described as dark gray silt, little coarse gravel, trace roots, and twigs. Specific conductance (µS/cm) = 344; Temp. (°C) = 3.83; Turbidity (NTU) = 4.52; pH = 7.03; DO (mg/L) = 14.01; PID = 0, water had a slight sheen.
SD-03	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area along the southern bank of the Neponset River, upstream of the Baker Dam. The source sample collected from within the surface water impoundment area, approximately 150 feet upstream of the Baker Dam, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.270495 North Latitude 71.069288 West Longitude	---	11-22	D35208/A41H1	11/15/2017 9:15	PCBs Percent Solids TOC Grain Size	Sample was collected using a percussion corer on 11/14/17 at 1030 hours in 5' of water. Core length 48", recovery 22". Material described as gray silt and very fine sand, trace roots and clay, slight petroleum odor. Specific conductance (µS/cm) = 348; Temp. (°C) = 3.61; Turbidity (NTU) = NR; pH = 7.03; DO (mg/L) = 8.63; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-04	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area along the northern bank of the Neponset River, within an emergent wetland area upstream of the Baker Dam. The source sample collected from within the surface water impoundment area, approximately 300 feet upstream of the Baker Da, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.270708 North Latitude 71.069901 West Longitude	---	12-24	D35209/A41H2	11/15/2017 9:30	PCBs Percent Solids TOC Grain Size	Sample was collected using a percussion corer on 11/14/17 at 1116 hours in 6' of water. Core length 48", recovery 24". Material described as dark gray silt and very fine sand, trace roots, clay and coarse gravel, slight petroleum odor. Specific conductance (µS/cm) = 350; Temp. (°C) = 3.91; Turbidity (NTU) = NR; pH = 6.92; DO (mg/L) = 15.48; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-05	Grab sediment samples collected using a hand auger, from an upstream area located within the Pine Tree Brook channel. Sample collected upstream of the Neponset Riverwalk Trail and the Railroad Bridge and downstream of the Eliot Street Bridge, to determine the presence of any Aroclor substances within this tributary to the Lower Neponset River and to document upstream reference/background levels for comparison purposes. 42.269934 North Latitude 71.072812 West Longitude	A	6-12		11/13/2017 10:52		Sample was collected using a hand auger. Material described as brown and orange brown very coarse-to-medium sand and coarse-to-fine gravel (rocks and glass fragments), trace silt, wet. PID = 0. Sample interval not collected for analysis.
		---	12-24	D35210/A41H3	11/13/2017 11:08	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger. Material described as brown coarse-to-fine gravel and very coarse-to-medium sand, trace silt, wet. Specific conductance (µS/cm) = 159.4 Temp. (°C) = 5.9; Turbidity (NTU) = 1.39; pH = 6.44; DO (mg/L)= NR; PID = 0.
SD-06	Grab sediment samples collected using a hand auger, from a fluvial deposition area on the downstream side of the most-downstream island adjacent to a wetland area within the braided channel segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.270231 North Latitude 71.075337 West Longitude	A	6-12		11/13/2017 11:35		Sample was collected using a hand auger. Material described as dark brown, very fine sand, some leaves and twigs, wet, spongy. PID = 0. Sample interval not collected for analysis.
		---	12-24	D35211/A41H4	11/13/2017 11:45	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 4-6" of water. Material described as dark gray, fine sand, little organics (twigs, leaves and roots), petroleum odor and an organic-decay odor, wet. PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-07	Grab sediment samples collected using a hand auger from a fluvial deposition area along the northeastern side of a large island covered with wetland vegetation. Sample collected from adjacent to the main river channel on the downstream side of the island within the braided channel segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.270299 North Latitude 71.077002 West Longitude	---	6-24	D35212/A41H5	11/13/2017 12:00	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 6-8" of water. Material described as gray very coarse to fine gravel & cobble, silt and clay, some medium to coarse sand, trace roots, leaves, and twigs, wet. PID = 0.
SD-08	Grab sediment samples collected using a hand auger, from a fluvial deposition area along the northwestern side of a large island covered with wetland vegetation. Sample collected from adjacent to the main river channel on the upstream side of the island within the braided channel segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.269934 North Latitude 71.077754 West Longitude	---	0-6	---	11/13/2017 12:12	---	Sample interval not sampled nor classified.
		A	6-30	D35275/A41P0	11/13/2017 12:15	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 12-14" of water. Material described as dark brown silt, trace clay and fine sand, roots, organic (spongy), little gravel.. PID = 0.
		---	30-52	D35213/A41H6	11/13/2017 12:46	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 12-14" of water. Material described as brown medium-to-coarse sand, trace fine-to-coarse gravel, wet. PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-09	Grab sediment samples collected using a hand auger, from a fluvial deposition within an emergent wetland area along the west-southwestern side of a large island covered with wetland vegetation. Sample collected from within a sub-channel leading to the adjacent to the main river channel on the upstream side of the island within the braided channel segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.269764 North Latitude 71.079771 West Longitude	---	0-12	---	11/13/2017 14:35	---	Sample was collected using a hand auger. Sample interval not collected for analysis nor classified.
		---	12-24	---	11/13/2017 14:43	---	Sample was collected using a hand auger. Sample interval not collected for analysis nor classified.
		---	24-36	D35214/A41H7	11/13/2017 15:15	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 14' of water. Material described as dark gray fine sand, little coarse-to-fine gravel. Specific conductance (µS/cm) = 690; Temp. (°C) = 4.8; Turbidity (NTU) = NR; pH = 6.35; DO = NR; PID = 0.
SD-10	Grab sediment samples collected using a hand auger, from a fluvial deposition and emergent wetland area. Sample collected along the west-northwestern side of a large island covered with wetland vegetation. Sample collected from within a sub-channel, along the north side of the island, leading to the main river channel on the downstream side of the island within the braided channel segment of the Lower Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.269102 North Latitude 71.082110 West Longitude	---	6-18	---	11/14/2017 8:55	---	Sample was collected using a hand auger. Sample interval not collected for analysis nor classified.
		---	18-30	---	11/14/2017 8:59	---	Sample was collected using a hand auger. Sample interval not collected for analysis nor classified.
		---	30-38	D35215/A41H8	11/14/2017 9:04	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 12' of water. Material described as dark gray silt, little clay, trace fine gravel and roots, wet, oily odor. Specific conductance (µS/cm) = 630; Temp. (°C) = 4.88; Turbidity (NTU) = 0; pH = 5.745; DO = 12.82; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-11	Grab sediment samples collected using a hand auger, from a fluvial deposition and emergent wetland area. This sample location is along the north-eastern portion of a large island covered with wetland vegetation. Sample collected from within a wetland area, surrounded by cattails (Bulrush) vegetation, along the north side of the island, on the downstream side of the island within the braided channel segment of the Lower Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.269427 North Latitude 71.080812 West Longitude	---	6-24	D35216/A41H9	11/14/2017 9:35	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in <4" of water. Material described as light gray to brown silt and very fine sand, trace clay and roots, slight petroleum odor, wet. Slight chemical-like odor smelling like naphthalene (mothball odor). PID = 0.
SD-12	Grab sediment samples collected using a hand auger, from a fluvial deposition and emergent wetland area along the north-eastern edge of the most-upstream island within the braided channel segment of the Lower Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.268474 North Latitude 71.08267 West Longitude	A	6-18	D35276/A41P1	11/14/2017 10:05	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in <12" of water. Material described as dark gray and brown silt and very fine sand, trace roots, wet, oily/petroleum odor. PID = NR.
		---	18-30	D35219/A41J2	11/14/2017 10:10	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in <12" of water. Material described as dark gray and brown silt, trace clay and coarse gravel and roots, oily/petroleum odor. PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-13	Grab sediment samples collected using a hand auger, from pa fluvial deposition area along the north-western edge of the most-upstream island within the braided channel segment of the Lower Neponset River. The island is covered by wetland vegetation and debris. Sample collected from within an emergent wetland area, along the north side of the island, on the upstream side of the island within the braided channel segment of the Lower Neponset River, approximately 300 feet downstream of the Neponset River Reservation Riverwalk Trail Bridge near Ryan's Playground (a.k.a. Harvest River Bridge), to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.268506 North Latitude 71.083752 West Longitude	---	6-18	---	11/14/2017 10:29	---	Sample was collected using a hand auger in <1" of water. Sample interval not sampled for analysis nor classified.
		---	18-36	D35220/A41J3	11/14/2017 10:44	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in <1" of water. Material described as gray silt and very fine sand, trace coarse gravel, roots and clay. PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
0	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area along the southern shoreline bank of the Neponset River, approximately 65 feet upstream of the Tileston & Hollingsworth Dam. The sample was collected within an emergent wetland area in the surface water impoundment of the Da, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.26081625 North Latitude 71.1106296 West Longitude	A	0-12	D35223/A41J6	11/15/2017 14:25	PCBs Percent Solids TOC Grain Size	Sample collect using a Vibe-core Mini on 11/15/17 at 0950 hours in 6" of water. Core length 60", recovery 38". Material described as follows: 0-12" - Dark brown silt, trace clay and roots, slight petroleum odor. 12-25" - Dark brown and gray silt and very fine sand, trace clay and roots, slight petroleum odor. 25-38" - Dark gray silt, little clay, trace very fine sand and roots, slight petroleum odor, wet. Specific conductance (µS/cm) = 605; Temp. (°C) = 5.47; Turbidity (NTU) = 0; pH = 5.9; DO (mg/L) = 8.07; PID = 0; slight sheen.
		B	12-25	D35222/A41J5	11/15/2017 14:15	PCBs Percent Solids TOC Grain Size	
		---	25-38	D35221/A41J4	11/15/2017 14:10	PCBs Percent Solids TOC Grain Size	
SD-15	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area along the northern shoreline of the Neponset River. The sample was collected within an emergent wetland area approximately 75 feet upstream Tileston & Hollingsworth Dam surface water impoundment, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.2611603 North Latitude 71.1108382 West Longitude	---	12-24	D35224/A41J7	11/15/2017 14:55	PCBs Percent Solids TOC Grain Size	Sample collected using a Vibe-core Mini on 11/15/17 at 1020 hours in 4' of water. Core length 60", recovery 24". Material described as dark gray silt, little clay, trace very fine sand and wood, slight petroleum odor. Specific conductance (µS/cm) = NR; Temp. (°C) = 5.59; Turbidity (NTU) = 0; pH = 5.67; DO (mg/L) = 11.20; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-16	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area approximately 10 feet off the northern bank of the Neponset River, within an emergent wetland area in the Tileston & Hollingsworth Dam surface water impoundment. The sample was collected approximately 350 feet upstream of the Dam, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.2607710 North Latitude 71.1116432 West Longitude	---	0-15	D35225/A41J8	11/15/2017 15:10	PCBs Percent Solids TOC Grain Size	Sample collected using a percussion corer on 11/15/17 at 1130 hours in 10' of water. Core length 48", recovery 15". Material described as dark brown silt, some clay, trace roots, slight petroleum odor. Specific conductance (µS/cm) = 609; Temp. (°C) = 5.78; Turbidity (NTU) = 0; pH = 5.888; DO (mg/L) = 16.21; PID = 0.
SD-17	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area along the southern shoreline of the Neponset River, within an emergent wetland area upstream of the Tileston & Hollingsworth Dam. The sample was collected approximately 200 feet upstream Tileston & Hollingsworth Dam, within an emergent wetland area in the surface water impoundment of the dam and downstream of the confluence of Mother Brook and the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. 42.2607566 North Latitude 71.1109988 West Longitude	---	0-17	D35225/A41J9	11/15/2017 14:40	PCBs Percent Solids TOC Grain Size	Sample collected using a Vibe-core Mini on 11/15/17 at 1010 hours in 16-18" of water. Core length 60", recovery 17". Material described as dark gray fine sand and silt, trace roots and leaves. Specific conductance (µS/cm) = 620; Temp. (°C) = 5.38; Turbidity (NTU) = 6.0; pH = 5.64; DO (mg/L) = 10.34; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-18	Grab sediment samples collected using a percussion corer sampler, from from a fluvial deposition area along the northern bank of the Neponset River, approximately 450 to 500 feet upstream of the Tileston & Hollingsworth Dam. Sample SD-18 collected from in an emergent wetland area within the surface water impoundment area of the dam and downstream of the confluence of Mother Brook and the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.2603297 North Latitude 71.1120111 West Longitude		13.5-27	D35226/A41K0	11/13/1715:25	PCBs Percent Solids TOC Grain Size	Sample collected using a percussion corer on 11/15/17 at 1230 hours in 15' of water. Core length 48", recovery 27". Material described as gray silt, little very fine sand and clay, slight petroleum odor. Specific conductance (µS/cm) = 606; Temp. (°C) = 5.66; Turbidity (NTU) = 0; pH = 5.9; DO (mg/L) = 10.14; PID = 0.
SD-19	Grab sediment samples collected using a hand auger, from a fluvial deposition area downstream of the confluence of Mother Brook and the Neponset River, adjacent to the downstream side of the Dana Street Bridge pier (pillar) and cutwater. A cutwater is the footer designed to ease the flow of the water around the bridge, reducing the damage caused by erosion or collisions with flood-borne debris and downstream of the confluence of Mother Brook and the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.251926 North Latitude 71.12277 West Longitude	---	6-22	D35227/A41K1	11/15/2017 10:55	PCBs Percent Solids TOC Grain Size	Sample collected using a hand auger in 34" of water. Material described as dark gray fine sand and silt, some coarse gravel, little organic material (leaves, twigs). Specific conductance (µS/cm) = 311; Temp. (°C) = 4.47; Turbidity (NTU) = 0; pH = 7.07; DO (mg/L) = 15.07; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-20	Grab sediment samples collected using a Piston Corer, Macro Core, or Vibe-core Mini sampler, from a location along Mother Brook immediately upstream of the confluence of Mother Brook and the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations.	Sample location not collected due to river bottom being armored.					
SD-21	Grab sediment samples collected using a hand auger and a Vibe-core Mini sampler, from a fluvial deposition area approximately 400 feet upstream of the confluence of Mother Brook and the Neponset River, along the northern bank of the Neponset River. The depositional area is located along the northwestern bank of the Neponset River within an emergent wetland area in a slake-water area, to determine the presence of any Aroclor substances in the Upper Neponset River and to document upstream reference/background levels for comparison purposes. 42.250687 North Latitude 71.123595 West Longitude	A	0-20	D35280/A41Q3	11/15/2017 10:53	PCBs Percent Solids TOC Grain Size	Sample collected using a Vibe-core Mini in 16" of water. Material described as dark gray very fine sand and silt, trace leaves and twigs. Specific conductance (µS/cm) = 343; Temp. (°C) = 4.49; Turbidity (NTU) = NR; pH = 7.11; DO (mg/L) = 9.70; PID = NR.
		---	20-40	D35230/A41K3	11/15/2017 11:00	PCBs Percent Solids TOC Grain Size	Sample collected using a hand auger (hand auger inserted into Vibe-core Mini boring) in 16" of water. Material described as dark gray silt and very fine sand, trace clay and twigs.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
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Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-22	Grab sediment samples collected using a hand auger, from a fluvial deposition/emergent wetland area approximately 500 feet downstream of the Neponset River Canoe Launch at Martini Playground/Shell Park and approximately 150 downstream of the MBTA railroad bridge over the Neponset River. The depositional area is located along the eastern bank of the Neponset River, west of the MBTA Railroad tracks and northeast of a Hot Mix Asphalt/Sand Batching operation, located at 1586 Hyde Park Avenue, to determine the presence of any Aroclor substances in the Upper Neponset River and to document upstream reference/background levels for comparison purposes. 42.245364 North Latitude 71.127638 West Longitude	A	6-24	D35283/A41Q6	11/15/2017 14:17	PCBs Percent Solids TOC Grain Size	Sample collected using a hand auger in 8" of water. Material described as brown fine-to-medium sand, trace silt, roots and leaves. Specific conductance (µS/cm) = 330; Temp. (°C) = 4.72; Turbidity (NTU) = NR; pH = 7.11; DO (mg/L) = 8.48; PID = 0.
		---	24-48	D35231/A41K4	11/15/2017 14:23	PCBs Percent Solids TOC Grain Size	Sample collected using a hand auger in 8" of water. Material described as dark gray very fine-to-fine sand and silt, trace twigs. PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
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Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-23	Grab sediment samples collected using a hand auger, from a fluvial deposition/emergent wetland area approximately 550 feet upstream of the Neponset River Canoe Launch at Martini Playground/Shell Park. The depositional area is located along the eastern bank of the Lower Neponset River, west of the Truman Park Plaza (1025 Truman Parkway)/behind the Stop & Shop building parking lot, and north of the MTBA Railroad Operations Readville Maintenance Facility/Railway Yard (located along Walcott Court) and a scrap recycling and transfer station (also located along Walcott Court), to determine the presence and concentration levels of any Aroclor substances in the Upper Neponset River and to document upstream ecological sediment reference/background levels for comparison purposes. 42.242709 North Latitude 71.127929 West Longitude	A	12-16	D35282/A41Q5	11/15/2017 13:40	PCBs Percent Solids TOC Grain Size	Sample collected using a hand auger in 8" of water. Material described as brown very fine sand, little silt, trace roots. Specific conductance (µS/cm) = 330; Temp. (°C) = 4.58; Turbidity (NTU) = NR; pH = 7.16; DO (mg/L) = 11.02; PID = 0.
		B	16-30	D35281/A41Q4	11/15/2017 13:48	PCBs Percent Solids TOC Grain Size	Sample collected using a hand auger in 8" of water. Material described as dark brown fine sand, little silt, trace roots. PID = 0.
		---	30-48	D35232/A41K5	11/15/2017 13:51	PCBs Percent Solids TOC Grain Size	Sample collected using a hand auger in 8" of water. Material described as dark gray silt, little very fine-to-fine sand, trace clay, slight oily/petroleum odor. PID = 0.
SD-24	Grab sediment samples collected using a hand auger, from a fluvial deposition area approximately 120 feet upstream of Paul's Bridge/Neponset Valley Parkway Bridge. The depositional area is located along the southern/eastern bank of the Lower Neponset River, within a PSS/PFO wetland area in the Fowl Meadow wetland area, to determine the presence of any Aroclor substances in the Upper Neponset River and to document upstream reference/background levels for comparison purposes. 42.234167 North Latitude 71.123047 West Longitude	---	0-18	D35233/A41K6	11/16/2017 8:15	PCBs Percent Solids TOC Grain Size	Sample collected using a hand auger in 14" of water. Material described as dark brown medium-to-very coarse sand, trace coarse-to-fine gravel, silt, and leaves. Specific conductance (µS/cm) = 606; Temp. (°C) = 5.71; Turbidity (NTU) = 0; pH = 6.12; DO (mg/L) = 15.65; PID = 0.
		B		D35234/A41K7	---	---	Interval not sampled.
		A		D35235/A41K8	---	---	Interval not sampled.

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SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
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Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-25	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area approximately 0.3 miles (1,600 feet) upstream of Paul's Bridge (Neponset Valley Parkway Bridge) and approximately 0.3 miles downstream of sediment sample location SD-26. The depositional area is located along the southern/eastern bank of the Lower Neponset River, within a PEM-PSS wetland area within the Fowl Meadow wetland area, to determine the presence and concentration levels of any Aroclor substances in the Upper Neponset River and to document upstream ecological sediment reference/background levels for comparison purposes. 42.231769 North Latitude 71.125731 West Longitude	---	19-38	D35236/A41K9	11/16/2017 13:00	PCBs Percent Solids TOC Grain Size	Sample collected using a Vibe-core Mini on 11/16/17 at 1113 hours in 8-12" of water. Core length 48", recovery 38". Material described as greenish-gray fine-to-very fine sand, trace silt, clay, and roots. Specific conductance (µS/cm) = 602; Temp. (°C) = 5.91; Turbidity (NTU) = 6.4; pH = 6.03; DO (mg/L) = 13.89; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-26	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area approximately 0.6 miles (3,200 feet) upstream of Paul's Bridge/Neponset Valley Parkway Bridge. The SD-26 sample location is a depositional area is located along the southern/eastern bank of the Lower Neponset River, within a PEM-PSS wetland area within the Fowl Meadow wetland, to determine the presence and concentration levels of any Aroclor substances in the Upper Neponset River and to document upstream ecological sediment reference/background levels for comparison purposes. 42.228704 North Latitude 71.129871 West Longitude	A	0-15	D35284/A41Q7	11/16/2017 12:35	PCBs Percent Solids TOC Grain Size	Sample collected using a Vibe-core Mini on 11/16/17 at 0950 hours in 10" of water. Core length 45", recovery 45". Material described as follows: 0-15" - Dark gray silt, some very fine sand, trace clay and roots. 15-30" - Dark gray silt, little clay, trace very fine sand and twigs, slight petroleum odor. 30-45" - Brownish-gray very fine sand, some silt, trace clay, slight petroleum odor. Specific conductance (µS/cm) = 605; Temp. (°C) = 5.60; Turbidity (NTU) = 14.2; pH = 6.04; DO (mg/L) = 12.83; PID = 0.
		B	15-30	D35285/A41Q8	11/16/2017 12:40	PCBs Percent Solids TOC Grain Size	
		---	30-45	D35237/A41L0	11/16/2017 12:45	PCBs Percent Solids TOC Grain Size	
SD-27	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area within the central channel of Mother Brook, adjacent an emergent wetland area upstream of the Westinghouse Dam and River Street Bridge. The sample collected from within Mother Brook, approximately 1,300 to 1,400 feet upstream of the Westinghouse Dam, to determine the presence of any Aroclor substances in Mother Brook and to document upstream reference/background levels for comparison purposes. 42.245070 North Latitude 71.137900 West Longitude	A	0-9	D35240/A41L3	11/16/2017 9:50	PCBs Percent Solids TOC Grain Size	Two co-located sediment sample cores collected using a percussion corer on 11/15/17 at 1456 hours in 6-7' of water. Core length 48", recovery 18". Material described as follows: 0-9" - Dark gray-ish brown silt, some clay, trace roots. 9-18" - Dark gray silt, some clay, trace roots. Specific conductance (µS/cm) = 562; Temp. (°C) = 6.41; Turbidity (NTU) = 6.8; pH = 5.98; DO (mg/L) = 12.84; PID = 0.
		---	9-18	D35238/A41L1	11/16/2017 10:00	PCBs Percent Solids TOC Grain Size	

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-28	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area along the northern bank of Mother Brook, within an emergent wetland area upstream of the Westinghouse Dam and the River Street Bridge. The sample collected from Mother Brook, approximately 2,100 feet upstream of the Westinghouse Dam, to determine the presence of any Aroclor substances in Mother Brook and to document upstream reference/background levels for comparison purposes. 42.2445303 North Latitude 71.1407906 West Longitude	---	0-11	---	---	---	Sample collected using percussion corer. Sample interval not collected for analysis nor classified.
		---	11-22	D35241/A41L4	11/16/2017 10:15	PCBs Percent Solids TOC Grain Size	Sample collected using a percussion corer on 11/15/17 at 1530 hours in 2-3' of water. Core length 48", recovery 22". Sample described as dark gray silt, some clay, trace roots (twigs). Specific conductance (µS/cm) = 569 Temp. (°C) = 5.72; Turbidity (NTU) = 9.0; pH = 5.97; DO (mg/L) = 11.57; PID = 0.
SD-29	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area along the northern bank of Mother Brook, within an emergent wetland area approximately 2,000 feet upstream of the Westinghouse Dam, to determine the presence and concentration levels of any Aroclor substances in Mother Brook and to document upstream reference/background levels for comparison purposes. 42.244478 North Latitude 71.139812 West Longitude	---	0-8.5	---	---	---	Sample collected using percussion corer. Sample interval not collected for analysis nor classified.
		---	8.5-17	D35242/A41L5	11/16/2017 10:50	PCBs Percent Solids TOC Grain Size	Sample collected using percussion corer on 11/16/17 at 0825 hours in 1.5' of water. Core length 48", recovery 17". Sample described as dark gray and brown silt, trace clay and roots. Specific conductance (µS/cm) = 293; Temp. (°C) = 4.52; Turbidity (NTU) = 11.22; pH = 7.188; DO (mg/L) = NR; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-30	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area, along the northern bank of Mother Brook, within an emergent wetland area approximately 3,000 feet upstream of the Westinghouse Dam, to determine the presence and concentration levels of any Aroclor substances in Mother Brook and to document upstream ecological sediment reference/background levels for comparison purposes. 42.244925 North Latitude 71.143106 West Longitude	---	11-22	D35243/A41L6	11/16/2015 11:00	PCBs Percent Solids TOC Grain Size	Sample collected using a percussion corer on 11/16/17 at 0901 hours in 3" of water. Core length 48", recovery 22". Material described as brown very fine sand, trace coarse gravel, wood debris, and silt. No water quality parameters recorded, PID = 0.
SD-31	Grab sediment samples collected using a Piston Corer, Macro Core, or Vibe-core Mini sampler, from a wetland area within Mother Brook, located adjacent/upstream of the Fairview Cemetery (45 Fairview Ave., Boston MA) and upstream of the Westinghouse Dam area, to determine the presence and concentration levels of any Aroclor substances in Mother Brook and to document upstream ecological sediment reference/background levels for comparison purposes.	---		N/A	---	---	Not sampled due to shift in locations upstream of Westinghouse Dam.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-32	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area along the southern bank of Mother Brook, within the dam impoundment upstream of the Centennial Dam. The sample collected from within Mother Brook, approximately 220 feet (west-northwest) upstream of the Centennial Dam, to determine the presence of any Aroclor substances in Mother Brook and to document upstream reference/background levels for comparison purposes. 42.245863 North Latitude 71.151872 West Longitude	---	10-20	D35245/A41L8	11/16/2017 14:15	PCBs Percent Solids TOC Grain Size	Sample collected using a percussion corer on 11/16/17 at 1150 hours in 5' of water. Core length 48", recovery 20". Material described as follows: 0-10" - Dark gray-to-black silt, trace clay and twigs/roots. 10-20" - Dark brown silt and very fine sand, trace coarse gravel and roots. Specific conductance (µS/cm) = 285; Temp. (°C) = 4.232; Turbidity (NTU) = 6.09; pH = 6.97; DO (mg/L) = NR; PID = 0.
		A	0-10	D35247/A41M0	11/16/2017 14:20	PCBs Percent Solids TOC Grain Size	
SD-33	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area along the northern bank of Mother Brook, approximately 150 feet upstream of the Centennial Dam, to determine the presence of any Aroclor substances in Mother Brook and to document upstream reference/background levels for comparison purposes. 42.246252 North Latitude 71.150848 West Longitude	---	10.5-21	D35248/A41M1	11/16/2017 13:50	PCBs Percent Solids TOC Grain Size	Sample collected using a percussion corer on 11/16/17 at 1220 hours in 5' of water. Core length 48", recovery 21". Material described as brown and dark gray silt, little coarse gravel (rocks, glass), trace roots and clay. Specific conductance (µS/cm) = 285; Temp. (°C) = 4.67; Turbidity (NTU) = 6.1; pH = 7.53; DO (mg/L) = 14.9; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-34	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area within a PEM wetland area approximately 400 feet upstream of Sawmill Lane Bridge over Mother Brook (Dedham, MA). The depositional area is located along the northeastern bank of the Mother Brook, within the Stone Mill Dam impoundment area. Sample location is within the wetland to the west of 85 Emmett Avenue, to determine the presence and concentration levels of any Aroclor substances in Mother Brook and to document upstream ecological sediment reference/background levels for comparison purposes. 42.249143 North Latitude 71.152853 West Longitude	---	5-17	D35249/A41M2	11/16/2017 15:15	PCBs Percent Solids TOC Grain Size	Sample collected using a Vibe-core Mini on 11/16/17 at 1345 hours. Core length 60", recovery 30". Material described as dark gray silt, some very fine sand, trace clay and roots. Specific conductance (µS/cm) = 500; Temp. (°C) = 6.75; Turbidity (NTU) = 162; pH = 6.08; DO (mg/L) = 13.37; PID = 0.
SD-35	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area within a PEM wetland area approximately 420 feet upstream of Sawmill Lane Bridge over Mother Brook (Dedham, MA) and approximately 110 feet west of START sediment sample location SD-35. The depositional area is located along the southeastern perimeter of a PEM wetland along the northwestern bank of the Mother Brook, within the Stone Mill Dam impoundment area. Sample location is along a peninsula covered by wetlands to the west of 85 Emmett Avenue, and northeast of Dedham Ladder 2/Engine 3 fire house at 230 Bussey Street Dedham MA, to determine the presence and concentration levels of any Aroclor substances in Mother Brook and to document upstream ecological sediment reference/background levels for comparison purposes. 42.249164 North Latitude 71.153253 West Longitude	---	0-16	D35250/A41M3	11/16/2017 15:35	PCBs Percent Solids TOC Grain Size	Sample collected using a Vibe-core Mini on 11/16/17 at 1411 hours in 10-12" of water. Core length 60", recovery 18". Material described as dark brown silt and very fine sand, trace roots and clay. No water quality parameters were recorded, PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-36	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition /emergent wetland area along the west side of Bussey Street extension and bridge crossing over Mother Brook, within the surface water impoundment for Colburn Dam. The sample collected from within Mother Brook, approximately 30 feet west of Bussey Street and 400 feet upstream of the Colburn Dam, to determine the presence of any Aroclor substances in Mother Brook and to document upstream reference/background levels for comparison purposes. 42.250466 North Latitude 71.155826 West Longitude	A	0-12	D35286/A41Q9	11/16/2017 16:40	PCBs Percent Solids TOC Grain Size	Two co-located sediment sample cores collected using a percussion corer on 11/16/17 at 1345 hours in 10' of water. Core length 48", recovery 35". Material described as follows: 0-12" - Dark gray silt and clay, trace roots. 12-14" - Dark gray silt, some clay, trace roots. 14-35" - Dark gray silt, trace roots (peat-like). Specific conductance (µS/cm) = 274; Temp. (°C) = 4.66; Turbidity (NTU) = 0; pH = 7.23; DO (mg/L) = 14.83; PID = 0.
		B	12-24	D35287/A41R0	11/16/2017 16:35	PCBs Percent Solids TOC Grain Size	
		---	24-35	D35251/A41M4	11/16/2017 16:30	PCBs Percent Solids TOC Grain Size	
SD-37	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition/ emergent wetland area along the west side of Bussey Street extension and bridge crossing over Mother Brook, within the surface water impoundment for Colburn Dam. The sample collected from within Mother Brook, approximately 35 feet southwest of sediment sample location SD-36; 55 feet west of Bussey Street and 430 feet upstream of the Colburn Dam, to determine the presence and concentration levels of any Aroclor substances in Mother Brook and to document upstream ecological sediment reference/background levels for comparison purposes. 42.25043634 North Latitude 71.1559292 West Longitude	---	11-22	D35252/A41M5	11/16/2017 16:05	PCBs Percent Solids TOC Grain Size	Sample collected using a percussion corer on 11/16/17 at 1310 hrs in 10' of water. Core length 40", recovery 22". Material described as dark gray silt, trace coarse gravel and clay and roots. Specific conductance (µS/cm) = 162; Temp. (°C) = 4.45; Turbidity (NTU) = 24.4; pH = 7.33; DO (mg/L) = 11.29; PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-38	Grab sediment samples collected using a percussion corer sampler, from a fluvial deposition area along the northern bank of Mother Brook, within an emergent wetland area upstream of the Colburn Dam. The sample collected from within Mother Brook, approximately 900 feet west of Bussey Street Bridge and 1,200 feet upstream of the Colburn Dam, to determine the presence of any Aroclor substances in Mother Brook and to document upstream reference/background levels for comparison purposes. 42.24931 North Latitude 71.158526 West Longitude	---	10-20	D35253/A41M6	11/16/2017 16:06	PCBs Percent Solids TOC Grain Size	Sample collected using a percussion corer on 11/16/17 at 1455 hrs in 4' of water. Core length 48", recovery 20". Material described as dark gray silt, trace clay. Specific conductance (µS/cm) = 280; Temp. (°C) = 4.46; Turbidity (NTU) = 3.1; pH = 7.58; DO (mg/L) = 15.26; PID = 0.
SD-39	Field duplicate of SD-06, collected for quality control.	---	12-24	D35254/A41M7	11/13/2017 11:45	PCBs Percent Solids TOC Grain Size	See SD-06.
SD-40	Field duplicate of SD-21A, collected for quality control.	A	0-18	D35255/A41M8	11/15/2017 10:53	PCBs Percent Solids TOC Grain Size	See SD-21A.
SD-41	Grab sediment samples collected using a hand auger, from a fluvial deposition area along the northern bank of the Lower Neponset River, slightly downstream of the former Lewis Chemical facility and approximately 50-55 ft. upstream of Fairmont Avenue Bridge spanning the river, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.253024 North Latitude 71.119186 West Longitude	---	0-12	D35256/A41M9	11/14/2017 15:03	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 14-17" of water. Material described as dark gray fine sand, some silt, coarse gravel, cobbles, trace roots and debris (glass). No water quality parameters were recorded, PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-42	Grab sediment samples collected using a hand auger, from a fluvial deposition area along the southern bank of the Lower Neponset River, approximately 150 feet downstream of the pipe discharge (possible raceway) location and approximately 370 feet downstream of the Tileston & Hollingsworth Dam. Sample location in the river slightly north-northwest (approximately 10 ft.) off the line that extents northwest parallel to the eastern wall of the dilapidated former paper mill building, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.261234 North Latitude 71.109095 West Longitude	---	0-12	D35257/A41N0	11/14/2017 13:26	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 12-14" of water. Material described as dark brown silt, trace clay and coarse gravel, roots, twigs, slight oily odor. No water quality parameters were recorded, PID = 0.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-43	Grab sediment samples collected using a hand auger, from a fluvial deposition area along the southern bank of the Lower Neponset River, immediately downstream of the 24-inch pipe discharge (possible raceway) location and approximately 230 feet downstream of the Tileston & Hollingsworth Dam. Sample location in the Neponset River down gradient the discharge point for the 24 inch pipe running parallel to the bank slope. This is also down gradient of the location where two sections of the former paper mill building meet (3-story and 2-story sections), and several the pipes extend out of the building. It appears that the bank slope beneath this section of the Riverbank has been washed of most of its finer soil particles by the discharge from the pipes, and downstream of the confluence of Mother Brook and the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.26117 North Latitude 71.109601 West Longitude	---	0-12	D35258/A41N1	11/14/2017 13:46	PCBs Percent Solids TOC Grain Size	Sample was collected using a hand auger in 24" of water. Material described as gray fine sand and silt, some coarse-to-fine gravel, trace roots. No water quality parameters were recorded, PID = 0.
SD-44	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition area along the northern bank of the Lower Neponset River, adjacent/slightly upstream of the former Lewis Chemical facility and approximately 350 ft. upstream of Fairmont Avenue Bridge spanning the river, and downstream of the confluence of Mother Brook and the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.252515 North Latitude 71.119975 West Longitude	---	13-26	D35259/A41N2	11/15/2017 10:00	PCBs Percent Solids TOC Grain Size	Sample was collected using a Vibe-core Mini on 11/14/17 at 1500 hours in 2' of water. Core length 60", recovery 26". Sample described as gray fine -to-very fine sand, some silt, trace clay and roots, slight petroleum odor. Specific conductance (µS/cm) = 352; Temp. (°C) = 4.69; Turbidity (NTU) = 40.3; pH = 6.97; DO (mg/L) = 9.61; PID = 0, slight petroleum odor and slight sheen when core removed from water.
SD-45	Field duplicate of SD-22, collected for quality control.	---	24-48	D35260/A41N3	11/15/2017 14:23	PCBs Percent Solids TOC Grain Size	See SD-22.

TABLE C-1

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (inches)	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
SD-100	Grab sediment samples collected using a Vibe-core Mini sampler, from a fluvial deposition and emergent wetland area along the southern bank of the Neponset River, upstream of the Baker Dam. The source sample was collected from within the surface water impoundment area, approximately 90 feet upstream of the Baker Dam, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. 42.270481 North Latitude 71.069031 West Longitude	A	0-6	D35277/A41P2	11/14/2017 14:20	PCBs Percent Solids TOC Grain Size	Sample was collected using a Vibe-core Mini in 18-24" of water. Core length 60", recovery 32". Sample described as follows: 0-11" - Gray silt, little leaves, twigs, little gravel, trace clay. 11-22" - Gray silt and very fine sand, trace twigs, roots. 22-32" - Gray silt and very fine sand, trace roots. No water quality parameters recorded, PID = 0, slight petroleum odor.
		B	12-22	D35278/A41P3	11/14/2017 14:23	PCBs Percent Solids TOC Grain Size	
		C	23-32	D35279/A41P4	11/14/2017 14:26	PCBs Percent Solids TOC Grain Size	

Temp (°C) = Temperature (degrees Celsius)
Spec. Cond. (µS/cm) = Specific conductance (micro Siemens per centimeter)
NTU = Nephelometric Turbidity Units
CLP = Contract Laboratory Program
DAS = Delivery of Analytical Services
CGI/O_2 (LEL/%) = Combustible Gas Indicator/Oxygen Meter (Lower Explosive Limit/Percent)
PID = Photoionization Detector
COC = Chain of Custody
ppm = parts per million
No. = Number
NR = Not Recorded.
* = Below the sediment/water interface.
" = inches.
' = feet.

Analyses: PCBs = Aroclors by SOM02.3
TOC = Total Organic Carbon (SW-846 9060/Lloyd Kahn)
Grain Size = ASTM 422 Grain Size with Hydrometer

TABLE C-2

AQUEOUS QUALITY ASSURANCE/QUALITY CONTROL SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017 and 4 THROUGH 6 SEPTEMBER 2018

Station Location	DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Aqueous QA/QC				
RB-01	D35261/A41N4	11/14/2017 12:25	PCBs TOC	Sediment/Source sampling equipment (hand auger) rinsate blank sample, collected for quality control.
RB-02	D35262/A41N5	11/14/2017 15:40	PCBs TOC	Sediment/Source sampling equipment (hand auger) rinsate blank sample, collected for quality control.
RB-03	D35263/A41N6	11/15/2017 15:00	PCBs TOC	Sediment/Source sampling equipment (hand auger) rinsate blank sample, collected for quality control.
RB-04	D35264/A41N7	11/16/2017 16:30	PCBs TOC	Sediment/Source sampling equipment (hand auger) rinsate blank sample, collected for quality control.
RB-05	D35265/A41N8	11/16/2017 16:15	PCBs TOC	Sediment/Source sampling equipment (percussion corer) rinsate blank sample, collected for quality control.
RB-01	D35487/PA41S5	9/4/2018 17:00	CLP 209 Congeners TOC	Sediment/Source sampling equipment (hand auger) rinsate blank sample, collected for quality control.
RB-02	D35488/PA41S6	9/5/2018 12:00	CLP 209 Congeners TOC	Sediment/Source sampling equipment hand auger) rinsate blank sample, collected for quality control.
RB-03	D35489/PA41S7	9/6/2018 12:00	CLP 209 Congeners TOC	Sediment/Source sampling equipment (hand auger) rinsate blank sample, collected for quality control.

DAS = Delivery of Analytical Services
CLP = Contract Laboratory Program
COC = Chain of Custody
No. = Number
QA/QC = Quality Assurance/Quality Control

Analyses: PCBs = Aroclors by SOM02.3
TOC = Total Organic Carbon (SW-846 9060/Lloyd Kahn)

TABLE C-3

PERFORMANCE EVALUATION SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
13 THROUGH 17 NOVEMBER 2017 and 4 THROUGH 6 SEPTEMBER 2018

Station Location	CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Performance Evaluation Samples				
AS1591	A41Q2	11/15/17 8:30	Aroclors	Solid PE sample for Aroclors (sediment samples).
AS1667	A41P5	11/17/17 9:00	Aroclors	Solid PE sample for Aroclors (sediment samples).
AS1900	A41P6	11/17/17 9:00	Aroclors	Solid PE sample for Aroclors (sediment samples).
C0128	PA41T1	9/7/18 10:30	209 CBCs	Solid PE sample for Congeners (sediment samples).

COC = Chain of Custody
No. = Number

Analyses: Aroclors = Aroclors by SOM02.3
209 CBCs = Contract Laboratory Program (CLP) 209 Congeners (HRSM01.2 for PCB Congeners)

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MATRIX: Sediment/Source							
WBD-C1	Grab sediment samples collected using a sludge sampler/hand auger, from a fluvial deposition and emergent wetland area along the southern bank of the Neponset River, upstream of the Baker Dam. The source sample was collected from within the surface water impoundment area, approximately 100 feet upstream of the Baker Dam to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. North Latitude West Longitude	A	0-1	0134LN-0001	9/4/2018 10:05	Field PCBs	Sample was collected using a sludge sampler/hand auger in 6" of water. Material described as: 0-1' brown fine SAND and SILT, some organics (leaves, sticks, roots). PID = 0. 1-2' brown fine SAND and SILT, trace organics. PID = 0. 2-3' brown fine SAND and SILT. PID = 1, water had a slight oil sheen and odor when augered. 3-3.5' brown fine SAND and SILT. PID = 0. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9.
		B	1-2	0134LN-0002	9/4/2018 10:10	Field PCBs	
		C	2-3	0134LN-0003	9/4/2018 10:20	Field PCBs PCBs	
		D	3-3.5	0134LN-0004	9/4/2018 10:25	Field PCBs	
WBD-C2	Grab sediment samples collected using a sludge sampler/hand auger, from a fluvial deposition and emergent wetland area along the southern bank of the Neponset River, upstream of the Baker Dam. The source sample was collected from within the surface water impoundment area, approximately 200 feet upstream of the Baker Dam to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. North Latitude West Longitude	A	0-1	0134LN-0005	9/4/2018 10:45	Field PCBs	Sample was collected using a sludge sampler/hand auger in 6" of water. Material described as: 0-1' brown fine SAND and SILT, some organics (leaves, sticks, roots), trace fine-to-medium gravel. PID = 0. 1-2' brown fine SAND and SILT, trace organics, trace fine-to-medium gravel. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 0.
		B	1-2	0134LN-0006	9/4/2018 10:55	Field PCBs	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
WBD-C4	Grab sediment samples collected using a percussion corer, from within a fluvial deposition and emergent wetland area along the northern bank of the Neponset River, upstream of the Baker Dam. The source sample was collected from within the surface water impoundment area, adjacent condominium patio area, approximately 50 feet upstream of the Baker Dam to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. North Latitude West Longitude	A	0-1	0134LN-0007	9/4/2018 10:10	Field PCBs	Sample was collected using a percussion corer in 12" of water. Material described as: 0-3' dark brown organic rich SILT. 3-4' dark brown organic rich SILT and SAND. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 1 ppm.
		B	1-2	0134LN-0008	9/4/2018 10:10	Field PCBs	
		C	2-3	0134LN-0009	9/4/2018 10:10	Field PCBs	
		D	3-4	0134LN-0010	9/4/2018 10:10	Field PCBs	
WBD-C5	Grab sediment samples collected using a hand auger, from a fluvial deposition and emergent wetland area along the northern bank of the Neponset River, upstream of the Baker Dam. The source sample was collected from within the surface water impoundment area, adjacent Condominium Power House area, approximately 200 feet upstream of the Baker Dam to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. North Latitude West Longitude	A	0-1	0134LN-0011	9/4/2018 10:30	Field PCBs	Sample was collected using a hand auger in 18" of water. Material described as: 0-2' dark brown organic rich SILT. 2-3' brown SILT, trace fine-to-coarse sand, fine-to-medium gravel, and debris (metal), saturated. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 0. Oil sheen and petroleum odor noted when augering.
		B	1-2	0134LN-0012	9/4/2018 10:36	Field PCBs	
		C (SD-01)	2-3	0134LN-0013/ D35475/ PA41R3/A41R3	9/4/2018 10:45	Field PCBs 209 CBCs TOC % solids	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
PTB-C1	Grab sediment samples collected using a hand auger, from a point bar in an upstream area located within the Pine Tree Brook tributary channel to the Neponset River. Sample collected in the brook, upstream of the Neponset Riverwalk Trail and the Railroad Bridge overpass and downstream of the Elliot Street Bridge/Brook Hill Road, to determine the presence of any Aroclor substances within this tributary to the Lower Neponset River and to document upstream reference/background levels for comparison purposes. North Latitude West Longitude	A (SD-02)	0-1	0134LN-0014/ D35476/ PA41R4/A41R4	9/4/2018 11:35	Field PCBs PCBs 209 CBCs TOC % solids	Sample was collected using a hand auger in <1" of water. Material described as: 0-1' orange-brown medium -to-coarse SAND, some fine-to-medium gravel, little fine-to-medium sand, trace silts, debris (glass, metal), and organics. 1-2' Material described as brown-to-yellow brown coarse-to-medium SAND, little fine sand and silt. Specific conductance (µS/cm) = 0.145; Temp. (°C) = 24.9; Turbidity (NTU) = 1.03; pH = 6.65; PID = 0.
		B	1-2	0134LN-0015	9/4/2018 11:38	Field PCBs	
BCA-C1	Grab sediment samples collected using a hand auger, from a fluvial deposition area on the downstream side of the most-downstream island adjacent to a wetland area within the braided channel segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-1	0134LN-0016	9/4/2018 14:35	Field PCBs	Sample was collected using a hand auger from along the edge of the island and with emergent wetland vegetation. Material described as: 0-3" brown fine SAND and SILT, little organics (roots, leaves). 3-6" gray medium-to-coarse SAND and SILT, some medium gravel. 6"-1.5' gray medium-to-coarse SAND and SILT, some medium-to-coarse gravel. Specific conductance (µS/cm) = 0.73; Temp. (°C) = 26.8; Turbidity (NTU) = 2.59; pH = 7.39; ORP (mV) = -93.9; PID = 0.
		B	1-2	0134LN-0017	9/4/2018 14:45	Field PCBs	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
BCA-C2	Grab sediment samples collected using a hand auger, from a fluvial deposition area in a wetland area, within a dry river channel on the most-downstream island, within the braided channel segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-1	0134LN-0018	9/4/2018 14:20	Field PCBs	Sample was collected using a hand auger; no surface water present. Material described as: 0-1.9' brown SILT. 1.9-3.3' gray sandy GRAVEL, little silt. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 0.
		B	1-1.9	0134LN-0019	9/4/2018 14:45	Field PCBs	
		C	1.9-3	0134LN-0020	9/4/2018 14:57	Field PCBs	
		D	3-3.3	0134LN-0021	9/4/2018 15:09	Field PCBs	
BCA-C3	Grab sediment samples collected using a hand auger, from a fluvial deposition area on the downstream southern side of the large central island, within a wetland area within the braided channel segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-1	0134LN-0022	9/4/2018 15:50	Field PCBs	Sample was collected using a hand auger from a wetland area within the central island area, hole backfilled with water. . Material described as: 0-1' SAND and SILT, trace organics. 1-1.8' brown SILT, little clay, wet. 1.8-3.8' SILT and SAND, wet. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 0.
		B	1-1.8	0134LN-0023	9/4/2018 15:55	Field PCBs	
		C (SD-03)	1.8-2.2	0134LN-0024/ D35477/ PA41R5/A41R5	9/4/2018 16:00	Field PCBs PCBs 209 CBCs TOC % solids	
		D	2.2-2.5	0134LN-0025	9/4/2018 16:05	Field PCBs	
		E	2.5-3	0134LN-0026	9/4/2018 16:10	Field PCBs	
		F	3-3.8	0134LN-0027	9/4/2018 16:13	Field PCBs	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
BCA-C4	Grab sediment samples collected using a hand auger, from a fluvial deposition area, within a wetland area along the northern side of the river bank on the Large Western Island within the upstream portion of the Braided Channel Area segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-1	0134LN-0028	9/4/2018 17:05	Field PCBs	Sample was collected using a hand auger from a wetland area. Material described as: 0-2' dark brown fine SAND and SILT. 2-2.5' brown and gray fine SAND. 2.5-3' gray fine SAND. 3-4' dark gray coarse -to-fine SAND. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 0.
		B	1-2	0134LN-0029	9/4/2018 17:10	Field PCBs PCBs	
		C	2-2.5	0134LN-0030	9/4/2018 17:15	Field PCBs	
		D	2.5-3	0134LN-0031	9/4/2018 17:20	Field PCBs	
		E	3-4	0134LN-0032	9/4/2018 17:25	Field PCBs	
BCA-C5	Grab sediment samples collected using a hand auger, from a fluvial deposition area, within a wetland area along the southern side of the Large Western Island within the upstream portion of the Braided Channel Area segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-0.8	0134LN-0033	9/4/2018 17:20	Field PCBs	Sample was collected using a hand auger from a wetland area along the southern side of the large northern island. Material described as: 0-0.8' dark brown fine SAND and SILT, trace organics. 0.8-1.7' light brown-orange fine-to-coarse SAND, moist. 1.7-2.5' brown fine SAND and SILT, wet. 2.5-4' dark brown SILT and fine SAND, trace organics, wet. 4-4.8' SILT and SAND, some gravel, wet. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 0.
		B	0.8-1.7	0134LN-0034	9/4/2018 17:30	Field PCBs	
		C	1.7-2.5	0134LN-0035	9/4/2018 17:35	Field PCBs	
		D (SD-04)	2.5-4	0134LN-0036/ D35478/ PA41R6/A41R6	9/4/2018 17:40	Field PCBs 209 CBCs TOC % solids	
		E	4-4.8	0134LN-0037	9/4/2018 17:45	Field PCBs	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
BCA-C6	Grab sediment samples collected using a hand auger, from a fluvial deposition area, from within a wetland area on the large central Island, within the braided channel segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-0.8	0134LN-0038	9/5/2018 17:20	Field PCBs	Sample was collected using a hand auger. Petroleum/oil noted in sediments in hole below 2 feet. Material described as: 0-0.8' dark brown fine SAND and SILT, trace organics. 0.8-1.7' light brown-orange fine-to-coarse SAND, moist. 1.7-2.5' brown fine SAND and SILT, wet. 2.5-4' dark brown SILT and SAND, wet. 4-4.8' SILT and SAND, some gravel, wet. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 0.
		B	0.8-1.7	0134LN-0039	9/5/2018 17:30	Field PCBs	
		C	1.7-2.5	0134LN-0040	9/5/2018 17:35	Field PCBs	
		D	2.5-4	0134LN-0041	9/5/2018 17:40	Field PCBs	
		E	4-4.8	0134LN-0042	9/5/2018 17:45	Field PCBs	
		F	0.8-1.7	0134LN-0043	9/5/2018 17:30	Field PCBs	
		G	1.7-2.5	0134LN-0044	9/5/2018 17:35	Field PCBs	
		H	2.5-4	0134LN-0045	9/5/2018 17:40	Field PCBs	
		I	4-4.8	0134LN-0046	9/5/2018 17:45	Field PCBs	
BCA-C7	Grab sediment samples collected using a hand auger, from a fluvial deposition area, within a wetland area along the southern side of the Large Western Island within the upstream portion of the Braided Channel Area segment of the Neponset River, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-1.3	0134LN-0047	9/5/2018 9:25	Field PCBs	Sample was collected using a hand auger from a wetland area along the southern side of the large northern island. Material described as: 0-0.8' dark brown fine SAND and SILT, trace organics. 0.8-1.7' light brown-orange fine-to-coarse SAND, moist. 1.7-2.5' brown fine SAND and SILT, wet. 2.5-4' dark brown SILT and fine SAND, wet. 4-4.8' SILT and SAND, some gravel, wet. Specific conductance (µS/cm) = 0.83; Temp. (°C) = 24.5; Turbidity (NTU) = 4.01; pH = 7.19; ORP (mV) = -143.9; PID = 0.
		B	1.3-2	0134LN-0048	9/5/2018 9:30	Field PCBs	
		C	2-3	0134LN-0049	9/5/2018 9:36	Field PCBs	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
THD-C1	Grab sediment samples collected using a hand auger, from a fluvial deposition area approximately 10 feet off the southern bank of the Neponset River, within an emergent wetland area in the Tileston & Hollingsworth Dam surface water impoundment. The sample was collected approximately 30 feet upstream of the Dam, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-1	0134LN-0050	9/5/2018 12:55	Field PCBs	Sample was collected using a hand auger from a wetland area along the southern side of the river. Material described as: 0-1' brown SAND and SILT, trace organics, wet. 1-2' brown SAND and SILT, trace fine gravel, wet. 2-3' brown SILT and SAND wet. 3-4' brown SILT and SAND, wet. 4-5' 5-6' brown SILT, trace fine-to-coarse sand, fine-to-medium gravel, organics, clay, saturated. 6-6.5 brown SILT, little clay, organics. 6.5-7' Specific conductance (µS/cm) = 0.88; Temp. (°C) = 25.5; Turbidity (NTU) = 6.05; pH = 7.04; ORP (mV) = 84.8; PID = 0.
		B	1-2	0134LN-0051	9/5/2018 12:58	Field PCBs	
		C	2-3	0134LN-0052	9/5/2018 13:00	Field PCBs	
		D	3-4	0134LN-0053	9/5/2018 13:03	Field PCBs	
		E	4-5	0134LN-0054	9/5/2018 13:05	Field PCBs	
		F (SD-07)	5-6	0134LN-0055/ D35481/ PA41R9/A41R9	9/5/2018 13:10	Field PCBs 209 CBCs TOC % solids	
		G (SD-05)	6-6.5	0134LN-0056/ D35479/ PA41R7/A41R7	9/5/2018 13:15	Field PCBs 209 CBCs TOC % solids	
		H	6.5-7	0134LN-0057	9/5/2018 13:20	Field PCBs	
THD-C2	Grab sediment samples collected using a hand auger, from a fluvial deposition area approximately 10 feet off the northern bank of the Neponset River, within an emergent wetland area in the Tileston & Hollingsworth Dam surface water impoundment. The sample was collected approximately 50 feet upstream of the Dam, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-1	0134LN-0058	9/5/2018 13:35	Field PCBs	Sample was collected using a hand auger from a wetland area along the southern side of the river. Material described as: 0-1' brown SAND and SILT, wet. 1-2' brown SAND and SILT, wet. 2-3' brown SILT and SAND, trace fine gravel, wet. 3-4' brown fine SAND and SILT, medium gravel. Specific conductance (µS/cm) = 0.88; Temp. (°C) = 25.5; Turbidity (NTU) = 6.05; pH = 7.04; ORP (mV) = 84.8; PID = 0.
		B	1-2	0134LN-0059	9/5/2018 13:40	Field PCBs	
		C	2-3	0134LN-0060	9/5/2018 13:45	Field PCBs	
		D	3-4	0134LN-0061	9/5/2018 13:50	Field PCBs	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
THD-C3	Grab sediment samples collected using a hand auger, from a fluvial deposition area approximately 10 feet off the northern bank of the Neponset River, within an emergent wetland area in the Tileston & Hollingsworth Dam surface water impoundment. The sample was collected approximately 50 feet upstream of the Dam, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations, as well as document ecological impacts. North Latitude West Longitude	A	0-1	0134LN-0062	9/5/2018 13:05	Field PCBs	Sample was collected using a hand auger from a wetland area along the southern side of the river. Material described as: 0-1' dark brown-to-gray SAND and SILT, little medium gravel. 1-2.5' dark brown SAND and SILT, medium-to-coarse gravel. Specific conductance (µS/cm) = 0.88; Temp. (°C) = 25.5; Turbidity (NTU) = 6.05; pH = 7.04; ORP (mV) = 84.8; PID = 0.
		B	1-2	0134LN-0063	9/5/2018 13:12	Field PCBs	
		C	2-2.5	0134LN-0064	9/5/2018 13:16	Field PCBs	
LCA-C1	Grab sediment samples collected using a hand auger, from a fluvial deposition area along the northern bank of the Lower Neponset River, slightly downstream of the former Lewis Chemical facility and approximately 50-55 ft. upstream of Fairmount Avenue Bridge spanning the river, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. North Latitude West Longitude	A	0-0.8	0134LN-0065	9/5/2018 15:40	Field PCBs	Sample was collected using a hand auger from a wetland area along the western side of the river in approximately 8" of water. Material described as: 0.0 - 0.8' brown-to-dark brown SILT, trace fine-to-medium sand, gravel, clay, and organics. Both samples collected from same interval immediately adjacient locations. Specific conductance (µS/cm) = 0.86; Temp. (°C) = 25.6; Turbidity (NTU) = 7.27; pH = 6.71; ORP (mV) = 125.5; PID = 0.
		B	0-0.8	0134LN-0066	9/5/2018 15:40	Field PCBs	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
LCA-C2	Grab sediment samples collected using a hand auger, from a fluvial deposition area along the northern bank of the Lower Neponset River, slightly downstream of the former Lewis Chemical facility and approximately 200 ft. upstream of Fairmount Avenue Bridge spanning the river, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. North Latitude West Longitude	A	0-1	0134LN-0067	9/5/2018 16:20	Field PCBs	Sample was collected using a hand auger from a wetland area along the western side of the river in approximately 8" of water. Material described as: (A) - 0.0 - 1.0' brown-to-dark brown SILT, trace fine-to-medium sand, gravel, clay, and organics. (B) - 1.0 - 2.0' brown-to-dark brown SILT, trace fine-to-medium sand, gravel, clay, and organics. (C) -2.0 - 3.0' brown-to-dark brown SILT, trace fine-to-medium sand, gravel, and clay. (D) - 3-4' brown-to-dark brown SILT, trace fine-to-medium sand and gravel and clay. (E) - 4-5' brown-to-dark brown SILT, trace fine-to-medium sand and gravel and clay. Specific conductance (µS/cm) = 0.86; Temp. (°C) = 25.6; Turbidity (NTU) = 7.27; pH = 6.71; ORP (mV) = 125.5; PID = 0.
		B	1-2	0134LN-0068	9/5/2018 16:22	Field PCBs	
		C	2-3	0134LN-0069	9/5/2018 16:24	Field PCBs	
		D	3-4	0134LN-0070	9/5/2018 16:26	Field PCBs	
		E (SD-06)	4-5	0134LN-0071/ D35480/ PA41R8/A41R8	9/5/2018 16:28	Field PCBs 209 CBCs TOC % solids	
LCA-C3	Grab sediment samples collected using a hand auger, from a fluvial deposition area along the northern bank of the Lower Neponset River, slightly downstream of the former Lewis Chemical facility and approximately 200 ft. upstream of Fairmount Avenue Bridge spanning the river, to determine the presence and level of any hazardous Aroclor substances within the Lower Neponset River for waste source and observed release evaluations. North Latitude West Longitude	A	0-1	0134LN-0072	9/5/2018 16:15	Field PCBs	Sample was collected using a hand auger from a wetland area along the western side of the river in approximately 8" of water. Material described as: (A) - 0.0 - 1.0' brown-to-dark brown SILT, trace fine-to-medium sand, gravel, clay, and organics. (B) - 1.0 - 2.0' brown-to-dark brown SILT, trace fine-to-medium sand, gravel, clay, and organics. (C) -2.0 - 3.0' brown-to-dark brown SILT, trace fine-to-medium sand, gravel, and clay. (D) - 3-4' brown SILT and fine-to-medium SAND, trace coarse sand, fine gravel, clay, and organics. Specific conductance (µS/cm) = 0.86; Temp. (°C) = 25.6; Turbidity (NTU) = 7.27; pH = 6.71; ORP (mV) = 125.5; PID = 0. Slight petroleum odor and sheen on the water when augering.
		B	1-2	0134LN-0073	9/5/2018 16:18	Field PCBs	
		C	2-3	0134LN-0074	9/5/2018 16:20	Field PCBs	
		D (SD-11)	3-4	0134LN-0075/ D35485/ PA41S3/A41S3	9/5/2018 16:24	Field PCBs 209 CBCs TOC % solids	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
MBC-C1	Grab sediment sample collected from potentially contaminated source area located upstream of the Tileston & Hollingsworth Dam and downstream of the confluence of Mother Brook and the Neponset River, approximately 125 feet east of the Dana Ave bridge. Sample collected for PCB Congener analysis to determine the presence and level of any hazardous PCB substances within the Lower Neponset River for waste source and observed release evaluations. North Latitude West Longitude	A	0-0.5	0134LN-0076	9/5/2018 17:20	Field PCBs	Sample was collected using a hand auger. Material described as: 0.0-0.5' dark brown, organic rich SILT, little sand, trace fine-to-coarse gravel, and plant debris.. 0.5-1.5' dark brown, organic rich SILT, some sand, trace gravel, . 2.5 -3' light brown sandy SILT and CLAY, trace gravel and organics. 3-3.5' brown SILTY SAND, trace gravel, clay, and organics. 3.5-4' dark brown, organic rich SILT, some sand, trace gravel. 4-5' dark brown, organic rich SILT, little sand, Specific conductance (µS/cm) = 0.86; Temp. (°C) = 26.2; Turbidity (NTU) = 6.36; pH = 7.26; PID = 0.
		B	0.5-1.5	0134LN-0077	9/5/2018 17:20	Field PCBs	
		C	1.5-2.5	0134LN-0078	9/5/2018 17:22	Field PCBs	
		D	2.5-3	0134LN-0079	9/5/2018 17:25	Field PCBs	
		E	3-3.5	0134LN-0080	9/5/2018 17:26	Field PCBs	
		F	3.5-4	0134LN-0081	9/5/2018 17:28	Field PCBs	
		G	4-5	0134LN-0082	9/5/2018 17:32	Field PCBs	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
UMB-C1	Grab sediment sample collected from an area within the Mother Brook upstream of the confluence of Mother Brook and the Neponset River, approximately 750 feet upstream of the Westinghouse Dam. Sample collected for PCB Congener analysis to determine the presence and level of any hazardous PCB substances within the Upstream segment of Mother Brook to document upstream reference/background levels for comparison purposes. North Latitude West Longitude	A	0-1	0134LN-0086	9/6/2018 9:40	Field PCBs	Sample was collected using a hand auger. Material described as: 0-1' black, organic rich SILT, little sand, trace fine-to-coarse gravel. 1-2' black organic rich SILT, some sand, trace gravel. 2-3' black SILT and CLAY, trace sand and organics. 3-4' black SILTY SAND, trace gravel, clay, and organics. Specific conductance (µS/cm) = 0.86; Temp. (°C) = 26.2; Turbidity (NTU) = 6.36; pH = 7.26; PID = 0.
		B	1-2	0134LN-0087	9/6/2018 9:43	Field PCBs	
		C	2-3	0134LN-0088	9/6/2018 9:46	Field PCBs	
		D	3-3.5	0134LN-0089	9/6/2018 9:55	Field PCBs	
UMB-C2	Grab sediment sample collected from an area within the Mother Brook upstream of the confluence of Mother Brook and the Neponset River, approximately 1,200 feet upstream of the Centennial Dam. Sample collected for PCB Congener analysis to determine the presence and level of any hazardous PCB substances within the Upstream segment of Mother Brook to document upstream reference/background levels for comparison purposes. North Latitude West Longitude	A	0-1	0134LN-0090	9/6/2018 10:52	Field PCBs	Sample was collected using a hand auger collected in 6" of water. Material described as: 0-1' dark brown-to-black organic rich SILT, trace clay. 1-2' dark brown-to-black organic rich SILT, some fine-to-coarse sand. 2-3' black organic rich SILT, some fine-to-coarse sand, little clay, trace fine-to-coarse gravel. Specific conductance (µS/cm) = 0.94; Temp. (°C) = 27.4; Turbidity (NTU) = 4.64; pH = 7.05; PID = 0.
		B	1-2	0134LN-0091	9/6/2018 10:54	Field PCBs	
		C (SD-10)	2-3	0134LN-0092/ D35484/ PA41S2/A41S2	9/6/2018 11:02	Field PCBs 209 CBCs TOC % solids	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
UNR-C1	Grab sediment sample collected from an area within the Upper Neponset River, located adjacent to the Martini Playground. Sample collected for PCB Congener analysis to determine the presence and level of any hazardous PCB substances within the Upper Neponset River to document upstream reference/background levels for comparison purposes. North Latitude West Longitude	A	0-1	0134LN-0093	9/6/2018 13:00	Field PCBs	Sample was collected using a hand auger collected in 6" of water. Material described as: 0-2' dark gray coarse-to-fine SAND. 2-3' light-to-medium gray coarse-to-fine SAND. Specific conductance (µS/cm) = 0.71; Temp. (°C) = 25.8; Turbidity (NTU) = 4.36; pH = 6.74; PID = 0.
		B	1-2	0134LN-0094	9/6/2018 13:10	Field PCBs	
		C	2-3	0134LN-0095	9/6/2018 13:15	Field PCBs	
UNR-C2	Grab sediment sample collected from an area within the Upper Neponset River, located behind the Stop & Shop. Sample collected for PCB Congener analysis to determine the presence and level of any hazardous PCB substances within the Upper Neponset River to document upstream reference/background levels for comparison purposes. North Latitude West Longitude	A	0-1	0134LN-0096	9/6/2018 13:51	Field PCBs	Sample was collected using a hand auger collected in 12" of water. Material described as: 0-1' dark brown SILTY SAND, trace clay and organics. 1-2' dark brown SANDY SILT, trace clay and organics. 2-3' dark brown SILT, little fine-to-medium sand, trace clay and organics. 3-4' dark brown SILT, little fine-to-medium sand, little clay, trace organics. Specific conductance (µS/cm) = 0.77; Temp. (°C) = 25.6; Turbidity (NTU) = 4.03; pH = 6.95; PID = 0. Slight petroleum/oily odor.
		B	1-2	0134LN-0097	9/6/2018 13:55	Field PCBs	
		C	2-3	0134LN-0098	9/6/2018 13:58	Field PCBs	
		D (SD-08)	3-4	0134LN-0099/ D35482/ PA41S0/A41S0	9/6/2018 14:03	Field PCBs 209 CBCs TOC % solids	

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
UNR-C3	Grab sediment sample collected from an area within the Upper Neponset River, located approximately 1,000 feet upstream of Paul's Bridge. Sample collected for PCB Congener analysis to determine the presence and level of any hazardous PCB substances within the Upper Neponset River to document upstream reference/background levels for comparison purposes. North Latitude West Longitude	A (SD-09)	0-1	0134LN-0100/ D35483/ PA41S1/A41S1	9/6/2018 15:15	Field PCBs 209 CBCs TOC % solids	Sample was collected using a hand auger collected in 18" of water. Material described as: 0-1' brown-to-dark brown SILT, little clay, trace clay and fine-to-medium sand.. Specific conductance (µS/cm) = 0.71; Temp. (°C) = 25.6; Turbidity (NTU) = 4.26; pH = 6.75; PID = 0.
		B	1-2	0134LN-0101	9/6/2018 15:19	Field PCBs	
		C	2-3	0134LN-0102	9/6/2018 15:21	Field PCBs	
		D	3-4	0134LN-0103	9/6/2018 15:28	Field PCBs	
BCA-C103	Field duplicate of BCA-C3D	D	3-3.8	0134LN-0083	9/4/2018 16:13	Field PCBs	See BCA-C1D.

TABLE C-4

SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS
BOSTON/MILTON, MASSACHUSETTS
4 THROUGH 6 SEPTEMBER 2018

Station Location	Location Description/Rationale	Sub-location	Sample Depth* (feet)	Scribe Sample No/ DAS Sample No./ CLP Sample No.	Date and Time (hours)	Analysis	Sample Description
BCA-C101	Field duplicate of BCA-C1A	A	0-1	0134LN-0084	9/4/2018 14:35	Field PCBs	See BCA-C1A
THD-C101	Field duplicate of THD-C1D	D	3-4	0134LN-0085	9/5/2018 13:03	Field PCBs	See THD-C1D
THD-C102	Field duplicate of THD-C2D	D	2-3	0134LN-0104	9/5/2018 13:45	Field PCBs	See THD-C2D.
BCA-C105D	Field Duplicate of BCA-C5D	D (SD-12)	2.5-4	NA/ D35486/ PA41S4/A41S4	9/4/2018 17:40	Field PCBs 209 CBCs TOC % solids	See BCA-C5D

Temp (°C) = Temperature (degrees Celsius)
Spec. Cond. (µS/cm) = Specific conductance (micro Siemens per centimeter)
NTU = Nephelometric Turbidity Units
ORP (mV) = Oxidation-Reduction Potential (milliVolts)
CLP = Contract Laboratory Program
DAS = Delivery of Analytical Services
CGI/O_2 (LEL/%) = Combustible Gas Indicator/Oxygen Meter (Lower Explosive Limit/Percent)
PID = Photoionization Detector
COC = Chain of Custody
ppm = parts per million
No. = Number
NR = Not Recorded.
* = Below the sediment/water interface.
" = inches.
' = feet.
NA = Not assigned

Analyses: Field PCBs = Field Screening Polychlorinated biphenyls (EPA Region 1 SOP, EIASOP-FLDPCB3).
PCBs = PCBs Medium Level in Soils and Sediments (EPA Region 1 SOP, EIASOP-PESTSOIL4)
209 CBCs = Contract Laboratory Program (CLP) 209 Congeners (HRSM01.2 for PCB Congeners)
TOC = Total Organic Carbon (SW-846 9060/Lloyd Kahn)
% solids = Percent solids

ATTACHMENT D
LOWER NEPONSET RIVER PCBS
START ANALYTICAL RESULTS TABLES
Samples Collected from 13 to 17 November 2017

SITE: LOWER NEPONSET RIVER PCB
CASE: 47280 SDG: A41G7
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 1
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	A41G7	A41G8	A41H1	A41H2	A41J4	A41J5
		SAMPLE IDENTIFIER	D35204	D35205	D35208	D35209	D35221	D35222
		STATION LOCATION	SD-01	SD-02	SD-03	SD-04	SD-14	SD-14B
		LABORATORY NUMBER	I6545-01	I6545-02	I6545-03	I6545-04	I6545-05	I6545-08
COMPOUND	MDL	CRQL						
Aroclor-1016	1.7	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
Aroclor-1221	2.2	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
Aroclor-1232	0.87	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
Aroclor-1242	1.2	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
Aroclor-1248	1.6	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
Aroclor-1254	1.6	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
Aroclor-1260	2.2	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
Aroclor-1262	1.3	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
Aroclor-1268	1.2	33	64 U	72 UJ[1]	65 U	72 UJ[1]	85 U	97 UJ[1]
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017
		DATE EXTRACTED	11/20/2017	11/20/2017	11/20/2017	11/20/2017	11/20/2017	11/20/2017
		DATE ANALYZED	11/27/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017
		SAMPLE WEIGHT (GRAMS)	30.0	30.1	30.1	30.1	30.1	30.1
		% SOLID	51.7	45.8	50.9	46.0	38.8	33.9

S3VEM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
UJ[1] = Non-Detect results are estimated due to surrogate recoveries below the lower recovery limit.
J+[2] = Positve detect results are estimated with a high bias (J+) due to surrogate recoveries exceeding the upper recovery limit.
J[3] = %D between dual-column results was ≥25.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:

Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCB
CASE: 47280 SDG: A41G7
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 1
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	A41J6	A41J7	A41J8	A41J9	A41K0	A41K1
		SAMPLE IDENTIFIER	D35223	D35224	D35225	D35226	D35227	D35228
		STATION LOCATION	SD-14A	SD-15	SD-16	SD-17	SD-18	SD-19
		LABORATORY NUMBER	I6545-09	I6545-10	I6545-11	I6545-12	I6545-13	I6545-14
COMPOUND	MDL	CRQL						
Aroclor-1016	1.7	33	68 UJ[1]	74 U	69 U	68 U	45 U	58 U
Aroclor-1221	2.2	33	68 UJ[1]	74 U	69 U	68 U	45 U	58 U
Aroclor-1232	0.87	33	68 UJ[1]	74 U	69 U	68 U	45 U	58 U
Aroclor-1242	1.2	33	68 UJ[1]	74 U	69 U	68 U	45 U	58 U
Aroclor-1248	1.6	33	68 UJ[1]	74 U	69 U	68 U	45 U	58 U
Aroclor-1254	1.6	33	68 UJ[1]	74 U	69 U	68 U	45 U	58 U
Aroclor-1260	2.2	33	68 UJ[1]	74 U	69 U	68 U	**45 J[3]**	**78 J+[2]**
Aroclor-1262	1.3	33	68 UJ[1]	74 U	69 U	68 U	45 U	58 U
Aroclor-1268	1.2	33	68 UJ[1]	74 U	69 U	68 U	45 U	58 U
DILUTION FACTOR			1.0	1.0	1.0	1.0	1.0	1.0
DATE SAMPLED			11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017
DATE EXTRACTED			11/20/2017	11/20/2017	11/20/2017	11/20/2017	11/20/2017	11/20/2017
DATE ANALYZED			11/27/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017
SAMPLE WEIGHT (GRAMS)			50.1	30.1	30.1	30.0	30.1	30.1
% SOLID			29.1	44.5	47.8	48.8	72.7	57.1

S3VEM DATA VALIDATION
QUALIFIER COMMENTS: U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
UJ[1] = Non-Detect results are estimated due to surrogate recoveries below the lower recovery limit.
J+[2] = Positve detect results are estimated with a high bias (J+) due to surrogate recoveries exceeding the upper recovery limit.
J[3] = %D between dual-column results was ≥25.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:
Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCB
CASE: 47280 SDG: A41G7
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 1
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	**A41K3**	**A41K5**	**A41K6**	**A41K9**	**A41L0**	**A41L1**
		SAMPLE IDENTIFIER	**D35230**	**D35232**	**D35233**	**D35236**	**D35237**	**D35238**
		STATION LOCATION	**SD-21**	**SD-23**	**SD-24**	**SD-25**	**SD-26**	**SD-27**
		LABORATORY NUMBER	**I6545-15**	**I6545-16**	**I6545-17**	**I6545-18**	**I6545-19**	**I6545-20**
COMPOUND	**MDL**	**CRQL**						
Aroclor-1016	**1.7**	**33**	58 U	56 U	42 U	45 U	54 UJ[1]	84 U
Aroclor-1221	**2.2**	**33**	58 U	56 U	42 U	45 U	54 UJ[1]	84 U
Aroclor-1232	**0.87**	**33**	58 U	56 U	42 U	45 U	54 UJ[1]	84 U
Aroclor-1242	**1.2**	**33**	58 U	56 U	42 U	45 U	54 UJ[1]	84 U
Aroclor-1248	**1.6**	**33**	58 U	56 U	42 U	45 U	54 UJ[1]	84 U
Aroclor-1254	**1.6**	**33**	**49 J[3]**	**70 J[3]**	42 U	**46 J[3]**	54 UJ[1]	84 U
Aroclor-1260	**2.2**	**33**	58 U	56 U	42 U	45 U	54 UJ[1]	84 U
Aroclor-1262	**1.3**	**33**	58 U	56 U	42 U	45 U	54 UJ[1]	84 U
Aroclor-1268	**1.2**	**33**	58 U	56 U	42 U	45 U	54 UJ[1]	84 U
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/15/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017
		DATE EXTRACTED	11/20/2017	11/20/2017	11/20/2017	11/20/2017	11/20/2017	11/20/2017
		DATE ANALYZED	11/27/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017
		SAMPLE WEIGHT (GRAMS)	30.1	30.0	30.0	30.1	30.1	30.0
		% SOLID	56.4	59.5	79.2	73.9	61.0	39.5

S3VEM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
UJ[1] = Non-Detect results are estimated due to surrogate recoveries below the lower recovery limit.
J+[2] = Positve detect results are estimated with a high bias (J+) due to surrogate recoveries exceeding the upper recovery limit.
J[3] = %D between dual-column results was ≥25.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:
Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCB
CASE: 47280 SDG: A41G7
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 1
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	**A41L3**	**A41M3**				
		SAMPLE IDENTIFIER	**D35240**	**D35250**				
		STATION LOCATION	**SD-27A**	**SD-35**				
		LABORATORY NUMBER	**I6545-21**	**I6545-22**				
COMPOUND	**MDL**	**CRQL**						
Aroclor-1016	**1.7**	**33**	100 UJ[1]	57 UJ[1]				
Aroclor-1221	**2.2**	**33**	100 UJ[1]	57 UJ[1]				
Aroclor-1232	**0.87**	**33**	100 UJ[1]	57 UJ[1]				
Aroclor-1242	**1.2**	**33**	100 UJ[1]	57 UJ[1]				
Aroclor-1248	**1.6**	**33**	100 UJ[1]	57 UJ[1]				
Aroclor-1254	**1.6**	**33**	100 UJ[1]	57 UJ[1]				
Aroclor-1260	**2.2**	**33**	100 UJ[1]	57 UJ[1]				
Aroclor-1262	**1.3**	**33**	100 UJ[1]	57 UJ[1]				
Aroclor-1268	**1.2**	**33**	100 UJ[1]	57 UJ[1]				
		DILUTION FACTOR	1.0	1.0				
		DATE SAMPLED	11/16/2017	11/16/2017				
		DATE EXTRACTED	11/20/2017	11/20/2017				
		DATE ANALYZED	11/27/2017	11/27/2017				
		SAMPLE WEIGHT (GRAMS)	50.1	30.1				
		% SOLID	19.5	58.2				

S3VEM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
UJ[1] = Non-Detect results are estimated due to surrogate recoveries below the lower recovery limit.
J+[2] = Positve detect results are estimated with a high bias (J+) due to surrogate recoveries exceeding the upper recovery limit.
J[3] = %D between dual-column results was ≥25.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:

Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47280 SDG: A41H3
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 2
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	A41H3	A41H4	A41H5	A41H6	A41H7	A41H8
		SAMPLE IDENTIFIER	D35210	D35211	D35212	D35213	D35214	D35215
		STATION LOCATION	SD-05	SD-06	SD-07	SD-08	SD-09	SD-10
		LABORATORY NUMBER	I6502-01	I6505-02	I6505-05	I6505-06	I6505-07	I6505-08
COMPOUND	MDL	CRQL						
Aroclor-1016	1.7	33	39 U	81 U	39 U	40 U	45 UJ[1]	60 U
Aroclor-1221	2.2	33	39 U	81 U	39 U	40 U	45 UJ[1]	60 U
Aroclor-1232	0.87	33	39 U	81 U	39 U	40 U	45 UJ[1]	60 U
Aroclor-1242	1.2	33	39 U	81 U	39 U	40 U	45 UJ[1]	60 U
Aroclor-1248	1.6	33	39 U	**2100 * J[2]**	**13 J**	**57**	**150 J-[1]**	**260**
Aroclor-1254	1.6	33	39 U	81 UJ[3]	39 U	40 U	45 UJ[1]	60 U
Aroclor-1260	2.2	33	39 U	81 U	39 U	40 U	45 UJ[1]	60 U
Aroclor-1262	1.3	33	39 U	81 U	39 U	40 U	45 UJ[1]	60 U
Aroclor-1268	1.2	33	39 U	81 U	39 U	40 U	45 UJ[1]	60 U
		DILUTION FACTOR	1	1 / 5*	1.0	1	1.0	1.0
		DATE SAMPLED	11/13/2017	11/13/2017	11/13/2017	11/13/2017	11/13/2017	11/14/2017
		DATE EXTRACTED	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017
		DATE ANALYZED	11/21/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017
		SAMPLE WEIGHT (GRAMS)	30.1	30.1	30.1	30.1	30.2	30.0
		% SOLID	84.2	40.8	84.5	83.0	73.0	55.0

S3VEM DATA VALIDATION

QUALIFIER COMMENTS: U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J^1 = Positive and non-detect results are estimated (J-/UJ) due to surrogate recoveries below the lower recovery limit.
J^2 = Positve field duplicate results are estimated (J) due to RPD greater than 50%.
J^3 =Positve and non-detect field duplicate results are estimated (J/UJ) since one result was non-detected and one result was greater than 2X the CRQL.
J^4 = %D between dual-column results was ≥25.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:
Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47280 SDG: A41H3
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 2
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	A41H9	A41J2	A41J3	A41M7	A41M9	A41N0
		SAMPLE IDENTIFIER	D35216	D35219	D35220	D35254	D35256	D35257
		STATION LOCATION	SD-11	SD-12	SD-13	SD-39	SD-41	SD-42
		LABORATORY NUMBER	I6505-09	I6505-10	I6505-11	I6505-12	I6505-13	I6505-14
COMPOUND	MDL	CRQL						
Aroclor-1016	1.7	33	54 U	56 UJ[1]	48 UJ[1]	74 U	40 U	72 UJ[1]
Aroclor-1221	2.2	33	54 U	56 UJ[1]	48 UJ[1]	74 U	40 U	72 UJ[1]
Aroclor-1232	0.87	33	54 U	56 UJ[1]	48 UJ[1]	74 U	40 U	72 UJ[1]
Aroclor-1242	1.2	33	54 U	56 UJ[1]	48 UJ[1]	74 U	40 U	72 UJ[1]
Aroclor-1248	1.6	33	**1500 *J[4]**	**300 J-[1]**	**370 J-[1]**	**630 J[2,4]**	**530 ***	**200 J-[1]**
Aroclor-1254	1.6	33	54 U	56 UJ[1]	48 UJ[1]	**330 J[3]**	40 U	72 UJ[1]
Aroclor-1260	2.2	33	54 U	56 UJ[1]	48 UJ[1]	74 U	40 U	72 UJ[1]
Aroclor-1262	1.3	33	54 U	56 UJ[1]	48 UJ[1]	74 U	40 U	72 UJ[1]
Aroclor-1268	1.2	33	54 U	56 UJ[1]	48 UJ[1]	74 U	40 U	72 UJ[1]
		DILUTION FACTOR	1 / 4*	1.0	1.0	1.0	1 / 2*	1.0
		DATE SAMPLED	11/14/2017	11/14/2017	11/14/2017	11/13/2017	11/14/2017	11/14/2017
		DATE EXTRACTED	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017
		DATE ANALYZED	12/4/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017
		SAMPLE WEIGHT (GRAMS)	30.1	30.1	30.0	30.1	30.1	30.0
		% SOLID	61.1	58.7	68.5	44.4	82.0	45.9

S3VEM DATA VALIDATION

QUALIFIER COMMENTS:
U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J[1] = Positive and non-detect results are estimated (J-/UJ) due to surrogate recoveries below the lower recovery limit.
J[2] = Positve field duplicate results are estimated (J) due to RPD greater than 50%.
J[3] =Positve and non-detect field duplicate results are estimated (J/UJ) since one result was non-detected and one result was greater than 2X the CRQL.
J[4] = %D between dual-column results was ≥25.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:
Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47280 SDG: A41H3
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 2
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	**A41N1**	**A41P0**	**A41P1**	**A41P2**	**A41P3**	**A41P4**
		SAMPLE IDENTIFIER	**D35258**	**D35275**	**D35276**	**D35277**	**D35278**	**D35279**
		STATION LOCATION	**SD-43**	**SD-08A**	**SD-12A**	**SD-100A**	**SD-100B**	**SD-100C**
		LABORATORY NUMBER	**I6505-15**	**I6505-18**	**I6505-19**	**I6505-20**	**I6505-21**	**I6505-22**
COMPOUND	**MDL**	**CRQL**						
Aroclor-1016	**1.7**	**33**	38 U	58 U	60 U	79 UJ[1]	93 U	82 U
Aroclor-1221	**2.2**	**33**	38 U	58 U	60 U	79 UJ[1]	93 U	82 U
Aroclor-1232	**0.87**	**33**	38 U	58 U	60 U	79 UJ[1]	93 U	82 U
Aroclor-1242	**1.2**	**33**	38 U	58 U	60 U	79 UJ[1]	93 U	82 U
Aroclor-1248	**1.6**	**33**	**180**	**270**	**1000 ***	**200 J-[1]**	**260**	82 U
Aroclor-1254	**1.6**	**33**	38 U	58 U	60 U	**69 J-[1,4]**	93 U	82 U
Aroclor-1260	**2.2**	**33**	38 U	58 U	60 U	79 UJ[1]	93 U	**31 J[4]**
Aroclor-1262	**1.3**	**33**	38 U	58 U	60 U	79 UJ[1]	93 U	82 U
Aroclor-1268	**1.2**	**33**	38 U	58 U	60 U	79 UJ[1]	93 U	82 U
		DILUTION FACTOR	1.0	1.0	1 / 4*	1.0	1.0	1.0
		DATE SAMPLED	11/14/2017	11/13/2017	11/14/2017	11/14/2017	11/14/2017	11/14/2017
		DATE EXTRACTED	11/16/2017	11/16/2017	11/16/2017	11/22/2017	11/16/2017	11/16/2017
		DATE ANALYZED	11/21/2017	11/21/2017	12/4/2017	11/27/2017	11/21/2017	11/21/2017
		SAMPLE WEIGHT (GRAMS)	30.1	30.1	30.0	30.1	30.1	30.1
		% SOLID	86.3	56.8	55.3	41.8	35.3	40.0

S3VEM DATA VALIDATION

QUALIFIER COMMENTS: U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J^1 = Positive and non-detect results are estimated (J-/UJ) due to surrogate recoveries below the lower recovery limit.
J^2 = Positve field duplicate results are estimated (J) due to RPD greater than 50%.
J^3 =Positve and non-detect field duplicate results are estimated (J/UJ) since one result was non-detected and one result was greater than 2X the CRQL.
J^4 = %D between dual-column results was ≥25.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:
Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47280 SDG: A41K4
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 3
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	**A41K4**	**A41L4**	**A41L5**	**A41L6**	**A41L8**	**A41M0**
		SAMPLE IDENTIFIER	**D35231**	**D35241**	**D35242**	**D35243**	**D35245**	**D35247**
		STATION LOCATION	**SD-22**	**SD-28**	**SD-29**	**SD-30**	**SD-32**	**SD-32A**
		LABORATORY NUMBER	**I6547-01**	**I6547-02**	**I6547-03**	**I6547-04**	**I6547-05**	**I6547-06**
COMPOUND	**MDL**	**CRQL**						
Aroclor-1016	**1.7**	**33**	58 U	94 U	140 UJ[1,6]	47 UJ[1]	86 U	100 UJ[1]
Aroclor-1221	**2.2**	**33**	58 U	94 U	140 UJ[1,6]	47 UJ[1]	86 U	100 UJ[1]
Aroclor-1232	**0.87**	**33**	58 U	94 U	140 UJ[1,6]	47 UJ[1]	86 U	100 UJ[1]
Aroclor-1242	**1.2**	**33**	58 U	94 U	140 UJ[1,6]	47 UJ[1]	86 U	100 UJ[1]
Aroclor-1248	**1.6**	**33**	58 U	94 U	140 UJ[1,6]	47 UJ[1]	86 U	100 UJ[1]
Aroclor-1254	**1.6**	**33**	**63 J[4,5]**	94 U	140 UJ[1,6]	47 UJ[1]	**51 J[5]**	100 UJ[1]
Aroclor-1260	**2.2**	**33**	58 U	94 U	140 UJ[1,6]	47 UJ[1]	86 U	100 UJ[1]
Aroclor-1262	**1.3**	**33**	58 U	94 U	140 UJ[1,6]	47 UJ[1]	86 U	100 UJ[1]
Aroclor-1268	**1.2**	**33**	58 U	94 U	140 UJ[1,6]	47 UJ[1]	86 U	100 UJ[1]
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017
		DATE EXTRACTED	11/21/2017	11/27/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017
		DATE ANALYZED	11/22/2017	11/27/2017	11/22/2017	11/22/2017	11/22/2017	11/22/2017
		SAMPLE WEIGHT (GRAMS)	30.0	50.0	30.1	30.1	30.1	30.0
		% SOLID	56.5	21.0	22.9	69.5	38.3	32.9

S3VEM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
UJ[1] = Non-detect results are estimated due to surrogate recoveries below the lower recovery limit.
J-[2] = Positve results are estimated with a low bias (J-) due to surrogate recoveries below the lower recovery limit.
R[3] = Non-detect results are rejected (R) due to Matrix Spike/Matrix Spike Duplicate recovery below the lower limit for Aroclor-1260.
J[4] = Positve results are estimated (J) due to the field duplicate RPD exceeding the upper limit.
J[5] = %D between dual-column results was ≥25.
J[6] = Non-detect results are estimated (UJ) due to percent solids > 10% but <30%. The amount of soil extracted was not increased.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:

Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47280 SDG: A41K4
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 3
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	**A41M1**	**A41M2**	**A41M4**	**A41M5**	**A41M6**	**A41N2**
		SAMPLE IDENTIFIER	**D35248**	**D35249**	**D35251**	**D35252**	**D35253**	**D35259**
		STATION LOCATION	**SD-33**	**SD-34**	**SD-36**	**SD-37**	**SD-38**	**SD-44**
		LABORATORY NUMBER	**I6547-07**	**I6547-08**	**I6547-09**	**I6547-10**	**I6547-11**	**I6547-12**
COMPOUND	**MDL**	**CRQL**						
Aroclor-1016	**1.7**	**33**	59 U	100 UJ[1]	140 UJ[1]	100 U	100 UJ[1]	43 U
Aroclor-1221	**2.2**	**33**	59 U	100 UJ[1]	140 UJ[1]	100 U	100 UJ[1]	43 U
Aroclor-1232	**0.87**	**33**	59 U	100 UJ[1]	140 UJ[1]	100 U	100 UJ[1]	43 U
Aroclor-1242	**1.2**	**33**	59 U	100 UJ[1]	140 UJ[1]	100 U	100 UJ[1]	43 U
Aroclor-1248	**1.6**	**33**	59 U	100 UJ[1]	140 UJ[1]	100 U	100 UJ[1]	43 U
Aroclor-1254	**1.6**	**33**	59 U	**59 J-[2,5]**	140 UJ[1]	100 U	**100 J-[2,5]**	**2100 ***
Aroclor-1260	**2.2**	**33**	59 U	100 UJ[1]	140 UJ[1]	100 U	100 UJ[1]	43 U
Aroclor-1262	**1.3**	**33**	59 U	100 UJ[1]	140 UJ[1]	100 U	100 UJ[1]	43 U
Aroclor-1268	**1.2**	**33**	59 U	100 UJ[1]	140 UJ[1]	100 U	100 UJ[1]	43 U
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0 / 5.0*
		DATE SAMPLED	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/15/2017
		DATE EXTRACTED	11/21/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017
		DATE ANALYZED	11/22/2017	11/22/2017	11/22/2017	11/22/2017	11/22/2017	11/22/2017
		SAMPLE WEIGHT (GRAMS)	30.1	30.0	50.0	30.1	30.1	30.1
		% SOLID	55.7	31.5	14.4	31.9	31.6	75.9

S3VEM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
UJ[1] = Non-detect results are estimated due to surrogate recoveries below the lower recovery limit.
J-[2] = Positve results are estimated with a low bias (J-) due to surrogate recoveries below the lower recovery limit.
R[3] = Non-detect results are rejected (R) due to Matrix Spike/Matrix Spike Duplicate recovery below the lower limit for Aroclor-1260.
J[4] = Positve results are estimated (J) due to the field duplicate RPD exceeding the upper limit.
J[5] = %D between dual-column results was ≥25.
J[6] = Non-detect results are estimated (UJ) due to percent solids > 10% but <30%. The amount of soil extracted was not increased.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:

Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47280 SDG: A41K4
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 3
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	**A41N3**	**A41Q3**	**A41Q4**	**A41Q5**	**A41Q6**	**A41Q7**
		SAMPLE IDENTIFIER	**D35260**	**D35280**	**D35281**	**D35282**	**D35283**	**D35284**
		STATION LOCATION	**SD-45**	**SD-21A**	**SD-23B**	**SD-23A**	**SD-22A**	**SD-26A**
		LABORATORY NUMBER	**I6547-13**	**I6547-16**	**I6547-17**	**I6547-18**	**I6547-19**	**I6547-22**
COMPOUND	**MDL**	**CRQL**						
Aroclor-1016	**1.7**	**33**	71 U	55 UJ[1]	45 UJ[1]	60 UJ[1]	42 U	68 UJ[1]
Aroclor-1221	**2.2**	**33**	71 U	55 UJ[1]	45 UJ[1]	60 UJ[1]	42 U	68 UJ[1]
Aroclor-1232	**0.87**	**33**	71 U	55 UJ[1]	45 UJ[1]	60 UJ[1]	42 U	68 UJ[1]
Aroclor-1242	**1.2**	**33**	71 U	55 UJ[1]	45 UJ[1]	60 UJ[1]	42 U	68 UJ[1]
Aroclor-1248	**1.6**	**33**	71 U	55 UJ[1]	45 UJ[1]	60 UJ[1]	42 U	68 UJ[1]
Aroclor-1254	**1.6**	**33**	**460 J[4]**	**45 J-[2,5]**	**38 J-[2,5]**	**100 J-[2,5]**	**29 J**	**35 J-[2,5]**
Aroclor-1260	**2.2**	**33**	71 U	55 UJ[1]	45 UJ[1]	60 UJ[1]	42 R[3]	68 UJ[1]
Aroclor-1262	**1.3**	**33**	71 U	55 UJ[1]	45 UJ[1]	60 UJ[1]	42 U	68 UJ[1]
Aroclor-1268	**1.2**	**33**	71 U	55 UJ[1]	45 UJ[1]	60 UJ[1]	42 U	68 UJ[1]
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/16/2017
		DATE EXTRACTED	11/21/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017	11/21/2017
		DATE ANALYZED	11/22/2017	11/22/2017	11/22/2017	11/22/2017	11/22/2017	11/22/2017
		SAMPLE WEIGHT (GRAMS)	30.1	30.0	30.0	30.1	30.0	50.1
		% SOLID	46.4	59.8	73.5	54.9	78.2	29.1

S3VEM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
UJ[1] = Non-detect results are estimated due to surrogate recoveries below the lower recovery limit.
J-[2] = Positve results are estimated with a low bias (J-) due to surrogate recoveries below the lower recovery limit.
R[3] = Non-detect results are rejected (R) due to Matrix Spike/Matrix Spike Duplicate recovery below the lower limit for Aroclor-1260.
J[4] = Positve results are estimated (J) due to the field duplicate RPD exceeding the upper limit.
J[5] = %D between dual-column results was ≥25.
J[6] = Non-detect results are estimated (UJ) due to percent solids > 10% but <30%. The amount of soil extracted was not increased.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:

Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47280 SDG: A41M8
LABORATORY: CHEMTECH CONSULTING GROUP

DATA SUMMARY TABLE 4
AROCLOR SEDIMENT ANALYSIS
NOVEMBER 2017

		CLP SAMPLE NUMBER	**A41M8**	**A41Q8**	**A41Q9**	**A41R0**
		SAMPLE IDENTIFIER	**D35255**	**D35285**	**D35286**	**D35287**
		STATION LOCATION	**SD-40A**	**SD-26B**	**SD-36A**	**SD-36B**
		LABORATORY NUMBER	**I6549-01**	**I6549-07**	**I6549-08**	**I6549-09**
COMPOUND	**MDL**	**CRQL**				
Aroclor-1016	**1.7**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
Aroclor-1221	**2.2**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
Aroclor-1232	**0.87**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
Aroclor-1242	**1.2**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
Aroclor-1248	**1.6**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
Aroclor-1254	**1.6**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
Aroclor-1260	**2.2**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
Aroclor-1262	**1.3**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
Aroclor-1268	**1.2**	**33**	55 U	110 UJ[1]	90 UJ[1]	130 UJ[1,2]
		DILUTION FACTOR	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/16/2017	11/16/2017	11/16/2017
		DATE EXTRACTED	11/22/2017	11/22/2017	11/22/2017	11/22/2017
		DATE ANALYZED	11/28/2017	11/28/2017	11/28/2017	11/28/2017
		SAMPLE WEIGHT (GRAMS)	30.1	30.0	30.1	30.0
		% SOLID	59.5	30.1	36.5	24.6

S3VEM DATA VALIDATION

QUALIFIER COMMENTS: U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
UJ[1] = Non-detect results are estimated due to surrogate recoveries below the lower recovery limit.
J[2] = Non-detect results are estimated (UJ) due to percent solids > 10% but <30%. The amount of soil extracted was not increased.
Values bolded and shaded exceed the sample adjusted CRQL.

NOTES:
Results are reported in micrograms per kilogram (µg/kg).
MDL = Method Detection Limit
CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35204
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 5
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS

		SAMPLE NUMBER	**D35204**	**D35205**	**D35208**	**D35209**	**D35221**	**D35222**
		STATION LOCATION	**SD-01**	**SD-02**	**SD-03**	**SD-04**	**SD-14**	**SD-14B**
		LABORATORY NUMBER	**180-72665-1**	**180-72665-2**	**180-72665-3**	**180-72665-4**	**180-72665-5**	**180-72665-6**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	160,000 J^2	100,000 J^2	98,000 J^2	74,000 J^2	95,000 J^2	97,000 J^2
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017
		DATE ANALYZED	11/28/2017	11/28/2017	11/28/2017	11/28/2017	11/28/2017	11/28/2017
		% SOLID	31.7	28.1	49.3	47.3	37.9	50

S3VM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J^1 = Result is estimated (J) due to analysis out of holding time.
J^2 = Result is estimated (J) due to laboratory duplicate RPD greater than 20%.

NOTES:
Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35204
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 5
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS

		SAMPLE NUMBER	**D35223**	**D35224**	**D35225**	**D35226**	**D35227**	**D35228**
		STATION LOCATION	**SD-14A**	**SD-15**	**SD-16**	**SD-17**	**SD-18**	**SD-19**
		LABORATORY NUMBER	**180-72665-7**	**180-72665-8**	**180-72665-9**	**180-72665-10**	**180-72665-11**	**180-72665-12**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	120,000 J^2	80,000 J^2	43,000 J^2	7,800 J^2	29,000 J^2	21,000 J^2
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017
		DATE ANALYZED	11/28/2017	11/29/2017	11/28/2017	11/29/2017	11/28/2017	11/28/2017
		% SOLID	31.7	43.2	57.6	59.5	56.2	56.7

S3VM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J^1 = Result is estimated (J) due to analysis out of holding time.
J^2 = Result is estimated (J) due to laboratory duplicate RPD greater than 20%.

NOTES:

Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35204
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 5
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS

		SAMPLE NUMBER	**D35230**	**D35232**	**D35233**	**D35236**	**D35237**	**D35238**
		STATION LOCATION	**SD-21**	**SD-23**	**SD-24**	**SD-25**	**SD-26**	**SD-27**
		LABORATORY NUMBER	**180-72665-13**	**180-72665-14**	**180-72665-15**	**180-72665-16**	**180-72665-17**	**180-72665-18**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	34,000 J^2	63,000 J^2	4,900 J^2	95,000 J^2	44,000 J^2	92,000 J^2
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/15/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017
		DATE ANALYZED	11/28/2017	11/28/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
		% SOLID	58.4	51.5	79.2	43.3	65.2	29.2

S3VM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J^1 = Result is estimated (J) due to analysis out of holding time.
J^2 = Result is estimated (J) due to laboratory duplicate RPD greater than 20%.

NOTES:

Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35204
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 5
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS

		SAMPLE NUMBER	**D35240**	**D35250**	**D35255**
		STATION LOCATION	**SD-27A**	**SD-35**	**SD-40A**
		LABORATORY NUMBER	**180-72665-19**	**180-72665-20**	**180-72665-21**
COMPOUND	**MDL**	**CRQL**			
Total Organic Carbon (TOC)	**746**	**1,000**	190,000 $J^{1,2}$	44,000 J^{2}	61,000 J^{2}
		DILUTION FACTOR	1.0	1.0	1.0
		DATE SAMPLED	11/16/2017	11/16/2017	11/15/2017
		DATE ANALYZED	12/1/2017	11/30/2017	11/28/2017
		% SOLID	18.9	53.4	42.1

S3VM DATA VALIDATION
QUALIFIER COMMENTS: U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J^{1} = Result is estimated (J) due to analysis out of holding time.
J^{2} = Result is estimated (J) due to laboratory duplicate RPD greater than 20%.

NOTES:
Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35210
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 6
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
NOVEMBER 2017

		SAMPLE NUMBER	**D35210**	**D35211**	**D35212**	**D35213**	**D35214**	**D35215**
		STATION LOCATION	**SD-05**	**SD-06**	**SD-07**	**SD-08**	**SD-09**	**SD-10**
		LABORATORY NUMBER	**180-72573-4**	**180-72573-5**	**180-72573-6**	**180-72573-7**	**180-72573-8**	**180-72573-9**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	11,000 $J^{1,2}$	160,000 $J^{1,2}$	9,000 $J^{1,2}$	6,700 $J^{1,2}$	14,000 $J^{1,2}$	61,000 $J^{1,2}$
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/13/2017	11/13/2017	11/13/2017	11/13/2017	11/13/2017	11/14/2017
		DATE ANALYZED	11/24/2017	11/22/2017	11/24/2017	11/24/2017	11/24/2017	11/27/2017
		% SOLID	81.2	38.4	83.4	78.9	73.3	50.7

S3VM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J^1 = Result is estimated (J) due to poor matrix spike recovery.
J^2 = Result is estimated (J) due to field duplicate RPD greater than 50%.

NOTES:

Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35210
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 6
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
NOVEMBER 2017

		SAMPLE NUMBER	**D35216**	**D35219**	**D35220**	**D35254**	**D35256**	**D35257**
		STATION LOCATION	**SD-11**	**SD-12**	**SD-13**	**SD-39**	**SD-41**	**SD-42**
		LABORATORY NUMBER	**180-72573-10**	**180-72573-11**	**180-72573-12**	**180-72573-13**	**180-72573-14**	**180-72573-15**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	42,000 $J^{1,2}$	50,000 $J^{1,2}$	43,000 $J^{1,2}$	74,000 $J^{1,2}$	13,000 $J^{1,2}$	170,000 $J^{1,2}$
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/14/2017	11/14/2017	11/14/2017	11/13/2017	11/14/2017	11/14/2017
		DATE ANALYZED	11/27/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017
		% SOLID	56.4	61	69.8	46.4	71.1	34.7

S3VM DATA VALIDATION QUALIFIER COMMENTS:

U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag, per the CLP Statement of Work.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.
J^1 = Result is estimated (J) due to poor matrix spike recovery.
J^2 = Result is estimated (J) due to field duplicate RPD greater than 50%.

NOTES:

Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35210
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 6
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
NOVEMBER 2017

		SAMPLE NUMBER	**D35258**	**D35275**	**D35276**	**D35277**	**D35278**	**D35279**
		STATION LOCATION	**SD-43**	**SD-08A**	**SD-12A**	**SD-100A**	**SD-100B**	**SD-100C**
		LABORATORY NUMBER	**180-72573-16**	**180-72573-19**	**180-72573-20**	**180-72573-1**	**180-72573-2**	**180-72573-3**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	3,400 $J^{1,2}$	66,000 $J^{1,2}$	40,000 $J^{1,2}$	93,000 $J^{1,2}$	110,000 $J^{1,2}$	120,000 $J^{1,2}$
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/14/2017	11/13/2017	11/14/2017	11/14/2017	11/14/2017	11/14/2017
		DATE ANALYZED	11/27/2017	11/24/2017	11/27/2017	11/27/2017	11/27/2017	11/27/2017
		% SOLID	80.5	56.5	55.2	44.5	36.8	44.7

S3VM DATA VALIDATION QUALIFIER COMMENTS:

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J^1 = Result is estimated (J) due to poor matrix spike recovery.
J^2 = Result is estimated (J) due to field duplicate RPD greater than 50%.

NOTES:

Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35231
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 7
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
NOVEMBER 2017

		SAMPLE NUMBER	**D35231**	**D35241**	**D35242**	**D35243**	**D35245**	**D35247**
		STATION LOCATION	**SD-22**	**SD-28**	**SD-29**	**SD-30**	**SD-32**	**SD-32A**
		LABORATORY NUMBER	**180-72664-1**	**180-72664-2**	**180-72664-3**	**180-72664-4**	**180-72664-5**	**180-72664-6**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	42,000	320,000	290,000	45,000	150,000	120,000
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017
		DATE ANALYZED	11/27/2017	11/28/2017	11/28/2017	11/30/2017	11/30/2017	11/29/2017
		% SOLID	60.8	24.4	22.5	62.6	44.5	35.3

S3VM DATA VALIDATION QUALIFIER COMMENTS:
U = Value is non-detected.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.

NOTES:
Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35231
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 7
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
NOVEMBER 2017

		SAMPLE NUMBER	**D35248**	**D35249**	**D35251**	**D35252**	**D35253**	**D35259**
		STATION LOCATION	**SD-33**	**SD-34**	**SD-36**	**SD-37**	**SD-38**	**SD-44**
		LABORATORY NUMBER	**180-72664-7**	**180-72664-8**	**180-72664-9**	**180-72664-10**	**180-72664-11**	**180-72664-12**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	75,000	100,000	470,000	90,000	110,000	100,000
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/16/2017	11/15/2017
		DATE ANALYZED	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/27/2017
		% SOLID	51.5	35.1	15.1	36.3	42.2	42.5

S3VM DATA VALIDATION QUALIFIER COMMENTS:
U = Value is non-detected.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.

NOTES:
Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35231
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 7
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
NOVEMBER 2017

		SAMPLE NUMBER	**D35260**	**D35280**	**D35281**	**D35282**	**D35283**	**D35284**
		STATION LOCATION	**SD-45**	**SD-21A**	**SD-23B**	**SD-23A**	**SD-22A**	**SD-26A**
		LABORATORY NUMBER	**180-72664-13**	**180-72664-15**	**180-72664-16**	**180-72664-17**	**180-72664-18**	**180-72664-19**
COMPOUND	**MDL**	**CRQL**						
Total Organic Carbon (TOC)	**746**	**1,000**	68,000	65,000	13,000	120,000	16,000	100,000
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/15/2017	11/16/2017
		DATE ANALYZED	11/27/2017	11/27/2017	11/28/2017	11/28/2017	11/28/2017	11/30/2017
		% SOLID	68.3	61	59.2	50.7	69	50.8

S3VM DATA VALIDATION QUALIFIER COMMENTS:
U = Value is non-detected.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.

NOTES:
Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0906F SDG: D35231
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 7
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
NOVEMBER 2017

		SAMPLE NUMBER	**D35285**	**D35286**	**D35287**
		STATION LOCATION	**SD-26B**	**SD-36A**	**SD-36B**
		LABORATORY NUMBER	**180-72664-20**	**180-72664-21**	**180-72664-22**
COMPOUND	**MDL**	**CRQL**			
Total Organic Carbon (TOC)	**746**	**1,000**	190,000	110,000	150,000
		DILUTION FACTOR	1.0	1.0	1.0
		DATE SAMPLED	11/16/2017	11/16/2017	11/16/2017
		DATE ANALYZED	11/30/2017	11/30/2017	11/30/2017
		% SOLID	29.1	32	22.6

S3VM DATA VALIDATION QUALIFIER COMMENTS:
U = Value is non-detected.
J = Results that are greater than the MDL but less than the CRQL are flagged (J) as estimated values with no superscripts.

NOTES:
Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

ATTACHMENT E
LOWER NEPONSET RIVER PCBS
START ANALYTICAL RESULTS TABLES
Samples Collected from 4 to 6 September 2018

TABLE 1

SUMMARY OF POLYCHLORINATED BIPHENYL FIELD SCREENING RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Sample Location	Lab Sample ID	Aroclor-1248	Aroclor-1254	Aroclor-1260
WBD-04 A	AB76454	**2,300**	**400**	ND (300)
WBD-04 B	AB76455	**1,900**	**400**	ND (300)
WBD-04 C	AB76456	**300**	**200**	ND (300)
WBD-04 D	AB76457	ND (500)	ND (300)	ND (300)
WBD-C2 A	AB76460	ND (500)	**130**	ND (300)
WBD-C2 B	AB76461	ND (500)	**130**	ND (300)
PTB-C1 A	AB76462	ND (500)	ND (300)	ND (300)
PTB-C1 B	AB76463	ND (500)	ND (300)	ND (300)
WBD-C05 A	AB76464	ND (500)	**400**	ND (300)
WBD-C05 B	AB76465	**3,400**	**1,200**	ND (300)
WBD-C05 C	AB76466	**12,000**	**2,500**	**1,700**
WBD-C1 A	AB76467	ND (500)	**200**	ND (300)
WBD-C1 B	AB76468	**1,100**	**300**	ND (300)
WBD-C1 D	AB76469	**1,600**	**500**	ND (300)
BCA-C101 A	AB76470	**500**	**200**	ND (300)
BCA-C103 A	AB76471	ND (500)	ND (300)	ND (300)
BCA-C01 A	AB76472	**400**	**200**	ND (300)
BCA-C01 B	AB76473	**400**	ND (03)	ND (300)
BCA-C3 A	AB76474	ND (500)	**900**	ND (300)
BCA-C3 B	AB76475	**4,400**	**700**	ND (300)
BCA-C3 C	AB76476	**16,000**	**1,900**	ND (300)
BCA-C3 D	AB76477	**11,000**	**1,000**	ND (300)
BCA-C3 E	AB76478	**900**	**200**	ND (300)
BCA-C3 F	AB76479	ND (500)	ND (300)	ND (300)
BCA-C3 A Lab Dup	AB76480	ND (500)	**700**	ND (300)
BCA-C02 A	AB76481	**500**	**400**	ND (300)
BCA-C02 B	AB76482	**8,600**	**900**	ND (300)
BCA-C02 C	AB76483	**500**	**200**	ND (300)
BCA-C02 D	AB76484	**300**	**200**	ND (300)

TABLE 1

SUMMARY OF POLYCHLORINATED BIPHENYL FIELD SCREENING RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Sample Location	Lab Sample ID	Aroclor-1248	Aroclor-1254	Aroclor-1260
BCA-C02 D Lab Dup	AB76485	**400**	**110**	ND (300)
BCA-C4 A	AB76486	**1,100**	**1,000**	ND (300)
BCA-C4 B	AB76487	**9,600**	**1,100**	ND (300)
BCA-C4 C	AB76488	**5,600**	**600**	ND (300)
BCA-C4 D	AB76489	**300**	ND (300)	ND (300)
BCA-C4 E	AB76490	**300**	ND (300)	ND (300)
BCA-C5 A	AB76491	**1,600**	**500**	ND (300)
BCA-C5 B	AB76492	**4,300**	**800**	ND (300)
BCA-C5 C	AB76493	**6,300**	**600**	**300**
BCA-C5 D	AB76494	**10,000**	**800**	**400**
BCA-C5 E	AB76495	**3,500**	**700**	**200**
BCA-C6 A	AB76496	ND (500)	**900**	ND (300)
BCA-C6 B	AB76497	**3,300**	**800**	ND (300)
BCA-C6 C	AB76498	**8,200**	**500**	ND (300)
BCA-C6 D	AB76499	**5,200**	**500**	ND (300)
BCA-C6 E	AB76500	**3,200**	**300**	ND (300)
BCA-C6 F	AB76501	**2,100**	**200**	ND (300)
BCA-C6 G	AB76502	**1,700**	**200**	ND (300)
WBD-C1 C	AB76503	**2,000**	**300**	ND (300)
BCA-C6 H	AB76504	**1,800**	**200**	ND (300)
BCA-C6 I	AB76505	**1,300**	**130**	ND (300)
BCA-C7 A	AB76506	**700**	**110**	ND (300)
BCA-C7 B	AB76507	**3,300**	**400**	ND (300)
BCA-C7 C	AB76508	**600**	ND (300)	ND (300)
THD-C1 A	AB76509	**1,700**	**300**	ND (300)
THD-C1 B	AB76510	**1,300**	**400**	ND (300)
THD-C1 C	AB76511	**1,800**	**600**	ND (300)
THD-C1 D	AB76512	**3,900**	**2,200**	**1,100**
THD-C101 A	AB76513	**3,800**	**1,600**	**900**

TABLE 1

SUMMARY OF POLYCHLORINATED BIPHENYL FIELD SCREENING RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Sample Location	Lab Sample ID	Aroclor-1248	Aroclor-1254	Aroclor-1260
THD-C2 A	AB76514	**300**	**200**	ND (300)
THD-C2 B	AB76515	**2,600**	**700**	ND (300)
THD-C2 C	AB76516	ND (1,000)	**1,900**	**1,300**
THD-C2 D	AB76517	**2,200**	**1,000**	**700**
THD-C3 A	AB76518	ND (500)	ND (300)	ND (300)
THD-C3 B	AB76519	ND (500)	**400**	ND (300)
THD-C3 C	AB76520	ND (500)	**200**	ND (300)
THD-C1 E	AB76521	**10,000**	**2,100**	**1,200**
THD-C1 G	AB76522	**14,000**	**3,500**	**1,300**
THD-C1 H	AB76523	**1,800**	**500**	ND (300)
THD-C1 F Lab Dup	AB76524	**23,000**	**3,200**	**2,400**
LCA- C1 A	AB76525	ND (500)	**300**	ND (300)
LCA- C1 B	AB76526	**2,300**	**500**	ND (300)
LCA-C2 A	AB76527	**18,000**	ND (50)	ND (50)
LCA-C2 B	AB76528	**10,000**	**5,200**	ND (0.6)
LCA-C2 C	AB76529	**26,000**	**4,500**	**4,400**
LCA-C2 D	AB76530	**8,800**	**2,800**	**2,200**
LCA-C2 E	AB76531	**58,000**	**12,000**	**6,200**
LCA-C3 A	AB76532	**18,000**	**2,400**	**1,200**
LCA-C3 B	AB76533	**8,500**	**3,400**	ND (600)
LCA-C3 C	AB76534	**30,000**	**21,000**	**16,000**
LCA-C3 D	AB76535	**50,000**	**8,600**	**3,200**
MBC-C1 A	AB76536	ND (500)	**300**	ND (300)
MBC-C1 B	AB76537	ND (500)	**200**	ND (300)
MBC-C1 C	AB76538	ND (500)	**400**	ND (300)
MBC-C1 D	AB76539	**3,700**	**900**	ND (300)
MBC-C1 E	AB76540	**2,100**	**600**	ND (300)
MBC-C1 F	AB76541	**2,500**	**400**	ND (300)
MBC-C1 G	AB76542	**300**	ND (300)	ND (300)

TABLE 1

SUMMARY OF POLYCHLORINATED BIPHENYL FIELD SCREENING RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Sample Location	Lab Sample ID	Aroclor-1248	Aroclor-1254	Aroclor-1260
UMB-C1 A	AB76543	**400**	**130**	ND (300)
UMB-C1 B	AB76544	ND (500)	**400**	ND (300)
UMB-C1 C	AB76545	**1,100**	**200**	ND (300)
UMB-C1 D	AB76546	ND (500)	**200**	ND (300)
UMB-C2 A	AB76547	ND (500)	ND (300)	ND (300)
UMB-C2 B	AB76548	**1,400**	**500**	**300**
UMB-C2 C	AB76549	**2,700**	**700**	ND (300)
UNR-C1 A	AB76550	ND (500)	ND (300)	ND (300)
UNR-C1 B	AB76551	ND (500)	ND (300)	ND (300)
UNR-C1 C	AB76552	ND (500)	ND (300)	ND (300)
UNR-C2 A	AB76553	ND (500)	**300**	ND (300)
UNR-C2 B	AB76554	ND (500)	**1,000**	ND (300)
UNR-C2 C	AB76555	ND (500)	**500**	ND (300)
UNR-C2 D	AB76556	**1,400**	**800**	ND (300)
UNR-C3 A	AB76557	ND (500)	**300**	ND (300)
UNR-C3 B	AB76558	ND (500)	ND (300)	ND (300)
UNR-C3 C	AB76559	ND (500)	ND (300)	ND (300)
UNR-C3 D	AB76560	ND (500)	ND (300)	ND (300)

NOTES:

Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) Mobile Laboratory using EPA Region I SOP, EIASOP-FLDPCB3, PCB's in Soil Field Method.
Lab RLs = Laboratory Reporting Limits.
Results in micrograms per Kilogram (μg/Kg). [Note: Results initially reported in milligrams per Kilograms (mg/Kg) and have been converted.]
Bolded values exceed laboratory RLs.
Lab dup = Laboratory duplicate sample result.
ND = Not detected above laboratory RLs.

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R3			PA41R4			PA41R5			PA41R6		
	Sample Location:	SD-01			SD-02			SD-03			SD-04		
	Sample Identifier:	D35475			D35476			D35477			D35478		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	52.9			89.4			63.1			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
1	PCB-1	2600000	J[3,6]		12000	UJ[1,6]		43000	J[3,6]		61000	J[3,6]	
1	PCB-2	42000			1100	U		1100	J		12000		
1	PCB-3	620000			1100	U[1]		15000			21000		
2	PCB-4	13000000	J+[3]		39000	U[1]		150000	J+[3]		720000	J+[3]	
2	PCB-5	37000	U		1100	U		1600	U		1900	U	
2	PCB-6	920000			4100	U[1]		45000			1500000		
2	PCB-7	150000			1100	U[1]		4500			21000		
2	PCB-8	2800000			26000	U[1]		140000			890000		
2	PCB-9	370000			1100	U		3700			41000		
2	PCB-10	1200000			1100	U		30000			38000		
2	PCB-11	64000	EB[2]		650	J EB[2]		24000	EB[2]		76000	EB[2]	
2	PCB-12/13	240000			2200	U		97000			200000		
2	PCB-14	37000	U		1100	U		1600	U		1900	U	
2	PCB-15	1500000			2900	U[1]		1000000			410000		
3	PCB-16	160000			1100	U[1]		100000			600000		
3	PCB-17	2900000			9700	U[1]		1000000			1100000		
3	PCB-18/30	780000			2200	U[1]		410000			2200000		
3	PCB-19	7900000			5900	U[1]		890000			430000		
3	PCB-20/28	870000			5800	U[1]		3100000			3700000		
3	PCB-21/33	66000	J EB[2]		680	J EB[2]		170000	EB[2]		250000	EB[2]	
3	PCB-22	160000			1100	U[1]		590000			830000		
3	PCB-23	37000	U		1100	U		1600	U		1900	U	
3	PCB-24	37000	U		1100	U		1600	U		1900	U	
3	PCB-25	1200000			1900	U[1]		430000			1500000		
3	PCB-26/29	1500000			2200	U[1]		780000			2400000		
3	PCB-27	2000000			2800	U[1]		480000			200000		
3	PCB-31	2200000			2500	U[1]		700000			3100000		
3	PCB-32	2800000			4700	U[1]		1300000			800000		
3	PCB-34	37000	U[1]		1100	U		18000			51000		
3	PCB-35	37000	U		1100	U		16000			22000		
3	PCB-36	37000	U		1100	U		1600	U		1900	U	
3	PCB-37	200000			1100	U[1]		580000			530000		
3	PCB-38	37000	U		1100	U		2300			2300		
3	PCB-39	10000	J		1100	U		14000			15000		
4	PCB-40/71	710000			2200	U[1]		1000000			1400000		
4	PCB-41	21000	J		1100	U		150000			130000		
4	PCB-42	290000			1100	U[1]		650000			870000		
4	PCB-43	86000			1100	U		130000			170000		
4	PCB-44/47/65	4100000			3400	U[1]		2400000			2900000		
4	PCB-45/51	1200000			2200	U[1]		610000			490000		
4	PCB-46	120000			1100	U		130000			200000		
4	PCB-48	34000	J		1100	U		240000			210000		
4	PCB-49/69	2200000			2200	U[1]		1600000			2100000		
4	PCB-50/53	1300000			2200	U[1]		490000			510000		
4	PCB-52	1800000			1900	U[1]		2100000			3100000		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R3			PA41R4			PA41R5			PA41R6		
	Sample Location:	SD-01			SD-02			SD-03			SD-04		
	Sample Identifier:	D35475			D35476			D35477			D35478		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	52.9			89.4			63.1			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
4	PCB-54	530000			1100	U		19000			14000		
4	PCB-55	3700	J		1100	U		29000			20000		
4	PCB-56	30000	J EB[2]		220	J EB[2]		490000	EB[2]		310000	EB[2]	
4	PCB-57	38000			1100	U		37000			36000		
4	PCB-58	37000	U		1100	U		5900			10000		
4	PCB-59/62/75	130000			3400	U		280000			250000		
4	PCB-60	6500	J		1100	U		190000			81000		
4	PCB-61/70/74/76	380000	EB[2]		1000	J EB[2]		1800000	EB[2]		1800000	EB[2]	
4	PCB-63	89000			1100	U		130000			120000		
4	PCB-64	280000			1100	U[1]		1200000			1200000		
4	PCB-66	340000	EB[2]		650	J EB[2]		1100000	EB[2]		1100000	EB[2]	
4	PCB-67	29000	J		1100	U		51000			67000		
4	PCB-68	130000			1100	U		18000			22000		
4	PCB-72	110000			1100	U		29000			35000		
4	PCB-73	230000			1100	U		41000			37000		
4	PCB-77	37000	U[1]		1100	U[1]		160000			140000		
4	PCB-78	37000	U		1100	U		1600	U		1900	U	
4	PCB-79	37000	U[1]		1100	U		6000			8800		
4	PCB-80	37000	U		1100	U		1600	U		1900	U	
4	PCB-81		U	4000		U	130	5100			2100		
5	PCB-82	37000	U[1]		1100	U		130000			150000		
5	PCB-83	77000			1100	U		69000			81000		
5	PCB-84	180000	EB[2]		1100	U		240000	EB[2]		340000	EB[2]	
5	PCB-85/116/117	210000			3400	U		190000			220000		
5	PCB-86/87/97/ 109/119/125	310000			6700	U		440000			530000		
5	PCB-88/91	450000			2200	U		190000			220000		
5	PCB-89	8800	J		1100	U		28000			39000		
5	PCB-90/101/113	610000	EB[2]		350	J EB[2]		460000	EB[2]		530000	EB[2]	
5	PCB-92	300000			1100	U		150000			170000		
5	PCB-93/100	240000			2200	U		20000			24000		
5	PCB-94	74000			1100	U		14000			13000		
5	PCB-95	390000			1100	U[1]		520000			630000		
5	PCB-96	22000	J		1100	U		17000			20000		
5	PCB-98/102	100000			2200	U		70000			76000		
5	PCB-99	380000	EB[2]		1100	U		290000	EB[2]		350000	EB[2]	
5	PCB-103	62000			1100	U		9200			10000		
5	PCB-104	16000	J		1100	U		450	J		550	J	
5	PCB-105	97000	EB[2]		210	J EB[2]		250000	EB[2]		200000	EB[2]	
5	PCB-106	37000	U		1100	U		1600	U		1900	U	
5	PCB-107	63000			1100	U		38000			42000		
5	PCB-108/124	75000	U[1]		2200	U		18000			14000		
5	PCB-110/115	810000			2200	U[1]		850000			1000000		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R3			PA41R4			PA41R5			PA41R6		
	Sample Location:	SD-01			SD-02			SD-03			SD-04		
	Sample Identifier:	D35475			D35476			D35477			D35478		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	52.9			89.4			63.1			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
5	PCB-111	37000	U		1100	U		600	J		540	J	
5	PCB-112	37000	U		1100	U		1600	U		1900	U	
5	PCB-114	EMPC	J	7400		UM	130	22000			16000		
5	PCB-118	500000			1100	U[1]		510000			540000		
5	PCB-120	9800	J		1100	U		1700			2000		
5	PCB-121	11000	J		1100	U		1600	U		1900	U	
5	PCB-122	37000	U		1100	U		8600			6400		
5	PCB-123		UM	6700		UM	200	12000			9300		
5	PCB-126		UM	6400		UM	190	2800			2300		
5	PCB-127	37000	U		1100	U		470	J		1900	U	
6	PCB-128/166	75000			2200	U		42000			35000		
6	PCB-129/138/163	700000	EB[2]		340	J EB[2]		240000	EB[2]		220000	EB[2]	
6	PCB-130	38000			1100	U		19000			19000		
6	PCB-131	6600	J		1100	U		4500			4200		
6	PCB-132	190000	EB[2]		1100	U		95000	EB[2]		96000	EB[2]	
6	PCB-133	48000			1100	U		4500			5300		
6	PCB-134	78000			1100	U		20000			18000		
6	PCB-135/151	280000			150	J		72000			78000		
6	PCB-136	86000	EB[2]		1100	U		29000	EB[2]		32000	EB[2]	
6	PCB-137	27000	J		1100	U		16000			13000		
6	PCB-139/140	75000	U		2200	U		6000			5700		
6	PCB-141	45000	EB[2]		1100	U		34000	EB[2]		29000	EB[2]	
6	PCB-142	37000	U		1100	U		1600	U		1900	U	
6	PCB-143	37000	U		1100	U		1400	J		670	J	
6	PCB-144	10000	J		1100	U		9200			9300		
6	PCB-145	37000	U		1100	U		240	J		300	J	
6	PCB-146	130000			1100	U		31000			34000		
6	PCB-147/149	610000			2200	U[1]		180000			180000		
6	PCB-148	18000	J		1100	U		470	J		690	J	
6	PCB-150	9200	J		1100	U		470	J		500	J	
6	PCB-152	12000	J		1100	U		780	J		650	J	
6	PCB-153/168	460000			2200	U[1]		150000			140000		
6	PCB-154	48000			1100	U		3300			3800		
6	PCB-155	2400	J		1100	U		1600	U		130	J	
6	PCB-156/157	78000			2200	U[1]		37000			26000		
6	PCB-158	42000			1100	U		25000			20000		
6	PCB-159	37000	U		1100	U		1600	U		1900	U	
6	PCB-160	37000	U		1100	U		1600	U		1900	U	
6	PCB-161	37000	U		1100	U		1600	U		1900	U	
6	PCB-162	37000	U		1100	U		960	J		510	J	
6	PCB-164	34000	J		1100	U		13000			10000		
6	PCB-165	7000	J		1100	U		350	J		590	J	
6	PCB-167	25000	J			UM	120	11000			8000		
6	PCB-169		UM	5300		UM	160		UM	220		UM	260
7	PCB-170	110000	EB[2]		1100	U		39000	EB[2]		38000	EB[2]	
7	PCB-171/173	33000	J		2200	U		12000			11000		
7	PCB-172	24000	J		1100	U		6700			7100		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R3			PA41R4			PA41R5			PA41R6		
	Sample Location:	SD-01			SD-02			SD-03			SD-04		
	Sample Identifier:	D35475			D35476			D35477			D35478		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	52.9			89.4			63.1			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
7	PCB-174	75000	EB[2]		120	J EB[2]		34000	EB[2]		35000	EB[2]	
7	PCB-175	4100	J		1100	U		1700			1900		
7	PCB-176	11000	J		1100	U		4700			5600		
7	PCB-177	75000			1100	U		22000			25000		
7	PCB-178	49000			1100	U		7800			9400		
7	PCB-179	51000			58	J		15000			18000		
7	PCB-180/193	240000			2200	U[1]		79000			83000		
7	PCB-181	37000	U		1100	U		480	J		310	J	
7	PCB-182	3100	J		1100	U		260	J		340	J	
7	PCB-183/185	58000	J EB[2]		2200	U		23000	EB[2]		24000	EB[2]	
7	PCB-184	37000	U		1100	U		1600	U		67	J	
7	PCB-186	37000	U		1100	U		1600	U		1900	U	
7	PCB-187	160000			170	J		42000			48000		
7	PCB-188	4100	J		1100	U		81	J		80	J	
7	PCB-189	8400	J			UM	110	2300			2200		
7	PCB-190	37000	U[1]		1100	U		8800			8500		
7	PCB-191	37000	U[1]		1100	U		1600	U[1]		1900	U[1]	
7	PCB-192	37000	U		1100	U		1600	U		1900	U	
8	PCB-194	120000			1100	U		24000			30000		
8	PCB-195	38000			1100	U		8900			11000		
8	PCB-196	43000			1100	U		10000			12000		
8	PCB-197/200	75000	U[1]		2200	U		3100			3700	U[1]	
8	PCB-198/199	83000	EB[2]		2200	U		23000	EB[2]		26000	EB[2]	
8	PCB-201	8800	J		1100	U		2400			2900		
8	PCB-202	15000	J		1100	U		4600			5100		
8	PCB-203	50000			1100	U		14000			15000		
8	PCB-204	37000	U		1100	U		1600	U		1900	U	
8	PCB-205	37000	U[1]		1100	U		1600	U[1]		1900	U[1]	
9	PCB-206	40000	EB[2]		1100	U		12000	EB[2]		13000	EB[2]	
9	PCB-207	4000	J		1100	U		1200	J		1300	J	
9	PCB-208	6100	J		1100	U		3800			4000		
10	PCB-209	37000	U		1100	U		4900			6600		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R3			PA41R4			PA41R5			PA41R6		
	Sample Location:	SD-01			SD-02			SD-03			SD-04		
	Sample Identifier:	D35475			D35476			D35477			D35478		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	52.9			89.4			63.1			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
	Total MoCB	3300000	J		ND			59000	J		94000	J	
	Total DiCB	20000000	J		650	J		1500000	J		3900000	J	
	Total TrCB	23000000	J		680	J		11000000	J		18000000	J	
	Total TeCB	14000000	J		1870	J		15000000	J		17000000	J	
	Total PeCB	4900000	J		560	J		4600000	J		5200000	J	
	Total HxCB	3100000	J		490	J		1000000	J		990000	J	
	Total HpCB	910000	J		350	J		300000	J		320000	J	
	Total OcCB	360000	J		ND			90000	J		100000	J	
	Total NoCB	50000	J		ND			17000	J		18000	J	
	DeCB	ND			ND			4900			6600		
	Total PCBs^	70,000,000	J		4,600	J		33,000,000	J		46,000,000	J	
	Total TEQ#	21	J		0.0063	J		320	J		270	J	

The WHO Toxic congeners are identified by the highlighted background.

* The values in this column are either the Estimated Detection Limits (EDL), Method Detection Limits (MDL), or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are flagged as "EMPC" in the Result column and are qualified with a "J" since they are estimated values. EMPC results are not included in the Total Homologues.

The Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds, Society of Toxicology, July 7, 2006. The TE values are calculated using the final validated data and include the positive results and estimated values. The TE values are estimated (J) when any individual congener is estimated. The TE calculations do not include RL values.

^ Total PCBs are the sum of the total homologues.

TIER 2/S4VEM DATA VALIDATION QUALIFIER COMMENTS:

J Sample concentrations reported below the laboratory reporting limit are flagged (J) on the Data Summary Table as estimated values with no superscripts.

1 Blank contamination; the positive sample results that are less than the CRQL are reported as non-detects (U) at the CRQL; positive sample sample results greater than the CRQL but less than the blank result are reported as non-detect (U) at the adjusted blank concentration.

2 Equipment blank contamination; detects for the affected compounds are flagged (EB) on the Data Summary Table to indicate the presence of an unknown amount of sampling error as evidenced by the aqueous equipment blank contamination.

3 LCS/LCSD recovery above QC limits; estimate high (J+) all positive results for PCB 1 and PCB 4 in all sediment samples.

4 Congener exceeded the instrument calibration range; estimate (J) the affected analytes in samples PA41R8 and PA41R9.

5 Labeled compound ion abundance ratio criteria not met; estimate (J) positive results for PCB 1 and PCB 2 in sample PA41R9.

6 Field duplicate precision outside criteria; estimate (J, UJ) the positive results and non-detects for PCB 1 in all sediment samples.

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R7			PA41R8			PA41R9			PA41S0		
	Sample Location:	SD-05			SD-06			SD-07			SD-08		
	Sample Identifier:	D35479			D35480			D35481			D35482		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	42.9			55.5			38.7			59.2		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*
1	PCB-1	38000000	J[3,6]		47000000	J[3,6]		1400000000	J[3,4,5,6]		38000	J[3,6]	
1	PCB-2	80000			380000			3200000	J[5]		1200	J	
1	PCB-3	2900000			8900000			100000000	J[4]		10000		
2	PCB-4	63000000	J+[3]		200000000	J[3,4]		2500000000	J[3,4]		99000	J+[3]	
2	PCB-5	27000	J		36000	U		4300000			1600	J	
2	PCB-6	6900000			28000000			300000000	J[4]		19000		
2	PCB-7	110000			3000000			4900000			3200		
2	PCB-8	28000000			190000000	J[4]		1600000000	J[4]		100000		
2	PCB-9	390000			910000			16000000			3300		
2	PCB-10	5600000			12000000			230000000	J[4]		5900		
2	PCB-11	440000	EB[2]		1200000	EB[2]		23000000	EB[2]		2100	EB[2]	
2	PCB-12/13	800000			2200000			38000000			5500		
2	PCB-14	45000	U		36000	U		48000	U		1600	U	
2	PCB-15	2000000			28000000			72000000			39000		
3	PCB-16	920000			3100000			14000000			41000		
3	PCB-17	15000000			92000000	J[4]		600000000	J[4]		73000		
3	PCB-18/30	2800000			19000000			89000000			94000		
3	PCB-19	12000000			41000000			390000000	J[4]		24000		
3	PCB-20/28	3600000			73000000			130000000			200000		
3	PCB-21/33	180000	EB[2]		72000	U		97000	U		110000	EB[2]	
3	PCB-22	710000			1300000			25000000			60000		
3	PCB-23	49000			170000			2200000			310	J	
3	PCB-24	45000	U		36000	U		14000000			1600	U	
3	PCB-25	3500000			21000000			140000000	J[4]		20000		
3	PCB-26/29	6400000			18000000			250000000	J[4]		34000		
3	PCB-27	6800000			25000000			270000000	J[4]		15000		
3	PCB-31	5900000			18000000			250000000	J[4]		140000		
3	PCB-32	9900000			48000000			400000000	J[4]		42000		
3	PCB-34	460000			1000000			16000000			2000		
3	PCB-35	14000	J		110000			48000	U		2300		
3	PCB-36	45000	U		36000	U		1600000			1600	U	
3	PCB-37	320000			960000			9200000			53000		
3	PCB-38	45000	U		28000	J		48000	U		1600	U	
3	PCB-39	42000	J		240000			2000000			1100	J	
4	PCB-40/71	2500000			12000000			90000000			49000		
4	PCB-41	44000	J		1300000			12000000			6900		
4	PCB-42	1100000			4500000			39000000			36000		
4	PCB-43	990000			3100000			32000000			7200		
4	PCB-44/47/65	7800000			31000000			280000000			120000		
4	PCB-45/51	2800000			9800000			110000000			22000		
4	PCB-46	300000			1100000			11000000			7300		
4	PCB-48	99000			410000			48000	U		25000		
4	PCB-49/69	5600000			23000000			210000000	J[4]		91000		
4	PCB-50/53	3600000			17000000			120000000			18000		
4	PCB-52	5500000			19000000			200000000	J[4]		140000		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R7			PA41R8			PA41R9			PA41S0		
	Sample Location:	SD-05			SD-06			SD-07			SD-08		
	Sample Identifier:	D35479			D35480			D35481			D35482		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	42.9			55.5			38.7			59.2		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*
4	PCB-54	230000			810000			7300000			1600	U[1]	
4	PCB-55	45000	U		50000			48000	U		1400	J	
4	PCB-56	110000	EB[2]		490000	EB[2]		1600000	EB[2]		52000	EB[2]	
4	PCB-57	290000			1100000			11000000			950	J	
4	PCB-58	45000	U		91000			48000	U		770	J	
4	PCB-59/62/75	790000			2200000			28000000			12000		
4	PCB-60	20000	J		150000			48000	U		3100		
4	PCB-61/70/74/76	840000	EB[2]		5300000	EB[2]		20000000	EB[2]		200000	EB[2]	
4	PCB-63	650000			2900000			28000000			5600		
4	PCB-64	2000000			4800000			89000000			49000		
4	PCB-66	410000	EB[2]		2900000	EB[2]		9500000	EB[2]		130000	EB[2]	
4	PCB-67	68000			360000			1800000			4300		
4	PCB-68	220000			570000			7400000			1600		
4	PCB-72	250000			730000			9300000			2900		
4	PCB-73	45000	U		630000			6400000			1700		
4	PCB-77	100000			540000			2300000			12000		
4	PCB-78	45000	U		36000	U		48000	U		1600	U	
4	PCB-79	45000	U[1]		36000	U[1]		48000	U		1600		
4	PCB-80	45000	U		36000	U		48000	U		1600	U	
4	PCB-81		U	7500	17000	J			U	840000	280	J	
5	PCB-82	64000			200000			1600000			13000		
5	PCB-83	280000			930000			13000000			12000		
5	PCB-84	660000	EB[2]		1500000	EB[2]		26000000	EB[2]		42000	EB[2]	
5	PCB-85/116/117	250000			830000			9700000			21000		
5	PCB-86/87/97/ 109/119/125	550000			1900000			16000000			94000		
5	PCB-88/91	940000			3000000			41000000			20000		
5	PCB-89	48000			55000			1800000			2000		
5	PCB-90/101/113	1200000	EB[2]		3100000	EB[2]		38000000	EB[2]		150000	EB[2]	
5	PCB-92	1000000			2600000			42000000			31000		
5	PCB-93/100	210000			530000			8200000			1600	J	
5	PCB-94	160000			450000			6900000			800	J	
5	PCB-95	1800000			4100000			67000000			110000		
5	PCB-96	88000			240000			3900000			890	J	
5	PCB-98/102	280000			890000			12000000			5500		
5	PCB-99	680000	EB[2]		2300000	EB[2]		21000000	EB[2]		76000	EB[2]	
5	PCB-103	110000			280000			4400000			1800		
5	PCB-104	45000	U		16000	J		260000			68	J	
5	PCB-105	98000	EB[2]		770000	EB[2]		1200000	EB[2]		23000	EB[2]	
5	PCB-106	45000	U		36000	U		48000	U		1600	U	
5	PCB-107	98000			430000			3200000			11000		
5	PCB-108/124	91000	U[1]		72000	U[1]		97000	U		3900		
5	PCB-110/115	2700000			7400000			110000000			180000		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R7			PA41R8			PA41R9			PA41S0		
	Sample Location:	SD-05			SD-06			SD-07			SD-08		
	Sample Identifier:	D35479			D35480			D35481			D35482		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	42.9			55.5			38.7			59.2		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*
5	PCB-111	45000	U		19000	J		48000	U		150	J	
5	PCB-112	45000	U		36000	U		48000	U		1600	U	
5	PCB-114	EMPC	J	8200	89000				U	570000	1900		
5	PCB-118	640000			3100000			13000000			160000		
5	PCB-120	17000	J		33000	J		590000			940	J	
5	PCB-121	45000	U		7700	J		48000	U		1600	U	
5	PCB-122	45000	U		22000	J		48000	U		1000	J	
5	PCB-123		UM	8100	38000				U	520000	1500	J	
5	PCB-126		U	8600	11000	J			U	580000	480	J	
5	PCB-127	45000	U		36000	U		48000	U		280	J	
6	PCB-128/166	91000	U[1]		260000			1700000			20000		
6	PCB-129/138/163	730000	EB[2]		2100000	EB[2]		21000000	EB[2]		130000	EB[2]	
6	PCB-130	83000			150000			2800000			8900		
6	PCB-131	45000	U		24000	J		48000	U		1900		
6	PCB-132	340000	EB[2]		550000	EB[2]		11000000	EB[2]		48000	EB[2]	
6	PCB-133	100000			99000			3500000			1900		
6	PCB-134	110000			320000			2900000			8700		
6	PCB-135/151	620000			1100000			21000000			32000		
6	PCB-136	160000	EB[2]		330000	EB[2]		5500000	EB[2]		14000	EB[2]	
6	PCB-137	21000	J		100000			48000	U		7500		
6	PCB-139/140	34000	J		59000	J		1100000			2500	J	
6	PCB-141	41000	J EB[2]		170000	EB[2]		48000	U		16000	EB[2]	
6	PCB-142	45000	U		36000	U		48000	U		1600	U	
6	PCB-143	45000	U		11000	J		48000	U		320	J	
6	PCB-144	45000	U		54000			48000	U		4100		
6	PCB-145	45000	U		36000	U		48000	U		76	J	
6	PCB-146	350000			380000			11000000			16000		
6	PCB-147/149	820000			1900000			27000000			86000		
6	PCB-148	21000	J		20000	J		840000			170	J	
6	PCB-150	9800	J		28000	J		480000			180	J	
6	PCB-152	12000	J		29000	J		48000	U		180	J	
6	PCB-153/168	530000			1300000			15000000			90000		
6	PCB-154	89000			120000			3100000			1400	J	
6	PCB-155	45000	U		2500	J		48000	U		1600	U	
6	PCB-156/157	91000	U[1]		330000			1100000			17000		
6	PCB-158	38000	J		180000			680000			11000		
6	PCB-159	45000	U		36000	U		48000	U		1600	U	
6	PCB-160	45000	U		36000	U		48000	U		1600	U	
6	PCB-161	45000	U		36000	U		48000	U		1600	U	
6	PCB-162	5500	J		10000	J		48000	U		1600	U	
6	PCB-164	30000	J		110000			710000			8800		
6	PCB-165	12000	J		12000	J		48000	U		1600	U	
6	PCB-167	20000	J		96000				U	460000	6300		
6	PCB-169		UM	6400		UM	5100		U	370000		UM	230
7	PCB-170	150000	EB[2]		490000	EB[2]		5700000	EB[2]		18000	EB[2]	
7	PCB-171/173	52000	J		140000			1900000			5800		
7	PCB-172	42000	J		90000			1400000			2900		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41R7			PA41R8			PA41R9			PA41S0		
	Sample Location:	SD-05			SD-06			SD-07			SD-08		
	Sample Identifier:	D35479			D35480			D35481			D35482		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Sample		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	42.9			55.5			38.7			59.2		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*	Result	Flag	EMPC/ EDL/ MDL*
7	PCB-174	170000	EB[2]		370000	EB[2]		5800000	EB[2]		16000	EB[2]	
7	PCB-175	45000	U		20000	J		48000	U		650	J	
7	PCB-176	32000	J		49000			1300000			2100		
7	PCB-177	190000			280000			7200000			9500		
7	PCB-178	110000			130000			3800000			3100		
7	PCB-179	130000			210000			5100000			6200		
7	PCB-180/193	350000			1000000			13000000			36000		
7	PCB-181	45000	U		8400	J		48000	U		330	J	
7	PCB-182	12000	J		5200	J		48000	U		180	J	
7	PCB-183/185	89000	J EB[2]		270000	EB[2]		3500000	EB[2]		11000	EB[2]	
7	PCB-184	45000	U		36000	U		48000	U		1600	U	
7	PCB-186	45000	U		36000	U		48000	U		1600	U	
7	PCB-187	370000			580000			14000000			17000		
7	PCB-188	45000	U		4700	J		48000	U		58	J	
7	PCB-189	12000	J		32000	J		360000			960	J	
7	PCB-190	45000	U[1]		120000			1600000			3500		
7	PCB-191	45000	U[1]		36000	U[1]		48000	U		1600	U[1]	
7	PCB-192	45000	U		36000	U		48000	U		1600	U	
8	PCB-194	200000			370000			7300000			8400		
8	PCB-195	66000			140000			2700000			2900		
8	PCB-196	74000			150000			2800000			4400		
8	PCB-197/200	91000	U[1]		72000	U[1]		930000			3200	U[1]	
8	PCB-198/199	190000	EB[2]		300000	EB[2]		7200000	EB[2]		11000	EB[2]	
8	PCB-201	21000	J		34000	J		680000			1200	J	
8	PCB-202	41000	J		61000			1300000			2500		
8	PCB-203	91000			180000			3800000			6400		
8	PCB-204	45000	U		36000	U		48000	U		1600	U	
8	PCB-205	45000	U		36000	U[1]		510000			1600	U[1]	
9	PCB-206	86000	EB[2]		130000	EB[2]		2800000	EB[2]		6700	EB[2]	
9	PCB-207	9100	J		15000	J		48000	U		790	J	
9	PCB-208	23000	J		32000	J		880000			2300		
10	PCB-209	45000	U[1]		36000	U[1]		550000			3300		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

Sample No.:		**PA41R7**			**PA41R8**			**PA41R9**			**PA41S0**	
Sample Location:		**SD-05**			**SD-06**			**SD-07**			**SD-08**	
Sample Identifier:		**D35479**			**D35480**			**D35481**			**D35482**	
Sample Type:		**Field Sample**			**Field Sample**			**Field Sample**			**Field Sample**	
Matrix:		**Sediment**			**Sediment**			**Sediment**			**Sediment**	
Dilution Factor:		**1**			**1**			**1**			**1**	
% Solids:		**42.9**			**55.5**			**38.7**			**59.2**	
Units:		**ng/kg (dry)**			**ng/kg (dry)**			**ng/kg (dry)**			**ng/kg (dry)**	
CL#	**Compounds**	**Result**	**Flag**	**EMPC/ EDL/ MDL***	**Result**	**Flag**	**EMPC/ EDL/ MDL***	**Result**	**Flag**	**EMPC/ EDL/ MDL***	**Result**	**Flag**	**EMPC/ EDL/ MDL***
	Total MoCB	41000000	J		56000000	J		1500000000	J		49000	J	
	Total DiCB	110000000	J		470000000	J		4700000000	J		280000	J	
	Total TrCB	69000000	J		360000000	J		2600000000	J		910000	J	
	Total TeCB	36000000	J		150000000	J		1300000000	J		1000000	J	
	Total PeCB	12000000	J		35000000	J		440000000	J		970000	J	
	Total HxCB	4200000	J		9800000	J		130000000	J		530000	J	
	Total HpCB	1700000	J		3800000	J		64000000	J		130000	J	
	Total OcCB	680000	J		1200000	J		27000000	J		37000	J	
	Total NoCB	120000	J		180000	J		3700000	J		9800	J	
	DeCB	ND			ND			550000			3300		
	Total PCBs^	270,000,000	J		1,100,000,000	J		11,000,000,000	J		3,900,000	J	
	Total TEQ#	33	J		1300	J		710	J		56	J	

The WHO Toxic congeners are identifed by the highlighted background.

* The values in this column are either the Estimated Detection Limits (EDL), Method Detection Limits (MDL), or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are flagged as “EMPC” in the Result column and are qualified with a "J" since they are estimated values. EMPC results are not included in the Total Homologues.

\# The Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds, Society of Toxicology, July 7, 2006. The TE values are calculated using the final validated data and include the positive results and estimated values. The TE values are estimated (J) when any individual congener is estimated. The TE calculations do not include RL values.

^ Total PCBs are the sum of the total homologues.

TIER 2/S4VEM DATA VALIDATION QUALIFIER COMMENTS:

J Sample concentrations reported below the laboratory reporting limit are flagged (J) on the Data Summary Table as estimated values with no superscripts.

1 Blank contamination; the positive sample results that are less than the CRQL are reported as non-detects (U) at the CRQL; positive sample sample results greater than the CRQL but less than the blank result are reported as non-detect (U) at the adjusted blank concentration.

2 Equipment blank contamination; detects for the affected compounds are flagged (EB) on the Data Summary Table to indicate the presence of an unknown amount of sampling error as evidenced by the aqueous equipment blank contamination.

3 LCS/LCSD recovery above QC limits; estimate high (J+) all positive results for PCB 1 and PCB 4 in all sediment samples.

4 Congener exceeded the instrument calibration range; estimate (J) the affected analytes in samples PA41R8 and PA41R9.

5 Labeled compound ion abundance ratio criteria not met; estimate (J) positive results for PCB 1 and PCB 2 in sample PA41R9.

6 Field duplicate precision outside criteria; estimate (J, UJ) the positve results and non-detects for PCB 1 in all sediment samples.

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41S1			PA41S2			PA41S3			PA41S4		
	Sample Location:	SD-09			SD-10			SD-11			SD-12		
	Sample Identifier:	D35483			D35484			D35485			D35486		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Duplicate		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	53.1			55.0			69.3			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
1	PCB-1	43000	J[3,6]		19000	UJ[1,6]		6100000	J[3,6]		130000	J[3,6]	
1	PCB-2	260	J		100	J		39000			12000		
1	PCB-3	4700			1700	U[1]		1100000			26000		
2	PCB-4	100000	J+[3]		59000	U[1]		29000000	J+[3]		840000	J+[3]	
2	PCB-5	1800	U		1700	U		28000	U		1900	U	
2	PCB-6	11000			1700	U[1]		4700000			1600000		
2	PCB-7	1800	U[1]		1700	U[1]		1000000			23000		
2	PCB-8	60000			39000	U[1]		23000000			990000		
2	PCB-9	1800	U[1]		1700	U[1]		310000			42000		
2	PCB-10	5300			1700	U[1]		1600000			49000		
2	PCB-11	1500	J EB[2]		1100	J EB[2]		310000	EB[2]		79000	EB[2]	
2	PCB-12/13	3700	U[1]		3400	U[1]		1000000			200000		
2	PCB-14	1800	U		1700	U		28000	U		1900	U	
2	PCB-15	7300			4400	U[1]		9300000			410000		
3	PCB-16	1800	U[1]		1700	U[1]		1300000			640000		
3	PCB-17	24000			15000	U[1]		18000000			1200000		
3	PCB-18/30	6500			3400	U[1]		6400000			2300000		
3	PCB-19	16000			9000	U[1]		7400000			440000		
3	PCB-20/28	16000			8800	U[1]		24000000			3900000		
3	PCB-21/33	1400	J EB[2]		830	J EB[2]		1600000	EB[2]		250000	EB[2]	
3	PCB-22	1800	U[1]		1700	U[1]		2400000			840000		
3	PCB-23	1800	U		1700	U		30000			1900	U	
3	PCB-24	1800	U		1700	U		28000	U		1900	U	
3	PCB-25	5800			1700	U[1]		6000000			1600000		
3	PCB-26/29	7600			3400	U[1]		6800000			2400000		
3	PCB-27	8000			1700	U[1]		4800000			230000		
3	PCB-31	9000			3700	U[1]		15000000			3200000		
3	PCB-32	13000			7100	U[1]		9700000			860000		
3	PCB-34	1800	U[1]		1700	U		310000			53000		
3	PCB-35	1800	U		1700	U		63000			21000		
3	PCB-36	1800	U		1700	U		28000	U		1900	U	
3	PCB-37	1800	U[1]		1700	U[1]		2200000			530000		
3	PCB-38	1800	U		1700	U		28000	U		2100		
3	PCB-39	1800	U		1700	U		77000			15000		
4	PCB-40/71	4900			3400	U[1]		5400000			1300000		
4	PCB-41	320	J		540	J		160000			140000		
4	PCB-42	2600			1700	U[1]		2900000			840000		
4	PCB-43	1800	U[1]		1700	U[1]		910000			160000		
4	PCB-44/47/65	14000			7000			12000000			2900000		
4	PCB-45/51	3900			3400	U[1]		3100000			520000		
4	PCB-46	880	J		740	J		690000			210000		
4	PCB-48	510	J		310	J		670000			190000		
4	PCB-49/69	11000			4400			9300000			2000000		
4	PCB-50/53	5900			3400	U[1]		4400000			530000		
4	PCB-52	17000			16000			9900000			3000000		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41S1			PA41S2			PA41S3			PA41S4		
	Sample Location:	SD-09			SD-10			SD-11			SD-12		
	Sample Identifier:	D35483			D35484			D35485			D35486		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Duplicate		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	53.1			55.0			69.3			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
4	PCB-54	1800	U[1]		1700	U		190000			14000		
4	PCB-55	1800	U		1700	U		69000			21000		
4	PCB-56	1200	J EB[2]		1100	J EB[2]		1600000	EB[2]		300000	EB[2]	
4	PCB-57	340	J		90	J		220000			34000		
4	PCB-58	1800	U		90	J		37000			8500		
4	PCB-59/62/75	5500	U[1]		5100	U[1]		940000			250000		
4	PCB-60	320	J		410	J		350000			80000		
4	PCB-61/70/74/76	8600	EB[2]		7200	EB[2]		8100000	EB[2]		1700000	EB[2]	
4	PCB-63	1800	U[1]		1700	U[1]		830000			120000		
4	PCB-64	2800			1700	U[1]		3600000			1200000		
4	PCB-66	5100	EB[2]		4500	EB[2]		5400000	EB[2]		1100000	EB[2]	
4	PCB-67	160	J		160	J		160000			64000		
4	PCB-68	440	J		190	J		160000			21000		
4	PCB-72	600	J		310	J		220000			34000		
4	PCB-73	460	J		230	J		28000	U		52000		
4	PCB-77	1800	U[1]		1700	U[1]		720000			140000		
4	PCB-78	1800	U		1700	U		28000	U		1900	U	
4	PCB-79	1800	U[1]		1700	U[1]		31000			8700		
4	PCB-80	1800	U		1700	U		28000	U		1900	U	
4	PCB-81		U	190		UM	140	9700	J		1900		
5	PCB-82	3500			6600			260000			160000		
5	PCB-83	3000			3900			340000			86000		
5	PCB-84	12000	EB[2]		17000	EB[2]		900000	EB[2]		350000	EB[2]	
5	PCB-85/116/117	6800			9300			620000			210000		
5	PCB-86/87/97/ 109/119/125	25000			38000			1300000			540000		
5	PCB-88/91	6800			7700			1100000			220000		
5	PCB-89	450	J		550	J		61000			39000		
5	PCB-90/101/113	40000	EB[2]		55000	EB[2]		1700000	EB[2]		540000	EB[2]	
5	PCB-92	10000			12000			890000			170000		
5	PCB-93/100	400	J		200	J		160000			22000		
5	PCB-94	390	J		200	J		120000			13000		
5	PCB-95	33000			51000			1800000			650000		
5	PCB-96	260	J		1700	U		92000			21000		
5	PCB-98/102	1800	J		1500	J		330000			78000		
5	PCB-99	20000	EB[2]		21000	EB[2]		1300000	EB[2]		350000	EB[2]	
5	PCB-103	510	J		360	J		85000			11000		
5	PCB-104	1800	U		1700	U		5600	J		510	J	
5	PCB-105	6400	EB[2]		EMPC	J EB[2]	13000	740000	EB[2]		200000	EB[2]	
5	PCB-106	1800	U		1700	U		28000	U		1900	U	
5	PCB-107	1800	J		1900			230000			41000		
5	PCB-108/124	3700	U[1]		3400	U[1]		56000			14000		
5	PCB-110/115	52000			71000			3100000			1000000		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41S1			PA41S2			PA41S3			PA41S4		
	Sample Location:	SD-09			SD-10			SD-11			SD-12		
	Sample Identifier:	D35483			D35484			D35485			D35486		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Duplicate		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	53.1			55.0			69.3			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
5	PCB-111	1800	U		1700	U		28000	U		600	J	
5	PCB-112	1800	U		1700	U		28000	U		1900	U	
5	PCB-114	EMPC	J	340	260	J		64000			16000		
5	PCB-118	28000			37000			2100000			540000		
5	PCB-120	240	J		150	J		11000	J		2100		
5	PCB-121	1800	U		1700	U		28000	U		1900	U	
5	PCB-122	1800	U		510	J		23000	J		6200		
5	PCB-123	700	J		820	J		33000			10000		
5	PCB-126		UM	320		UM	290	6100	J		2200		
5	PCB-127	1800	U		1700	U		28000	U		1900	U	
6	PCB-128/166	10000			12000			130000			34000		
6	PCB-129/138/163	54000	EB[2]		78000	EB[2]		840000	EB[2]		210000	EB[2]	
6	PCB-130	3800			5200			69000			18000		
6	PCB-131	840	J		1100	J		12000	J		3800		
6	PCB-132	19000	EB[2]		25000	EB[2]		270000	EB[2]		91000	EB[2]	
6	PCB-133	720	J		930	J		32000			4700		
6	PCB-134	3800			4700			89000			16000		
6	PCB-135/151	11000			20000			340000			75000		
6	PCB-136	5100	EB[2]		8000	EB[2]		120000	EB[2]		31000	EB[2]	
6	PCB-137	3200			3300			45000			12000		
6	PCB-139/140	1200	J		1200	J		24000	J		5400		
6	PCB-141	6800	EB[2]		12000	EB[2]		89000	EB[2]		28000	EB[2]	
6	PCB-142	1800	U		1700	U		28000	U		1900	U	
6	PCB-143	180	J		270	J		5900	J		1000	J	
6	PCB-144	1700	J		2900			25000	J		9100		
6	PCB-145	1800	U		1700	U		940	J		250	J	
6	PCB-146	6100			9100			140000			32000		
6	PCB-147/149	32000			51000			670000			170000		
6	PCB-148	1800	U		51	J		5400	J		600	J	
6	PCB-150	1800	U		51	J		6500	J		440	J	
6	PCB-152	1800	U		59	J		7800	J		600	J	
6	PCB-153/168	34000			53000			510000			140000		
6	PCB-154	500	J		460	J		33000			3700		
6	PCB-155	1800	U		1700	U		28000	U		1900	U	
6	PCB-156/157	6000			7700			140000			27000		
6	PCB-158	4900			7100			77000			19000		
6	PCB-159	1800	U		1700	U		28000	U		1900	U	
6	PCB-160	1800	U		1700	U		28000	U		1900	U	
6	PCB-161	1800	U		1700	U		28000	U		1900	U	
6	PCB-162	280	J		1700	U		28000	U		670	J	
6	PCB-164	3500			5400			47000			10000		
6	PCB-165	1800	U		1700	U		3200	J		510	J	
6	PCB-167	2800			3500			39000			8000		
6	PCB-169		UM	260		UM	240		UM	3900	EMPC	J	370
7	PCB-170	6100	EB[2]		22000	EB[2]		180000	EB[2]		41000	EB[2]	
7	PCB-171/173	2000	J		5800			51000	J		12000		
7	PCB-172	900	J		3700			32000			7500		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41S1			PA41S2			PA41S3			PA41S4		
	Sample Location:	SD-09			SD-10			SD-11			SD-12		
	Sample Identifier:	D35483			D35484			D35485			D35486		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Duplicate		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	53.1			55.0			69.3			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
7	PCB-174	4700	EB[2]		19000	EB[2]		140000	EB[2]		38000	EB[2]	
7	PCB-175	220	J		680	J		7700	J		1900		
7	PCB-176	600	J		2000			18000	J		5500		
7	PCB-177	2900			11000			100000			27000		
7	PCB-178	860	J		3200			40000			9300		
7	PCB-179	1600	J		6000			67000			18000		
7	PCB-180/193	10000			47000			350000			90000		
7	PCB-181	150	J		150	J		2900	J		340	J	
7	PCB-182	1800	U		1700	U		2000	J		340	J	
7	PCB-183/185	3200	J EB[2]		12000	EB[2]		97000	EB[2]		26000	EB[2]	
7	PCB-184	1800	U		1700	U		28000	U		1900	U	
7	PCB-186	1800	U		1700	U		28000	U		1900	U	
7	PCB-187	4400			19000			200000			48000		
7	PCB-188	1800	U		1700	U		28000	U		79	J	
7	PCB-189	350	J		1100	J		11000	J		2300		
7	PCB-190	1800	U[1]		4600			42000			8900		
7	PCB-191	1800	U[1]		1700	U[1]		28000	U[1]		1900	U[1]	
7	PCB-192	1800	U		1700	U		28000	U		1900	U	
8	PCB-194	1800	U[1]		14000			110000			30000		
8	PCB-195	1800	U[1]		5200			41000			11000		
8	PCB-196	910	J		6200			47000			13000		
8	PCB-197/200	3700	U[1]		3400	U[1]		56000	U[1]		3700	U[1]	
8	PCB-198/199	2300	J EB[2]		13000	EB[2]		100000	EB[2]		27000	EB[2]	
8	PCB-201	270	J		1200	J		11000	J		2900		
8	PCB-202	520	J		1900			20000	J		5000		
8	PCB-203	1400	J		7300			59000			15000		
8	PCB-204	1800	U		1700	U		28000	U		1900	U	
8	PCB-205	1800	U		1700	U[1]		28000	U[1]		1900	U[1]	
9	PCB-206	1800	J EB[2]		6800	EB[2]		39000	EB[2]		13000	EB[2]	
9	PCB-207	230	J		730	J		4000	J		1300	J	
9	PCB-208	690	J		2500			9700	J		4000		
10	PCB-209	1800	U[1]		6400			28000	U[1]		6800		

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congeners

	Sample No.:	PA41S1			PA41S2			PA41S3			PA41S4		
	Sample Location:	SD-09			SD-10			SD-11			SD-12		
	Sample Identifier:	D35483			D35484			D35485			D35486		
	Sample Type:	Field Sample			Field Sample			Field Sample			Field Duplicate		
	Matrix:	Sediment			Sediment			Sediment			Sediment		
	Dilution Factor:	1			1			1			1		
	% Solids:	53.1			55.0			69.3			51.9		
	Units:	ng/kg (dry)			ng/kg (dry)			ng/kg (dry)			ng/kg (dry)		
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*
	Total MoCB	48000	J		100	J		7200000	J		170000	J	
	Total DiCB	190000	J		1100	J		70000000	J		4200000	J	
	Total TrCB	110000	J		830	J		110000000	J		18000000	J	
	Total TeCB	81000	J		43000	J		72000000	J		17000000	J	
	Total PeCB	250000	J		340000	J		17000000	J		5300000	J	
	Total HxCB	210000	J		310000	J		3800000	J		950000	J	
	Total HpCB	38000	J		160000	J		1300000	J		340000	J	
	Total OcCB	5400	J		49000	J		390000	J		100000	J	
	Total NoCB	2700	J		10000	J		53000	J		18000	J	
	DeCB	ND			6400			ND			6800		
	Total PCBs^	930,000	J		920,000	J		280,000,000	J		47,000,000	J	
	Total TEQ#	1.3	J		1.9	J		780	J		270	J	

The WHO Toxic congeners are identifed by the highlighted background.

* The values in this column are either the Estimated Detection Limits (EDL), Method Detection Limits (MDL), or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are flagged as "EMPC" in the Result column and are qualified with a "J" since they are estimated values. EMPC results are not included in the Total Homologues.

\# The Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds, Society of Toxicology, July 7, 2006. The TE values are calculated using the final validated data and include the positive results and estimated values. The TE values are estimated (J) when any individual congener is estimated. The TE calculations do not include RL values.

^ Total PCBs are the sum of the total homologues.

TIER 2/S4VEM DATA VALIDATION QUALIFIER COMMENTS:

J Sample concentrations reported below the laboratory reporting limit are flagged (J) on the Data Summary Table as estimated values with no superscripts.

1 Blank contamination; the positive sample results that are less than the CRQL are reported as non-detects (U) at the CRQL; positive sample sample results greater than the CRQL but less than the blank result are reported as non-detect (U) at the adjusted blank concentration.

2 Equipment blank contamination; detects for the affected compounds are flagged (EB) on the Data Summary Table to indicate the presence of an unknown amount of sampling error as evidenced by the aqueous equipment blank contamination.

3 LCS/LCSD recovery above QC limits; estimate high (J+) all positive results for PCB 1 and PCB 4 in all sediment samples.

4 Congener exceeded the instrument calibration range; estimate (J) the affected analytes in samples PA41R8 and PA41R9.

5 Labeled compound ion abundance ratio criteria not met; estimate (J) positive results for PCB 1 and PCB 2 in sample PA41R9.

6 Field duplicate precision outside criteria; estimate (J, UJ) the positve results and non-detects for PCB 1 in all sediment samples.

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congener

	Sample No.:	PA41S5			PA41S6			PA41S7					
	Sample Location:	RB-01			RB-02			RB-03					
	Sample Identifier:	D35487			D35488			D35489					
	Sample Type:	Rinsate Blank			Rinsate Blank			Rinsate Blank					
	Matrix:	Water			Water			Water					
	Dilution Factor:	1			1			1					
	% Solids:	N/A			N/A			N/A					
	Units:	pg/L			pg/L			pg/L					
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*			
1	PCB-1	20	U[1]		19	U		20	U				
1	PCB-2	20	U		19	U		20	U				
1	PCB-3	20	U[1]		19	U[1]		20	U[1]				
2	PCB-4	20	U		14	J		20	U				
2	PCB-5	20	U		19	U		20	U				
2	PCB-6	20	U		19	U		20	U				
2	PCB-7	20	U		19	U		20	U				
2	PCB-8	10	J		11	J		20	U				
2	PCB-9	20	U		19	U		20	U				
2	PCB-10	20	U		19	U		20	U				
2	PCB-11	42			50			20	U				
2	PCB-12/13	39	U		38	U		40	U				
2	PCB-14	20	U		19	U		20	U				
2	PCB-15	20	U		19	U		20	U				
3	PCB-16	2.6	J		19	U		20	U				
3	PCB-17	3.6	J		19	U		3.3	J				
3	PCB-18/30	39	U		38	U		40	U				
3	PCB-19	20	U		19	U		20	U				
3	PCB-20/28	39	U[1]		38	U[1]		40	U				
3	PCB-21/33	4.4	J		38	U		4.5	J				
3	PCB-22	2.8	J		4.6	J		2.5	J				
3	PCB-23	20	U		19	U		20	U				
3	PCB-24	20	U		19	U		20	U				
3	PCB-25	20	U		1.8	J		20	U				
3	PCB-26/29	2.0	J		3.5	J		40	U				
3	PCB-27	20	U		19	U		20	U				
3	PCB-31	20	U[1]		19	U[1]		20	U				
3	PCB-32	2.4	J		4.4	J		2.0	J				
3	PCB-34	20	U		19	U		20	U				
3	PCB-35	20	U		19	U		20	U				
3	PCB-36	20	U		19	U		20	U				
3	PCB-37	20	U		19	U		20	U				
3	PCB-38	20	U		19	U		20	U				
3	PCB-39	20	U		19	U		20	U				
4	PCB-40/71	2.9	J		5.4	J		40	U				
4	PCB-41	20	U		19	U		20	U				
4	PCB-42	20	U		19	U		20	U				
4	PCB-43	20	U		19	U		20	U				
4	PCB-44/47/65	59	U[1]		58	U[1]		60	U[1]				
4	PCB-45/51	39	U		38	U		40	U				
4	PCB-46	20	U		19	U		20	U				
4	PCB-48	20	U		19	U		20	U				
4	PCB-49/69	39	U[1]		38	U[1]		40	U				
4	PCB-50/53	1.6	J		2.1	J		40	U				
4	PCB-52	20	U[1]		19	U[1]		20	U[1]				

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congener

	Sample No.:	PA41S5			PA41S6			PA41S7					
	Sample Location:	RB-01			RB-02			RB-03					
	Sample Identifier:	D35487			D35488			D35489					
	Sample Type:	Rinsate Blank			Rinsate Blank			Rinsate Blank					
	Matrix:	Water			Water			Water					
	Dilution Factor:	1			1			1					
	% Solids:	N/A			N/A			N/A					
	Units:	pg/L			pg/L			pg/L					
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*			
4	PCB-54	20	U		19	U		20	U				
4	PCB-55	20	U		19	U		20	U				
4	PCB-56	2.2	J		3.4	J		20	U				
4	PCB-57	20	U		19	U		20	U				
4	PCB-58	20	U		19	U		20	U				
4	PCB-59/62/75	59	U		58	U		60	U				
4	PCB-60	20	U		19	U		20	U				
4	PCB-61/70/74/76	78	U		12	J		80	U				
4	PCB-63	20	U		19	U		20	U				
4	PCB-64	3.6	J		5.7	J		20	U				
4	PCB-66	3.5	J		7.3	J		20	U				
4	PCB-67	20	U		19	U		20	U				
4	PCB-68	20	U		19	U		20	U				
4	PCB-72	20	U		19	U		20	U				
4	PCB-73	20	U		19	U		20	U				
4	PCB-77		UM	3.5		UM	3.5		UM	3.6			
4	PCB-78	20	U		19	U		20	U				
4	PCB-79	20	U		19	U		20	U				
4	PCB-80	20	U		19	U		20	U				
4	PCB-81		UM	2.6		UM	2.5		UM	2.7			
5	PCB-82	20	U		19	U		20	U				
5	PCB-83	20	U		19	U		20	U				
5	PCB-84	20	U		2.4	J		20	U				
5	PCB-85/116/117	59	U		58	U		60	U				
5	PCB-86/87/97/ 109/119/125	120	U[1]		120	U[1]		120	U				
5	PCB-88/91	39	U		38	U		40	U				
5	PCB-89	20	U		19	U		20	U				
5	PCB-90/101/113	5.6	J		6.6	J		3.9	J				
5	PCB-92	20	U		19	U		20	U				
5	PCB-93/100	39	U		38	U		40	U				
5	PCB-94	20	U		19	U		20	U				
5	PCB-95	20	U[1]		19	U[1]		20	U				
5	PCB-96	20	U		19	U		20	U				
5	PCB-98/102	39	U		38	U		40	U				
5	PCB-99	2.4	J		19	U		20	U				
5	PCB-103	20	U		19	U		20	U				
5	PCB-104	20	U		19	U		20	U				
5	PCB-105		UM	2.3	3.6	J			UM	2.4			
5	PCB-106	20	U		19	U		20	U				
5	PCB-107	20	U		19	U		20	U				
5	PCB-108/124	39	U		38	U		40	U				
5	PCB-110/115	39	U[1]		38	U[1]		40	U[1]				

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congener

	Sample No.:	PA41S5			PA41S6			PA41S7					
	Sample Location:	RB-01			RB-02			RB-03					
	Sample Identifier:	D35487			D35488			D35489					
	Sample Type:	Rinsate Blank			Rinsate Blank			Rinsate Blank					
	Matrix:	Water			Water			Water					
	Dilution Factor:	1			1			1					
	% Solids:	N/A			N/A			N/A					
	Units:	pg/L			pg/L			pg/L					
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*			
5	PCB-111	20	U		19	U		20	U				
5	PCB-112	20	U		19	U		20	U				
5	PCB-114		UM	2.6		UM	2.5		UM	2.7			
5	PCB-118	20	U[1]		19	U[1]			UM	3.5			
5	PCB-120	20	U		19	U		20	U				
5	PCB-121	20	U		19	U		20	U				
5	PCB-122	20	U		19	U		20	U				
5	PCB-123		UM	3.7		UM	3.6		UM	3.8			
5	PCB-126		UM	3.5		UM	3.5		UM	3.6			
5	PCB-127	20	U		19	U		20	U				
6	PCB-128/166	39	U		38	U		40	U				
6	PCB-129/138/163	5.9	J		8.2	J		3.9	J				
6	PCB-130	20	U		19	U		20	U				
6	PCB-131	20	U		19	U		20	U				
6	PCB-132	2.6	J		19	U		1.9	J				
6	PCB-133	20	U		19	U		20	U				
6	PCB-134	20	U		19	U		20	U				
6	PCB-135/151	39	U[1]		38	U[1]		40	U[1]				
6	PCB-136	20	U		1.4	J		20	U				
6	PCB-137	20	U		19	U		20	U				
6	PCB-139/140	39	U		38	U		40	U				
6	PCB-141	20	U		2.0	J		20	U				
6	PCB-142	20	U		19	U		20	U				
6	PCB-143	20	U		19	U		20	U				
6	PCB-144	20	U		19	U		20	U				
6	PCB-145	20	U		19	U		20	U				
6	PCB-146	20	U		19	U		20	U				
6	PCB-147/149	39	U[1]		38	U[1]		40	U				
6	PCB-148	20	U		19	U		20	U				
6	PCB-150	20	U		19	U		20	U				
6	PCB-152	20	U		19	U		20	U				
6	PCB-153/168	39	U[1]		38	U[1]		40	U				
6	PCB-154	20	U		19	U		20	U				
6	PCB-155	20	U		19	U		20	U				
6	PCB-156/157		UM	3.7		UM	3.6		UM	3.8			
6	PCB-158	20	U		19	U		20	U				
6	PCB-159	20	U		19	U		20	U				
6	PCB-160	20	U		19	U		20	U				
6	PCB-161	20	U		19	U		20	U				
6	PCB-162	20	U		19	U		20	U				
6	PCB-164	20	U		19	U		20	U				
6	PCB-165	20	U		19	U		20	U				
6	PCB-167		UM	2.2		UM	2.1		UM	2.2			
6	PCB-169		UM	1.9		UM	1.9		UM	2.0			
7	PCB-170	2.0	J		19	U		20	U				
7	PCB-171/173	39	U		38	U		40	U				
7	PCB-172	20	U		19	U		20	U				

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congener

	Sample No.:	PA41S5			PA41S6			PA41S7					
	Sample Location:	RB-01			RB-02			RB-03					
	Sample Identifier:	D35487			D35488			D35489					
	Sample Type:	Rinsate Blank			Rinsate Blank			Rinsate Blank					
	Matrix:	Water			Water			Water					
	Dilution Factor:	1			1			1					
	% Solids:	N/A			N/A			N/A					
	Units:	pg/L			pg/L			pg/L					
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*			
7	PCB-174	20	U		2.6	J		20	U				
7	PCB-175	20	U		19	U		20	U				
7	PCB-176	20	U		19	U		20	U				
7	PCB-177	20	U		19	U		20	U				
7	PCB-178	20	U		19	U		20	U				
7	PCB-179	20	U[1]		19	U[1]		20	U				
7	PCB-180/193	39	U[1]		38	U[1]		40	U				
7	PCB-181	20	U		19	U		20	U				
7	PCB-182	20	U		19	U		20	U				
7	PCB-183/185	2.1	J		1.7	J		40	U				
7	PCB-184	20	U		19	U		20	U				
7	PCB-186	20	U		19	U		20	U				
7	PCB-187	20	U[1]		19	U		20	U[1]				
7	PCB-188	20	U		19	U		20	U				
7	PCB-189		UM	2.7		UM	2.6		UM	2.7			
7	PCB-190	20	U		19	U		20	U				
7	PCB-191	20	U		19	U		20	U				
7	PCB-192	20	U		19	U		20	U				
8	PCB-194	20	U[1]		19	U		20	U				
8	PCB-195	20	U		19	U		20	U				
8	PCB-196	20	U		19	U		20	U				
8	PCB-197/200	39	U		38	U		40	U				
8	PCB-198/199	39	U		1.9	J		40	U				
8	PCB-201	20	U		19	U		20	U				
8	PCB-202	20	U		19	U		20	U				
8	PCB-203	20	U		19	U		20	U				
8	PCB-204	20	U		19	U		20	U				
8	PCB-205	20	U		19	U		20	U				
9	PCB-206	1.4	J		19	U		20	U				
9	PCB-207	20	U		19	U		20	U				
9	PCB-208	20	U		19	U		20	U				
10	PCB-209	0.53	J		19	U		20	U				

TABLE 2

ESAT GENERATED DATA SUMMARY TABLE - VALIDATED RESULTS
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Site: Lower Neponset River Lab: Cape Fear Analytical Case: 47773 SDG: PA41R3 Method HRSM01.2 Analysis: 209 CB Congener

	Sample No.:	PA41S5			PA41S6			PA41S7					
	Sample Location:	RB-01			RB-02			RB-03					
	Sample Identifier:	D35487			D35488			D35489					
	Sample Type:	Rinsate Blank			Rinsate Blank			Rinsate Blank					
	Matrix:	Water			Water			Water					
	Dilution Factor:	1			1			1					
	% Solids:	N/A			N/A			N/A					
	Units:	pg/L			pg/L			pg/L					
CL#	Compounds	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*	Result	Flag	EMPC/ EDL/MDL*			
	Total MoCB	ND			ND			ND					
	Total DiCB	52	J		75	J		ND					
	Total TrCB	18	J		14	J		12	J				
	Total TeCB	14	J		36	J		ND					
	Total PeCB	8.0	J		13	J		3.9	J				
	Total HxCB	8.5	J		12	J		5.8	J				
	Total HpCB	4.1	J		4.3	J		ND					
	Total OcCB	ND	J		1.9	J		ND					
	Total NoCB	1.4	J		ND			ND					
	DeCB	0.53	J		ND			ND					
	Total PCBs^	110	J		160	J		22	J				
	Total TEQ#	0			0.00011	J		0					

The WHO Toxic congeners are identifed by the highlighted background.

* The values in this column are either the Estimated Detection Limits (EDL), Method Detection Limits (MDL), or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are flagged as "EMPC" in the Result column and are qualified with a "J" since they are estimated values. EMPC results are not included in the Total Homologues.

The Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds, Society of Toxicology, July 7, 2006. The TE values are calculated using the final validated data and include the positive results and estimated values. The TE values are estimated (J) when any individual congener is estimated. The TE calculations do not include RL values.

^ Total PCBs are the sum of the total homologues.

TIER 2/S4VEM DATA VALIDATION QUALIFIER COMMENTS:

J Sample concentrations reported below the laboratory reporting limit are flagged (J) on the Data Summary Table as estimated values with no superscripts.

1 Blank contamination; the positive sample results that are less than the CRQL are reported as non-detects (U) at the CRQL; positive sample sample results greater than the CRQL but less than the blank result are reported as non-detect (U) at the adjusted blank concentration.

2 Equipment blank contamination; detects for the affected compounds are flagged (EB) on the Data Summary Table to indicate the presence of an unknown amount of sampling error as evidenced by the aqueous equipment blank contamination.

3 LCS/LCSD recovery above QC limits; estimate high (J+) all positive results for PCB 1 and PCB 4 in all sediment samples.

4 Congener exceeded the instrument calibration range; estimate (J) the affected analytes in samples PA41R8 and PA41R9.

5 Labeled compound ion abundance ratio criteria not met; estimate (J) positive results for PCB 1 and PCB 2 in sample PA41R9.

6 Field duplicate precision outside criteria; estimate (J, UJ) the positve results and non-detects for PCB 1 in all sediment samples.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47773 SDG: PA41R3
LABORATORY: CAPE FEAR ANALYTICAL

DATA SUMMARY TABLE 3
TOTAL PCB CONGENER AND
WHO TOXIC PCB HOMOLOGUES
SEDIMENT ANALYSIS
SEPTEMBER 2018

CLP SAMPLE NUMBER		PA41R3	PA41R4	PA41R5	PA41R6	PA41R7	PA41R8
SAMPLE IDENTIFIER		D35475	D35476	D35477	D35478	D35479	D35480
STATION LOCATION		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06
SAMPLE LOCATION		WBD-C5 C	PTB-C1 A	BCA-C3 C	BCA-C5 D	THD-C1 G	LCA-C2 E
LABORATORY NUMBER		13887001	13887002	13887003	13887004	13887005	13887006
COMPOUND	CRQL						
PCB-77	0.002	37 U[1]	1.1 U[1]	160	140	100	540
PCB-81	0.002	4 U	0.13 U	5.1	2.1	7.5 U	17 J
PCB-105	0.002	97 EB[2]	0.21 J EB[2]	250 EB[2]	200 EB[2]	98 EB[2]	770 EB[2]
PCB-114	0.002	7.4 J	0.13 UM	22	16	8 J	89
PCB-118	0.002	500	1.1 U[1]	510	540	640	3100
PCB-123	0.002	6.7 UM	0.2 UM	12	9.3	8.1 UM	38
PCB-126	0.002	6.4 UM	0.19 UM	2.8	2.3	8.6 U	11 J
PCB-156/157	0.002	78	2.2 U[1]	37	26	91 U[1]	330
PCB-167	0.002	25 J	0.12 UM	11	8	20 J	96
PCB-169	0.002	5.3 UM	0.16 UM	0.22 UM	0.26 UM	6.4 UM	5.1 UM
PCB-189	0.002	8.4 J	0.11 UM	2.3	2.2	12 J	32 J
Total MoCB	NA	3300 J	ND	59 J	94 J	41000 J	56000 J
Total DiCB	NA	20000 J	0.65 J	1500 J	3900 J	110000 J	470000 J
Total TrCB	NA	23000 J	0.68 J	11000 J	18000 J	69000 J	360000 J
Total TeCB	NA	14000 J	1.87 J	15000 J	17000 J	36000 J	150000 J
Total PeCB	NA	4900 J	0.56 J	4600 J	5200 J	12000 J	35000 J
Total HxCB	NA	3100 J	0.49 J	1000 J	990 J	4200 J	9800 J
Total HpCB	NA	910 J	0.35 J	300 J	320 J	1700 J	3800 J
Total OcCB	NA	360 J	ND	90 J	100 J	680 J	1200 J
Total NoCB	NA	50 J	ND	17 J	18 J	120 J	180 J
DeCB	NA	ND	ND	4.9	6.6	ND	ND
Total PCB's	NA	70,000	4.6	33,000	46,000	270,000	1,100,000
DILUTION FACTOR		1.0	1.0	1.0	1.0	1.0	1.0
DATE SAMPLED		9/4/2018	9/4/2018	9/4/2018	9/4/2018	9/5/2018	9/5/2018
DATE EXTRACTED		9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018
DATE ANALYZED		9/30/2018	9/28/2018	9/28/2018	9/28/2018	9/30/2018	9/30/2018
SAMPLE WEIGHT (GRAMS)		0.00101	0.02	0.0204	0.0208	0.00103	0.001
% SOLID		52.9	89.4	63.1	51.9	42.9	55.5

S4VEM DATA VALIDATION QUALIFIER COMMENTS:

^ Total PCBs are the sum of the total homologues.

TIER 2/S4VEM DATA VALIDATION QUALIFIER COMMENTS:

J Sample concentrations reported below the laboratory reporting limit are flagged (J) on the Data Summary Table as estimated values with no superscripts.

1 Blank contamination; the positive sample results that are less than the CRQL are reported as non-detects (U) at the CRQL; positive sample sample results greater than the CRQL but less than the blank result are reported as non-detect (U) at the adjusted blank concentration.

2 Equipment blank contamination; detects for the affected compounds are flagged (EB) on the Data Summary Table to indicate the presence of an unknown amount of sampling error as evidenced by the aqueous equipment blank contamination.

3 LCS/LCSD recovery above QC limits; estimate high (J+) all positive results for PCB 1 and PCB 4 in all sediment samples.

4 Congener exceeded the instrument calibration range; estimate (J) the affected analytes in samples PA41R8 and PA41R9.

5 Labeled compound ion abundance ratio criteria not met; estimate (J) positive results for PCB 1 and PCB 2 in sample PA41R9.

6 Field duplicate precision outside criteria; estimate (J, UJ) the positive results and non-detects for PCB 1 in all sediment samples.

NOTES:

Results are reported in micrograms per kilogram (µg/kg).

CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.
WHO = World Health Organization.
COMPOUND = WHO Toxic PCB Homologues

SITE: LOWER NEPONSET RIVER PCBs
CASE: 47773 SDG: PA41R3
LABORATORY: CAPE FEAR ANALYTICAL

DATA SUMMARY TABLE 3
TOTAL PCB CONGENER AND
WHO TOXIC PCB HOMOLOGUES
SEDIMENT ANALYSIS
SEPTEMBER 2018

CLP SAMPLE NUMBER		PA41R9	PA41S0	PA41S1	PA41S2	PA41S3	PA41S4
SAMPLE IDENTIFIER		D35481	D35482	D35483	D35484	D35485	D35486
STATION LOCATION		SD-07	SD-08	SD-09	SD-10	SD-11	SD-12
SAMPLE LOCATION		THD-C1 F	UNR-C2 D	UNR-C3 A	UMB-C2 C	LCA-C3 D	BCA-C105 D
LABORATORY NUMBER		13887007	13887008	13887009	13887010	13887011	13887012
COMPOUND	CRQL						
PCB-77	0.002	2300	12	1.8 U[1]	1.7 U[1]	720	140
PCB-81	0.002	840 U	0.28 J	0.19 U	0.14 UM	9.7 J	1.9
PCB-105	0.002	1200 EB[2]	23 EB[2]	6.4 EB[2]	13 J EB[2]	740 EB[2]	200 EB[2]
PCB-114	0.002	570 U	1.9	0.34 J	0.26 J	64	16
PCB-118	0.002	13000	160	28	37	2100	540
PCB-123	0.002	520 U	1.5 J	0.7 J	0.82 J	33	10
PCB-126	0.002	580 U	0.48 J	0.32 UM	0.29 UM	6.1 J	2.2
PCB-156/157	0.002	1100	17	6	7.7	140	27
PCB-167	0.002	460 U	6.3	2.8	3.5	39	8
PCB-169	0.002	370 U	0.23 UM	0.26 UM	0.24 UM	3.9 UM	0.37 J
PCB-189	0.002	360	0.96 J	0.35 J	1.1 J	11 J	2.3
Total MoCB	NA	1500000 J	49 J	48 J	0.1 J	7200 J	170 J
Total DiCB	NA	4700000 J	280 J	190 J	1.1 J	70000 J	4200 J
Total TrCB	NA	2600000 J	910 J	110 J	0.83 J	110000 J	18000 J
Total TeCB	NA	1300000 J	1000 J	81 J	43 J	72000 J	17000 J
Total PeCB	NA	440000 J	970 J	250 J	340 J	17000 J	5300 J
Total HxCB	NA	130000 J	530 J	210 J	310 J	3800 J	950 J
Total HpCB	NA	64000 J	130 J	38 J	160 J	1300 J	340 J
Total OcCB	NA	27000 J	37 J	5.4 J	49 J	390 J	100 J
Total NoCB	NA	3700 J	9.8 J	2.7 J	10 J	53 J	18 J
DeCB	NA	550	3.3	ND	6.4	ND	6.8
Total PCB's	NA	11,000,000	3,900	930	920	280,000	47,000
DILUTION FACTOR		1.0	1.0	1.0	1.0	1.0	1.0
DATE SAMPLED		9/5/2018	9/6/2018	9/6/2018	9/6/2018	9/5/2018	9/4/2018
DATE EXTRACTED		9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018
DATE ANALYZED		10/26/2018	9/29/2018	9/29/2018	9/29/2018	9/30/2018	9/28/2018
SAMPLE WEIGHT (GRAMS)		0.00107	0.021	0.0204	0.0214	0.00104	0.0206
% SOLID		38.7	59.2	53.1	55.0	69.3	51.9

S4VEM DATA VALIDATION QUALIFIER COMMENTS:

^ Total PCBs are the sum of the total homologues.

TIER 2/S4VEM DATA VALIDATION QUALIFIER COMMENTS:

J Sample concentrations reported below the laboratory reporting limit are flagged (J) on the Data Summary Table as estimated values with no superscripts.

1 Blank contamination; the positive sample results that are less than the CRQL are reported as non-detects (U) at the CRQL; positive sample sample results greater than the CRQL but less than the blank result are reported as non-detect (U) at the adjusted blank concentration.

2 Equipment blank contamination; detects for the affected compounds are flagged (EB) on the Data Summary Table to indicate the presence of an unknown amount of sampling error as evidenced by the aqueous equipment blank contamination.

3 LCS/LCSD recovery above QC limits; estimate high (J+) all positive results for PCB 1 and PCB 4 in all sediment samples.

4 Congener exceeded the instrument calibration range; estimate (J) the affected analytes in samples PA41R8 and PA41R9.

5 Labeled compound ion abundance ratio criteria not met; estimate (J) positive results for PCB 1 and PCB 2 in sample PA41R9.

6 Field duplicate precision outside criteria; estimate (J, UJ) the positive results and non-detects for PCB 1 in all sediment samples.

NOTES:

Results are reported in micrograms per kilogram (µg/kg).

CRQL = Contract Required Quantitation Limit
All results are reported on a Dry Weight Basis.
* Reported value is from diluted analysis.
WHO = World Health Organization.
COMPOUND = WHO Toxic PCB Homologues

TABLE 4

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

SAMPLE LOCATION	THD-C102 C		WBD-C1 C		WBD-C5 C		BCA-C3 C		BCA-C4 B	
SAMPLE NUMBER	0134LN-0104	Lab	0134LN-0003	Lab	0134LN-0013	Lab	0134LN-0024	Lab	0134LN-0029	Lab
LAB SAMPLE ID	AB76569	RL	AB76570	RL	AB76571	RL	AB76572	RL	AB76573	RL
COMPOUND										
Aroclor-1016	ND	14,000	ND	1,300	ND	3,900	ND	2,000	ND	4,500
Aroclor-1221	**170,000**	14,000	ND	1,300	ND	3,900	ND	2,000	ND	4,500
Aroclor-1232	ND	14,000	ND	1,300	**34,000**	3,900	ND	2,000	ND	4,500
Aroclor-1242	ND	14,000	ND	1,300	ND	3,900	ND	2,000	ND	4,500
Aroclor-1248	ND	14,000	**9,800**	1,300	ND	3,900	**15,000**	2,000	**21,000**	4,500
Aroclor-1254	ND	14,000	ND	1,300	**8,300**	3,900	ND	2,000	ND	4,500
Aroclor-1260	ND	14,000	ND	1,300	ND	3,900	ND	2,000	ND	4,500
Aroclor-1262	ND	14,000	ND	1,300	ND	3,900	ND	2,000	ND	4,500
Aroclor-1268	ND	14,000	ND	1,300	ND	3,900	ND	2,000	ND	4,500

NOTES:

Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

All Results in micrograms per Kilogram (µg/Kg). (Note: results reported in milligrams per Kilograms (mg/Kg) and have been converted.)
Bolded results exceed laboratory Reporting Limits (RLs).
ND = Not Detected above Laboratory Reporting Limits (RLs).
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.

TABLE 4

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

SAMPLE LOCATION	BCA-C5 D		BCA-C6 G		BCA-C7 A		THD-C1 B		THD-C1 D	
SAMPLE NUMBER	0134LN-0036	Lab	0134LN-0044	Lab	0134LN-0047	Lab	0134LN-0051	Lab	0134LN-0053	Lab
LAB SAMPLE ID	AB76574	RL	AB76575	RL	AB76576	RL	AB76577	RL	AB76578	RL
COMPOUND										
Aroclor-1016	ND	4,800	ND	590	ND	420	ND	2,700	ND	13,000
Aroclor-1221	ND	4,800	ND	590	ND	420	**29,000**	2,700	**200,000**	13,000
Aroclor-1232	ND	4,800	ND	590	**5,500**	420	ND	2,700	ND	13,000
Aroclor-1242	ND	4,800	ND	590	ND	420	ND	2,700	ND	13,000
Aroclor-1248	**12,000 P**	4,800	**2,600**	590	ND	420	ND	2,700	ND	13,000
Aroclor-1254	ND	4,800	ND	590	**1,200**	420	ND	2,700	ND	13,000
Aroclor-1260	ND	4,800	ND	590	ND	420	ND	2,700	ND	13,000
Aroclor-1262	ND	4,800	ND	590	ND	420	ND	2,700	ND	13,000
Aroclor-1268	ND	4,800	ND	590	ND	420	ND	2,700	ND	13,000

NOTES:

Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.
All Results in micrograms per Kilogram (µg/Kg). (Note: Results reported by Laboratory in milligrams per Kilograms (mg/Kg) and have been converted to µg/Kg.)
Bolded results exceed laboratory Reporting Limits (RLs).
ND = Not Detected above Laboratory Reporting Limits (RLs).
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.

TABLE 4

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

SAMPLE LOCATION	THD-C1 F		THD-C2 C		LCA-C2 A		LCA-C2 C		LCA-C2 E	
SAMPLE NUMBER	0134LN-0055	Lab	0134LN-0060	Lab	0134LN-0067	Lab	0134LN-0069	Lab	0134LN-0071	Lab
LAB SAMPLE ID	AB76579	RL	AB76580	RL	AB76581	RL	AB76582	RL	AB76583	RL
COMPOUND										
Aroclor-1016	ND	28,000	ND	11,000	ND	64,000	ND	200,000	ND	130,000
Aroclor-1221	**360,000**	28,000	**140,000**	11,000	**670,000**	64,000	**1,600,000**	200,000	**880,000 P**	130,000
Aroclor-1232	ND	28,000	ND	11,000	ND	64,000	ND	200,000	ND	130,000
Aroclor-1242	ND	28,000	ND	11,000	ND	64,000	ND	200,000	ND	130,000
Aroclor-1248	ND	28,000	ND	11,000	ND	64,000	ND	200,000	ND	130,000
Aroclor-1254	ND	28,000	ND	11,000	ND	64,000	ND	200,000	ND	130,000
Aroclor-1260	ND	28,000	ND	11,000	ND	64,000	ND	200,000	ND	130,000
Aroclor-1262	ND	28,000	ND	11,000	ND	64,000	ND	200,000	ND	130,000
Aroclor-1268	ND	28,000	ND	11,000	ND	64,000	ND	200,000	ND	130,000

NOTES:

Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.
All Results in micrograms per Kilogram (µg/Kg). (Note: Results reported by Laboratory in milligrams per Kilograms (mg/Kg) and have been converted to µg/Kg.)
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TABLE 4

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

SAMPLE LOCATION	LCA-C3 C		MBC-C1 D		UMB-C1 A		UMB-C2 B		UNR-C2 D	
SAMPLE NUMBER	0134LN-0074	Lab	0134LN-0079	Lab	0134LN-0086	Lab	0134LN-0091	Lab	0134LN-0099	Lab
LAB SAMPLE ID	AB76584	RL	AB76585	RL	AB76586	RL	AB76587	RL	AB76588	RL
COMPOUND										
Aroclor-1016	ND	220,000	ND	3,300	ND	100	ND	110	ND	130
Aroclor-1221	**2,000,000**	220,000	ND	3,300	ND	100	ND	110	ND	130
Aroclor-1232	ND	220,000	**42,000**	3,300	ND	100	ND	110	ND	130
Aroclor-1242	ND	220,000	ND	3,300	ND	100	ND	110	**840**	130
Aroclor-1248	ND	220,000	ND	3,300	ND	100	ND	110	ND	130
Aroclor-1254	ND	220,000	ND	3,300	**350**	100	**520**	110	**710**	130
Aroclor-1260	ND	220,000	ND	3,300	ND	100	**540**	110	**180**	130
Aroclor-1262	ND	220,000	ND	3,300	ND	100	ND	110	ND	130
Aroclor-1268	ND	220,000	ND	3,300	ND	100	ND	110	ND	130

NOTES:

Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.
All Results in micrograms per Kilogram (µg/Kg). (Note: Results initially reported by Laboratory in milligrams per Kilograms (mg/Kg) and have been converted to µg/Kg.)
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ND = Not Detected above Laboratory Reporting Limits (RLs).
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TABLE 4

SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS
SEDIMENT/SOURCE SAMPLES
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

SAMPLE LOCATION	UNR-C3 C	Lab RL
SAMPLE NUMBER	0134LN-0102	
LAB SAMPLE ID	AB76589	
COMPOUND		
Aroclor-1016	ND	60
Aroclor-1221	ND	60
Aroclor-1232	ND	60
Aroclor-1242	ND	60
Aroclor-1248	ND	60
Aroclor-1254	ND	60
Aroclor-1260	ND	60
Aroclor-1262	ND	60
Aroclor-1268	ND	60

NOTES:

Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.
All Results in micrograms per Kilogram (µg/Kg). (Note: Results initially reported by Laboratory in milligrams per Kilograms (mg/Kg) and have been converted to µg/Kg.)
Bolded results exceed laboratory Reporting Limits (RLs).
ND = Not Detected above Laboratory Reporting Limits (RLs).
P = The confirmation value exceeded 35% difference and is less than 100%. The lower

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0914F SDG: D35475
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 5
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
SEPTEMBER 2018

		SAMPLE NUMBER	**D35475**	**D35476**	**D35477**	**D35478**	**D35479**	**D35480**
		STATION LOCATION	**WBD-C5 C**	**PTB-C1 A**	**BCA-C3 C**	**BCA-C5 D**	**THD-C1 G**	**LCA-C2 E**
		LABORATORY NUMBER	**180-81717-1**	**180-81717-2**	**180-81717-3**	**180-81717-4**	**180-81717-5**	**180-81717-6**
COMPOUND	**MDL**	**RL**						
Total Organic Carbon (TOC)	**750**	**1,000**	26,000 J	2,100 J	31,000 J	45,000 J	66,000 J	61,000 J
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	9/4/2018	9/4/2018	9/4/2018	9/4/2018	9/5/2018	9/5/2018
		DATE ANALYZED	9/11/2018	9/11/2018	9/11/2018	9/11/2018	9/11/2018	9/11/2018
		% SOLID	57	88	61.6	52.8	44.2	53.1

S3VM DATA VALIDATION QUALIFIER COMMENTS:
U = Value is non-detected.
J = Result is estimated due to exceedance of laboratory duplicate RPD criteria.

NOTES:
Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

SITE: LOWER NEPONSET RIVER PCBs
CASE: 0914F SDG: D35475
LABORATORY: EARTH TOXICS, INC.

DATA SUMMARY TABLE 5
TOTAL ORGANIC CARBON SEDIMENT ANALYSIS
SEPTEMBER 2018

		SAMPLE NUMBER	**D35481**	**D35482**	**D35483**	**D35484**	**D35485**	**D35486**
		STATION LOCATION	**THD-C1 F**	**UNR-C2 D**	**UNR-C3 A**	**UMB-C2 C**	**LCA-C3 D**	**BCA-C105 D**
		LABORATORY NUMBER	**180-81717-7**	**180-81717-8**	**180-81717-9**	**180-81717-10**	**180-81717-11**	**180-81717-12**
COMPOUND	**MDL**	**RL**						
Total Organic Carbon (TOC)	**750**	**1,000**	61,000 J	100,000 J	77,000 J	55,000 J	19,000 J	47,000 J
		DILUTION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0
		DATE SAMPLED	9/5/2018	9/6/2018	9/6/2018	9/6/2018	9/5/2018	9/4/2018
		DATE ANALYZED	9/11/2018	9/11/2018	9/11/2018	9/11/2018	9/11/2018	9/11/2018
		% SOLID	39.4	49.5	41	51.5	63.9	52.8

S3VM DATA VALIDATION QUALIFIER COMMENTS:
U = Value is non-detected.
J = Result is estimated due to exceedance of laboratory duplicate RPD criteria.

NOTES:
Results are reported in milligrams per kilogram (mg/kg).
MDL = Method Detection Limit.
RL = Reporting Limit Limit.
All results are reported on a Dry Weight Basis.

ATTACHMENT F
LOWER NEPONSET RIVER PCBS
START ANALYTICAL SUMMARY TABLES
Samples Collected from 13 to 17 November 2017 and 4 to 6 September 2018

TABLE 1

SEDIMENT/SOURCE SAMPLE PCB AROCLOR ANALYTICAL SUMMARY
LOWER NEPONSET RIVER PCBS SITE
NOVEMBER 2017

Sample Location	Compound	Sample Concentration			Background Concentration			Comments		
SD-06	Aroclor-1248	2,100	*J2	µg/Kg	140	UJ	µg/Kg	15	x	SQL
SD-08A	Aroclor-1248	270		µg/Kg	140	UJ	µg/Kg	1.9	x	SQL
SD-09	Aroclor-1248	150	J-1	µg/Kg	140	UJ	µg/Kg	1.1	x	SQL
SD-10	Aroclor-1248	260		µg/Kg	140	UJ	µg/Kg	1.9	x	SQL
SD-11	Aroclor-1248	1,500	*J4	µg/Kg	140	UJ	µg/Kg	10.7	x	SQL
SD-12A	Aroclor-1248	1,000	*	µg/Kg	140	UJ	µg/Kg	7.1	x	SQL
SD-12	Aroclor-1248	300	J-1	µg/Kg	140	UJ	µg/Kg	2.1	x	SQL
SD-13	Aroclor-1248	370	J-1	µg/Kg	140	UJ	µg/Kg	2.6	x	SQL
SD-39	Aroclor-1248	630	J2,4	µg/Kg	140	UJ	µg/Kg	4.5	x	SQL
SD-41	Aroclor-1248	530	*	µg/Kg	140	UJ	µg/Kg	3.8	x	SQL
SD-42	Aroclor-1248	200	J-1	µg/Kg	140	UJ	µg/Kg	1.4	x	SQL
SD-43	Aroclor-1248	180		µg/Kg	140	UJ	µg/Kg	1.3	x	SQL
SD-44	Aroclor-1254	2,100	*	µg/Kg	460	UJ	µg/Kg	4.6	x	Bac.
SD-100A	Aroclor-1248	200	J-1	µg/Kg	140	UJ	µg/Kg	1.4	x	SQL
SD-100B	Aroclor-1248	260		µg/Kg	140	UJ	µg/Kg	1.9	x	SQL

NOTES:

µg/Kg = micrograms per Kilogram.

SQL = Sample Quantitation Limit.

Bac. = Background

SD-39 is field duplicate of SD-06

Samples SD-36, SD-29, and SD-45 were selected as the background samples. SD-36 and SD-29 were used for the comparison of PCB Aroclor-1248 concentrations. SD-45 was used for the comparison of PCB Aroclor-1254 concentrations.

* Reported value is from diluted analysis.

J = The associated numerical value is an estimated quantity.

U = The compound or element was analyzed for, but not detected. The associated numerical value is the sample-adjusted SQL.

TABLE 2

SEDIMENT/SOURCE SAMPLE PCB AROCLOR ANALYTICAL SUMMARY
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Sample Location	Compound	Sample Concentration			Background Concentration			Comments		
LCA-C1 C	Aroclor-1221	1,600,000		µg/Kg	130		µg/Kg	12,308	x	SQL
LCA-C2 A	Aroclor-1221	670,000		µg/Kg	130		µg/Kg	5,154	x	SQL
LCA-C2 E	Aroclor-1221	880,000	P	µg/Kg	130		µg/Kg	6,769	x	SQL
LCA-C3 C	Aroclor-1221	2,000,000		µg/Kg	130		µg/Kg	15,385	x	SQL
THD-C1 B	Aroclor-1221	29,000		µg/Kg	130		µg/Kg	223	x	SQL
THD-C1 D	Aroclor-1221	200,000		µg/Kg	130		µg/Kg	1,538	x	SQL
THD-C1 F	Aroclor-1221	360,000		µg/Kg	130		µg/Kg	2,769	x	SQL
THD-C102 C	Aroclor-1221	170,000		µg/Kg	130		µg/Kg	1,308	x	SQL
THD-C2 C	Aroclor-1221	140,000		µg/Kg	130		µg/Kg	1,077	x	SQL
BCA-C7 A	Aroclor-1232	5,500		µg/Kg	130		µg/Kg	42	x	SQL
MBC-C1 D	Aroclor-1232	42,000		µg/Kg	130		µg/Kg	323	x	SQL
WBD-C5 C	Aroclor-1232	34,000		µg/Kg	130		µg/Kg	262	x	SQL
BCA-C3 C	Aroclor-1248	15,000		µg/Kg	130		µg/Kg	115	x	SQL
BCA-C4 B	Aroclor-1248	21,000		µg/Kg	130		µg/Kg	162	x	SQL
BCA-C5 D	Aroclor-1248	12,000	P	µg/Kg	130		µg/Kg	92	x	SQL
BCA-C6 G	Aroclor-1248	2,600		µg/Kg	130		µg/Kg	20	x	SQL
WBD-C1 C	Aroclor-1248	9,800		µg/Kg	130		µg/Kg	75	x	SQL
WBD-C5 C	Aroclor-1254	8,300		µg/Kg	710		µg/Kg	12	x	Bac.

NOTES:

Results in micrograms per Kilogram (µg/Kg). Note: Results initially reported by laboratory in milligrams per Kilogram (mg/Kg) and have been converted to µg/Kg.
SQL = Sample Quantitation Limit.
Bac. = Background
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.

TABLE 3

SEDIMENT/SOURCE SAMPLE TOTAL PCBS (CONGENER) ANALYTICAL SUMMARY
LOWER NEPONSET RIVER PCBS SITE
SEPTEMBER 2018

Sample Location	Total PCBs Sample Concentration		Background Concentration		Comments		
WBD-C5 C	70,000	µg/Kg	3,900	µg/Kg	18	x	Bac.
BCA-C3 C	33,000	µg/Kg	3,900	µg/Kg	8	x	Bac.
BCA-C5 D	46,000	µg/Kg	3,900	µg/Kg	12	x	Bac.
THD-C1 G	270,000	µg/Kg	3,900	µg/Kg	69	x	Bac.
LCA-C2 E	1,100,000	µg/Kg	3,900	µg/Kg	282	x	Bac.
THD-C1 F	11,000,000	µg/Kg	3,900	µg/Kg	2,821	x	Bac.
LCA-C3 D	280,000	µg/Kg	3,900	µg/Kg	72	x	Bac.
BCA-C105 D	47,000	µg/Kg	3,900	µg/Kg	12	x	Bac.

NOTES:

µg/Kg = micrograms per Kilogram.
Total PCBs are the sum of the total homologues via congener analysis.
Bac. = Background
BCA-C105 D is field duplicate of BCA-C5 D
Samples PTB-C1 A, UNR-C2 D, UNR-C3 A, and UMB-C2C were selected as the background samples.
UNR-C2 D was used for comparison of Total PCB concentrations.