New Bedford Harbor Superfund Site
Final Intertidal West Zone 4 and West Zone 5
Remedial Action Report
November 8, 2022

Prepared by:

U.S. Environmental Protection Agency
Region 1
Boston, Massachusetts

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Acronyms and Abbreviations

CDE	Cornell Dubilier Electronics, Inc.
CR	CR Environmental, Inc.
cy	cubic yards
DPA	Designated Port Area
EPA	U.S. Environmental Protection Agency
ft	foot
GPS	global positioning system
Jacobs	Jacobs Engineering Group, Inc.
MCP	Massachusetts Contingency Plan
mg/kg	milligrams per kilogram
NAE	U.S. Army Corps of Engineers – New England District
NPL	National Priorities List
PCB	polychlorinated biphenyl
ppm	parts per million
ROD	Record of Decision
ROW	right of way
Sevenson	Sevenson Environmental Services, Inc.
SWCA	SWCA Environmental Consultants
TCL	target cleanup level
TSCA	Toxic Substances Control Act
UCL	upper concentration limit

1. Introduction

The purpose of this Remedial Action Report is to document the remedial action and final disposition of the restored West Zone 4 and West Zone 5 intertidal zones at the New Bedford Harbor Superfund Site (the Site). These zones are illustrated on Figure 1. Sediment and soil contaminated with polychlorinated biphenyls (PCBs) were excavated and shipped off-site for disposal, and then restored in accordance with the *Draft Final Intertidal Workplan for West Zone 4* and the *Draft Final Intertidal Workplan for West Zone 5* (Jacobs, 2020a, 2020c).

From May 2021 through June 2022, remediation and restoration of the West Zone 4 and West Zone 5 intertidal zones were conducted by Jacobs Engineering Group, Inc. (Jacobs) under contract to the U.S. Army Corps of Engineers – New England District (NAE) for the U.S. Environmental Protection Agency (EPA). The West Zone 4 and West Zone 5 intertidal zones are located adjacent to one another in the City of New Bedford along the Acushnet River shoreline within New Bedford Harbor. The two zones encompass six parcels of land; however, only five of the six parcels required remediation as the intertidal sediment exceeded the target cleanup levels (TCLs) established in the 1998 EPA Record of Decision (ROD). The TCLs for the West Zone 4 and West Zone 5 intertidal shoreline are 25 milligrams per kilogram (mg/kg) for the top 1 foot (95% upper confidence limit [UCL] of the mean concentration) and 50 mg/kg below 1 foot landward of the mudflats (not-to exceed value). The TCL for Upper Harbor mudflats and subtidal areas is 10 mg/kg, which must be attained as an average on an Upper Harbor-wide basis. Sediment and soils with PCB concentrations exceeding the TCLs were removed and disposed of in an off-site Toxic Substances Control Act (TSCA) permitted landfill. Following contaminated sediment removal from the West Zone 4 and West Zone 5 intertidal zones, areas that originally supported vegetative cover were backfilled with clean subsoil and topsoil to the approximate original elevation and restored with a similar vegetation type. Unvegetated areas (i.e., mudflats) were backfilled as needed to stabilize the shoreline.

1.1 Site History

The Site was proposed to the Superfund National Priorities List (NPL) in 1982 and finalized on the NPL in 1983. Pursuant to 40 CFR 300.425 (c)(2), the Commonwealth of Massachusetts nominated the Site as its priority for listing to the NPL. The Site is located in Bristol County, Massachusetts, which is approximately 55 miles south of the City of Boston. To the east, the Site is bordered by the Towns of Acushnet and Fairhaven, and to the west by the City of New Bedford and the Town of Dartmouth. The Site encompasses approximately 18,000 acres of open water and intertidal shoreline areas, extending from the shallow northern reaches of the Acushnet River Estuary, flowing southwards through the City of New Bedford's Designated Port Area (DPA), and ultimately discharging into Buzzards Bay. Based on the different geographic, environmental, and man-made features throughout the harbor, the Site was divided into three sections, which are further identified as the Upper Harbor, Lower Harbor, and the Outer Harbor (illustrated on Figure 1).

The Upper Harbor PCB-contaminated subtidal and intertidal zones encompass approximately 236 acres of the Site's total 18,000 acres and extends from the north near the Wood Street Bridge area southwards to the Coggeshall Street Bridge. The Lower Harbor encompasses approximately

750 acres of the Site's 18,000 acres and extends from the Coggeshall Street Bridge southwards to the New Bedford Hurricane Protection Barrier. The Outer Harbor encompasses the remaining 17,000 acres and extends from the New Bedford Hurricane Protection Barrier southward into Buzzards Bay to an imaginary line extending from Rocky Point (the southern tip of West Island in Fairhaven) southwesterly to a New Bedford Harbor navigational channel buoy, Buoy C3, and then southwesterly to Mishaum Point in Dartmouth. The three sections of the Site and their unique geographical features (e.g., bridges, barriers) are illustrated on Figure 1.

PCB contaminated sediment and seafood within the New Bedford Harbor was initially identified in the mid-1970s. EPA site-specific investigations began in 1983 and included pilot dredging and disposal studies, and extensive physical and chemical computer modeling. These initial studies are summarized in the *Draft Final Public Health Risk Assessment*, the *Draft Final Feasibility Study of Remedial Alternatives for the Estuary and Lower Harbor/Bay*, and the *Draft Final Supplemental Feasibility Study Evaluation for Upper Buzzards Bay* (Ebasco Services Inc.,1989, 1990, 1992). In 1990, the *Record of Decision Summary New Bedford Harbor/Hot Spot Operable Unit* was signed to address hotspots within the Upper Harbor, and in 1998, the *Record of Decision for the Upper and Lower Harbor Operable Unit* was signed to address the remaining contamination throughout the harbor (EPA, 1990, 1998).

Based on the results of these investigations and knowledge of the operations at the former Aerovox Site at 740 Belleville Avenue in New Bedford, the Aerovox Site was identified as the principal source of PCB contamination throughout the Site. During operations at this facility (1940s – 1970s), PCB wastes were discharged directly to the Upper Harbor through open trenches, spills, direct dumping, and indirectly through the City of New Bedford's sewerage system. During the same general time period, PCBs were also discharged to the Outer Harbor section of the Site from operations at the Cornell Dubilier Electronics, Inc. (CDE) facility, located just south of the New Bedford Hurricane Protection Barrier.

Historical industrial operations, primarily from the Aerovox Site, resulted in significantly elevated levels of PCB concentrations throughout the Upper Harbor, with a contaminant gradient decreasing from north to south across the Site. Prior to the commencement of remedial efforts, Upper Harbor sediment contained PCB concentrations ranging from below detection to greater than 100,000 mg/kg in localized areas. As a tidal embayment with diurnal 4-foot tides, intertidal mudflats and vegetated saltmarshes also became contaminated with PCBs in the Upper Harbor and in localized shoreline areas of the Lower Harbor. This report documents the Remedial Action that occurred during 2021 and 2022 in two of the Upper Harbor shoreline locations: West Zone 4 and West Zone 5. These two zones are located along the western side of the Site in New Bedford, Massachusetts, as illustrated on Figure 1, and are also less than half a mile south of the former Aerovox Site.

2. Remedial Actions

The methods used to complete the remedial action at West Zone 4 and West Zone 5 are presented below.

2.1 Pre-Remediation Environmental Sampling and Site Preparation

Sampling of sediment and soil from the subtidal, intertidal, and upland areas within West Zone 4 and West Zone 5 was conducted in 1999, 2000, 2001, 2015, 2018, 2019 and 2021. This data was utilized to delineate the boundaries of PCB contamination and determine the horizontal and vertical extent of the excavation areas needed to meet the 1998 ROD's TCLs. Figures 2-1a through 2-1e illustrate the proposed horizontal excavation boundaries and associated PCB sample locations.

Two subtidal caps abutting West Zone 4, L-014 and L-114, were constructed in September of 2020, as illustrated on Figure 2-1b. Prior to cap construction, portions of the West Zone 4 excavation area along the landward cap design boundaries were excavated and relocated within the cap design footprints. The excavated areas were backfilled with clean sand at 3H:1V to serve as a buffer between the remaining West Zone 4 material and the two caps. The sand buffer was designed to protect the caps during the intertidal remedial excavation by minimizing sloughing of cap material and providing a clean visible interface. The relocated West Zone 4 material, as well as the original footprint sediments within each cap's perimeter, were capped with approximately two feet of clean sand containing high levels of total organic content and one foot of armor stone. Refer to *the Final Upper Harbor Sediment Caps Remedial Action Report* for more information (Jacobs, 2021).

Pre-remedial conditions of West Zone 4 and West Zone 5 were documented prior to the initiation of remedial activities to establish baseline conditions for backfill, contouring, re-establishment of native vegetation, and deterrence of invasive species. This included a pre-excavation elevation survey and the mapping of wetland cover within West Zone 4 and 5, as illustrated on Figure 2-2a through Figure 2-2e. A photo-documentation survey of pre-existing site features, including the outfalls, retaining and stone walls, fences, road surfaces, drainage swales, ditches, and landscaping, was also completed prior to excavation in order to document all current conditions. Additionally, pre-excavation preparation activities included notification of remediation to residential and commercial property owners and tenants, clearing of trees and removal of debris, construction of access roads and staging areas, and mobilization of equipment.

2.2. Removal of Contaminated Sediment

Mobilization to West Zone 4 began on May 21, 2021. Excavation was conducted by the Sevenson Environmental Services, Incorporated (Sevenson) track-mounted amphibious excavators guided by a real-time kinematic global positioning system that recorded the actual horizontal and vertical extents of excavation. Target elevations were guided by the cut depth figures presented in the *Draft Final Intertidal Workplan for West Zone 4* and the *Draft Final Intertidal Workplan for West Zone 5* (Jacobs, 2020a, 2020c).

Excavated material was loaded into sealed roll-off containers and transported via truck to the Debris Disposal Area (DDA) located at 103 Sawyer Street in New Bedford, Massachusetts for stabilization with Portland cement and final off-site transport and disposal. Concrete pieces and boulders within the excavation areas were removed, cleaned, and utilized to stabilize steeper bank slopes and to fill deeper excavations.

A total of 5,366 cubic yards of contaminated sediment was excavated from the West Zone 4 and West Zone 5 intertidal zones. This value is based on quantities derived from the pre-excavation and post-excavation survey data. The as-built limits of excavation are illustrated on Figure 2-4a through Figure 2-4e.

2.3 Remedial Environmental Sampling

As documented in the *Final Pre-Excavation Confirmatory Pilot Test Technical Memorandum*, post-excavation elevations were used for establishing compliance that applicable TCLs were achieved (Jacobs, 2020d). The pre- and post- excavation compliance survey locations are shown on Figures 2-3a through 2-3e, and the survey data are presented in Table 2-2a and Table 2-2b for West Zone 4 and West Zone 5, respectively.

Ambient air monitoring was conducted by an independent party, Cashins & Associates, Inc., at fixed monitoring locations during West Zone 4 and West Zone 5 remedial activities in accordance with the *Draft Final Ambient Monitoring Plan for Remediation Activities* (Jacobs, 2020b). There were no exceedances of the risk based goals during West Zone 4 and West Zone 5 operations (EPA, 2021).

2.4 Site Restoration

Backfill of the excavated areas was performed by Sevenson using fill material as specified in the *Draft Final Generic Upper Harbor Intertidal Work Plan* (Jacobs, 2019a). The final post-excavation and post-restoration elevations are presented in Table 2-2a and Table 2-2b for West Zone 4 and West Zone 5, respectively. Topsoil was tested for acceptable nutrient range requirements identified in the *Draft Final Topsoil Acceptance Plan* (Jacobs, 2019b). The topsoil was not initially analyzed for the Massachusetts Contingency Plan (MCP) S-1 Soil Cleanup Standards for use of backfill at West Zone 4 and West Zone 5 because the same specific soil blend from Read Custom Soils was previously analyzed for the MCP S-1 Soil Cleanup Standards in May 2021 for use at the East Zone 4 and East Zone 5 remedial actions. The topsoil was analyzed for the MCP S-1 Soil Cleanup Standards for use of re-backfill at West Zone 4 and West Zone 5 in Spring 2022 after storm damage repair. A summary of the topsoil analysis results for West Zone 4 and West Zone 5 is provided in Attachment A.

The majority of Site restoration activities, excluding the planting of spring saltmarsh grasses, were completed in early October 2021 according to the methodology defined in the *Draft Final Intertidal Workplan for West Zone 4* and the *Draft Final Intertidal Workplan for West Zone 5* (Jacobs, 2020a, 2020c) and final planting plans (CR Environmental, 2021a). Restoration activities included placement of backfill, installation of erosion protection (including coir logs, gravel, and stone), and planting of native shrubs, trees, and other containerized plants. Following installation of the containerized plants, grass seed was broadcasted to assist in soil stabilization until the spring 2022 planting season arrived when the salt marsh grasses could be planted.

On October 26 and 27, 2021, a strong ‘nor’easter brought substantial rain and winds exceeding 70 miles per hour to the New Bedford area. The wind and waves generated by the storm did not

negatively affect the majority of the previously restored intertidal areas at the Site, however, almost all of the recently placed topsoil at West Zone 4 and a small section of West Zone 5 was lost. An inspection of the West Zone 4 and West Zone 5 intertidal areas was completed on October 28, 2021 by Jacobs, NAE, and Sevenson to inspect the intertidal restoration areas and document the damage. Damage included lifting and displacement of many of the coir logs, and erosion of the recently placed (but unplanted) marsh topsoil and bank. Interim stabilization activities were conducted to minimize additional loss of restoration materials and damage to upland areas, which included replacement and reinstallation of several coir logs and backfilling behind several coir logs with gravel. Final West Zone 4 and West Zone 5 erosion and storm repairs began in early May 2022 and were completed within the month; actions related to the West Zone 4 and West Zone 5 storm repair are detailed in the *Final Intertidal Erosion and Storm Repairs at West Zone 4 Project Note* (Jacobs, 2022).

Following the completed repairs, SWCA Environmental Consultants (SWCA) planted over 35,000 plugs of low marsh and high salt marsh grasses (*spartina alterniflora* and *spartina patens*) and installed herbivory protection fencing. The planting was completed on June 24, 2022, within the spring planting window (April 15 through June 30). The planting summary for West Zone 4 and West Zone 5 is presented in Table 2-3. The ecological habitat compositions at West Zone 4 and West Zone 5 were restored on an approximate 1:1 basis, as compared between the pre-excavation and post-excavation wetland habitat distribution. In West Zone 4, all specified plants were installed within the specified elevation-based planting zones, with the exception of 112, four-liter panic grass plants (*panicum amarum var. amarulum*). These were not available and were substituted with 56 four-liter little bluestem plants (*schizachyrium scoparium*) and 56 four-liter switchgrass plants (*panicum virgatum*). Due to the storm, slight changes to the West Zone 4 topography were designed to increase erosion resistance. This eliminated a small area of suitable marsh habitat for Parcel 105-170 that was originally planned to receive approximately 2,000 salt marsh grass plugs. The 2,000 plugs were instead installed in West Zone 1 and East Zone 4 as the plants were already ordered. In West Zone 5, all plants were installed within the specified elevation-based planting zones. Both West Zone 4 and West Zone 5 marsh plantings also had Pierce Mill Cove style herbivory fencing as a geese deterrent (i.e., chicken wire). Figures 2-2a through Figure 2-2e illustrate the pre-excavation wetland distribution and Figures 2-4a through Figure 2-4e illustrate the post-excavation and restoration wetland distribution.

A final post-excavation drone survey was conducted by Green Seal Environmental, LLC on June 15, 2022 to document post-restoration topography. An inspection was performed by Jacobs, NAE, and EPA on July 12, 2022, which resulted in several punch list items including addressing a washout area at the end of Manomet Street with 6-8 inch stone, removing pin flags from replanted areas, removing any washed up coir logs, and continuing to monitor the top of the bank slope near the apartment complexes at parcel 105-183. All punch list items were completed on July 20, 2022.

Site monitoring and maintenance will continue through the first five full growing seasons (through spring 2027) to document the extent to which the wetland restoration and, where applicable, upland restoration goals of the project are achieved. The monitoring and maintenance protocols are described in the *Draft Final Generic Upper Harbor Intertidal Work Plan* (Jacobs, 2019a).

3. Waste Management

Sediment generated from West Zone 4 and West Zone 5 intertidal remediation was disposed of in accordance with TSCA. Approximately 5,366 cubic yards of sediment were stabilized at the DDA and transported via truck from the DDA at Sawyer Street in New Bedford, Massachusetts to Worcester, Massachusetts. From Worcester, Massachusetts, the stabilized sediment was transloaded to rail cars for ultimate disposal at the Wayne Disposal, Inc. Site #2 Landfill, operated by US Ecology, Inc. in Belleville, Michigan.

4. References

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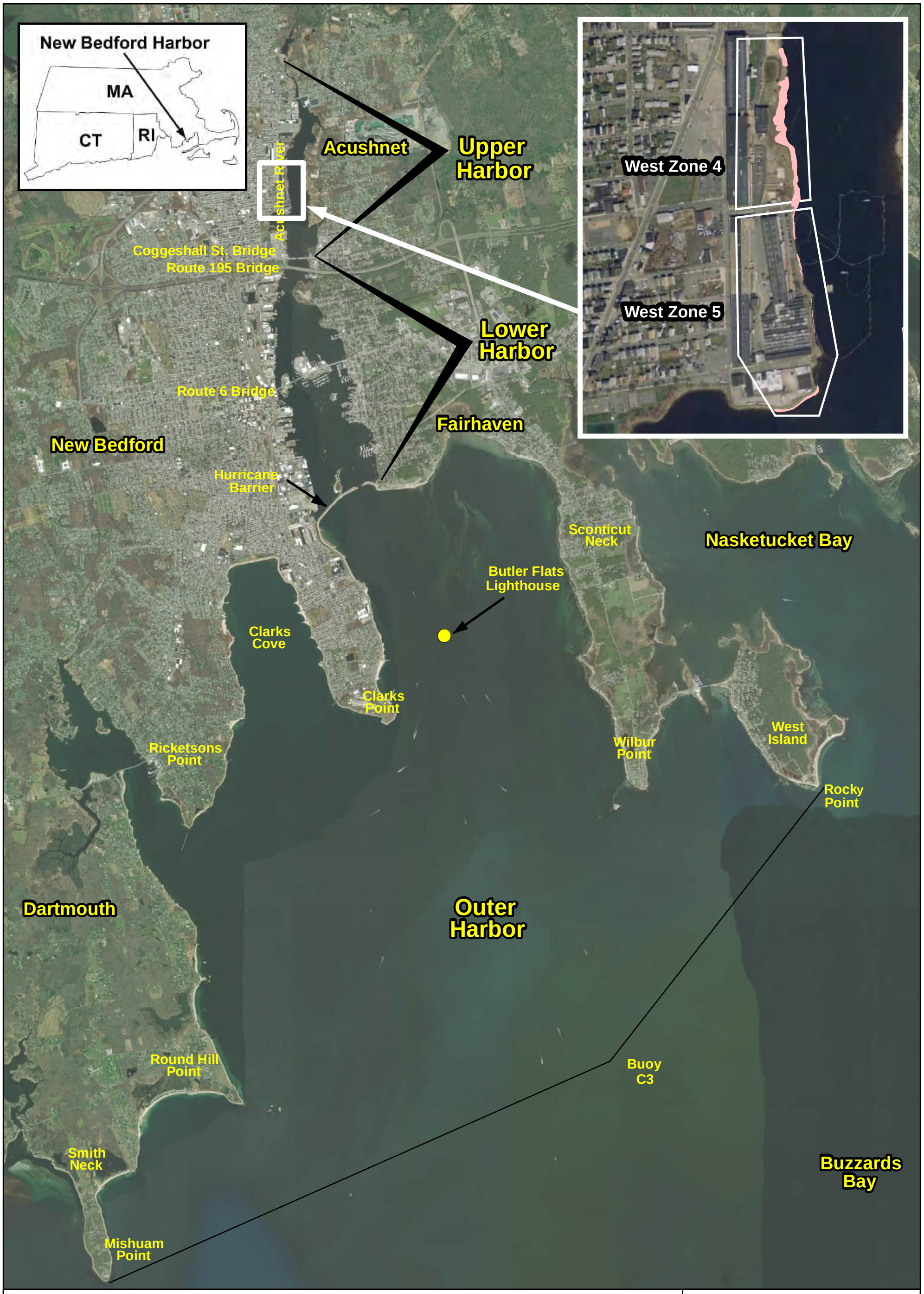
Figures



Legend

N

0 1 Miles

1:54,000

Basemap Reference: Bing Maps Aerial

JACOBS™

Site Location Map

New Bedford Harbor Superfund Site

NAME: jpiccuito Date: 9/6/2022

Figure 1

Path: Y:\NBH\Projects\35BG10011\20220603_WZ4_WZ5_RA_Report_Updated\ArcGIS\Figure 1-2 NBH_Site_Map_WZ4_WZ5_RA_Report_20220603.mxd

105-170

105-183

L-014
CAP

L

L'

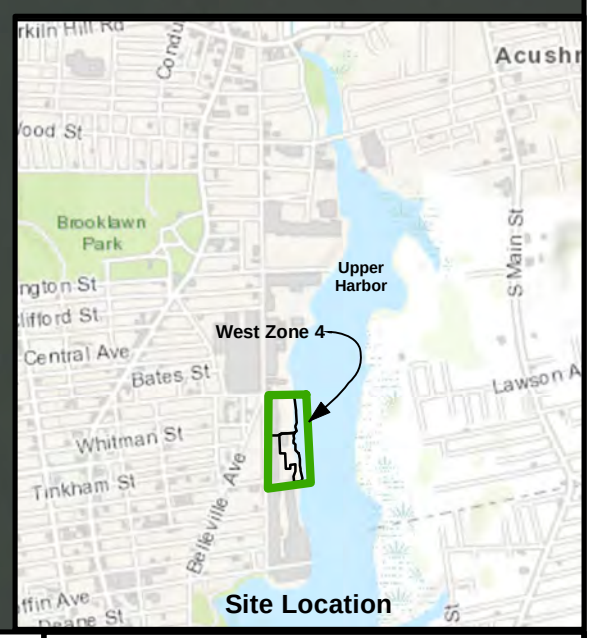
M

M'

L-114
CAP

Riverside Ave

Manomet Street



Legend

- West Zone 4 Management Area
- Parcel Boundary
- Proposed Limits of Excavation
- Excavation Extent with Sand Backfill and Cap
- Final Extent Engineered Cap

L — L' Cross Section*

*Cross section as-builts are further illustrated in the Draft Final Work Plan for West Zone 4, Revision 1

0 150 300 Feet

Basemap Data Source:
MassGIS, ESRI

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Intertidal West Zone 4
Pre-Excavation Site
Location and Features

New Bedford Harbor Superfund Site
October 2020

Figure 1-1a

Path: Y:\NBH\Projects\35BG1001\20200925_Update_to_WZ4\ArcGIS\Fig 2-1 WZ4_Update_WP_Site_Location_20200929.mxd

Manomet Street
Riverside Avenue
100-118
New Bedford Harbor
100-117
100-120
Coffin Avenue
Coffin Avenue
100-85
Pierce Mill Cove
West Zone 5
Upper Harbor
Site Location
Park
Central Ave
Bates St
Whitman St
Tinkham St
Belleville Ave
Deane St
Nye St
Holly St
N Front St
Sycamore St
Coggeshall St
Oxford
S Main

Legend

- Proposed Limits of Excavation
- West Zone 5 Management Area
- Parcel Boundary

Basemap Data Source: MassGIS, ESRI

0 150 300 Feet

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Intertidal West Zone 5
Pre-Excavation Site
Location and Features

New Bedford Harbor Superfund Site
March 2019
Figure 1-1b

Path: C:\Users\scottgal\Documents\NBH\35BG.1001\20180901_Intertidal\WZ5\ArcGIS\WP_Figures\Fig 2-1 WZ5_WP_Site_Location_20190507.mxd

Legend

- PCB Characterization and Pre-excavation Confirmatory Congener (PECC) Sample Location
- PCB Characterization Sample Location
- Parcel Boundary
- MHHW (1.99ft NAVD88)
- MLLW (-1.97ft NAVD88)
- Proposed Limits of Excavation

Basemap Source: MassGIS 2014 and Green Seal 2018

0 40 80 Feet

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

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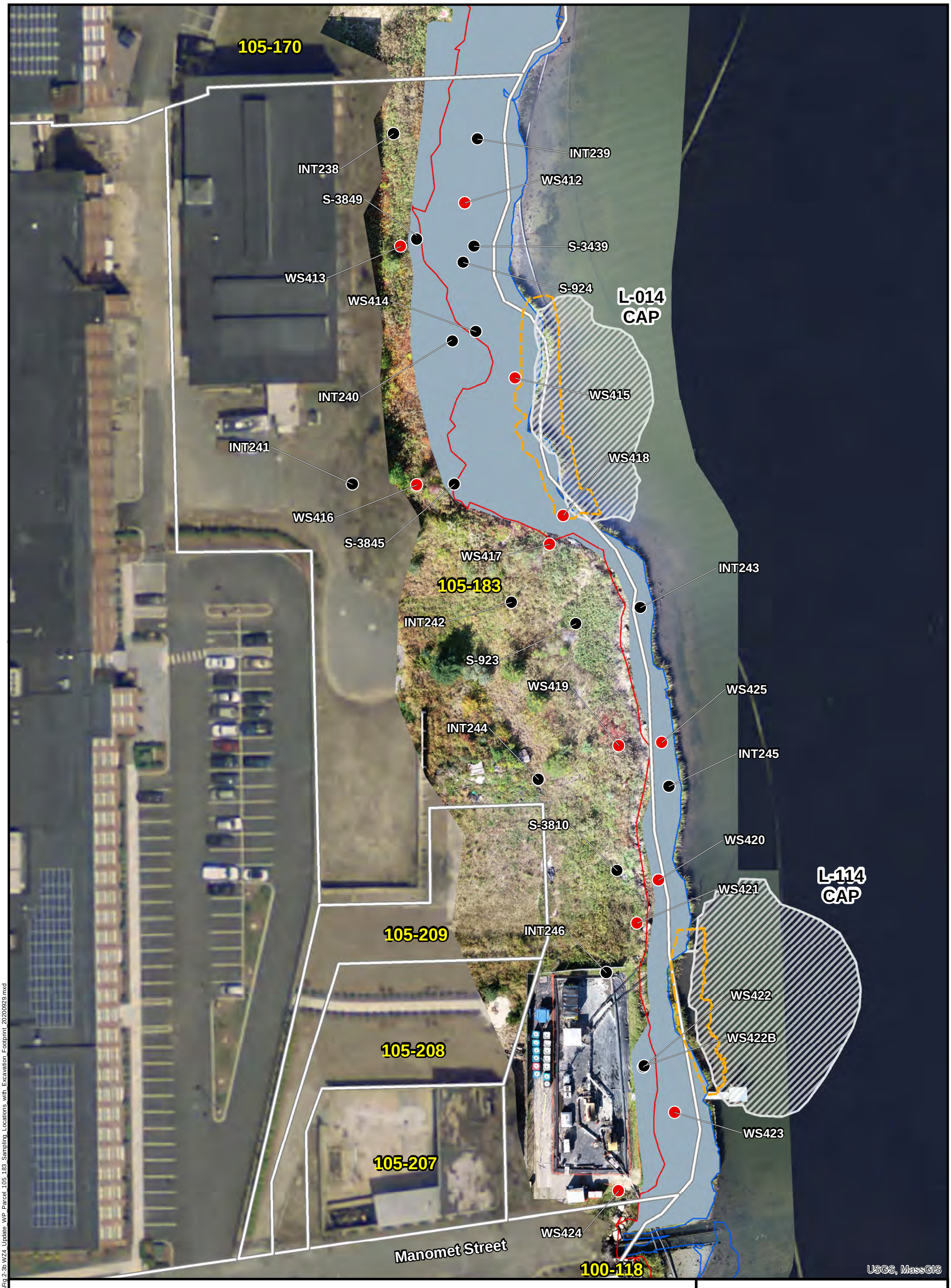
Intertidal West Zone 4
Parcel 105-170
Proposed Excavation Boundaries and PCB Sample Locations
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site
October 2020 **Figure 2-1a**

Path: Y:\NBH\Projects\35BG100\20200925_Update_to_WZ4\ArcGIS\Fig 2-3a WZ4_Update_WP_Parcel_105_170_Sampling_Locations_with_Excavation_Footprint_20200929.mxd



Legend

- PCB Characterization and Pre-excavation Confirmatory Congener (PECC) Sample Location
- PCB Characterization Sample Location
- Parcel Boundary
- MHHW (1.99ft NAVD88)
- MLLW (-1.97ft NAVD88)
- Proposed Limits of Excavation
- Excavation Extent with Sand Backfill and Cap
- Final Extent Engineered Cap

0 50 100 Feet

MHHW and MLLW Elevations NAVD88 ft. (Green Seal, 2018)

Basemap Source: MassGIS 2014 and Green Seal 2018

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Intertidal West Zone 4
Parcel 105-183
Proposed Excavation Boundaries and PCB Sample Locations
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site
October 2020 **Figure 2-1b**

Path: Y:\NBH\Projects\35BG100\20200925_Update_to_WZ4\ArcGIS\Fig 2-3b WZ4_Update_WP_Parcel_105_183_Sampling_Locations_with_Excavation_Footprint_20200929.mxd

105-208
105-209
105-207
105-183
Manomet Street
S-921
WS501
S-3812
WS503
WS504
WS505
INT247
WS506
INT248
WS508
WS509
S-3813
WS510
INT249
WS512
INT250
100-118
WS514
WS515
WS516
INT251
S-919
WS518
WS519
INT253
WS520
INT252
WS521
S-101
100-117
WS522

Legend

- PCB Characterization and Confirmatory Sample Location
- PCB Characterization Sample Location
- Proposed Limits of Excavation
- MHHW (1.99 ft)
- MLLW (-1.97 ft)
- Parcel Boundary

N

0 40 80 Feet

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

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Intertidal West Zone 5
Parcel 100-118
Proposed Excavation Boundaries and PCB Sample Locations
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site
March 2019
Figure 2-1c

Path: C:\Users\scottgal\Documents\NBH\35BG100\120180901_Intertidal\WZ5\ArcGIS\WP_Figures\Fig 2-3a WZ5_WP_Parcels_100_118_Sampling_Locations_with Excavation_Footprint_20190507.mxd

Legend

- PCB Characterization and Confirmatory Sample Location
- PCB Characterization Sample Location
- Proposed Limits of Excavation
- MHHW (1.99 ft)
- MLLW (-1.97 ft)
- Parcel Boundary

0 20 40 60 Feet

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

JACOBS™

Intertidal West Zone 5
Parcel 100-117
Proposed Excavation Boundaries and PCB Sample Locations
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site
March 2019 **Figure 2-1d**

Path: C:\Users\scottga\Documents\NBH\35BG1001\20180901_Intertidal\WZ5\ArcGIS\WP_Figures\WZ5_WP_Fig2_3b Parcels_100_117_Sampling_Locations_with Excavation_Footprint_20190311.mxd

100-117
100-120
Coffin Avenue (ROW)
100-85
WS531
INT262
INT261
WS532
S-3817
INT258
INT259
INT260
WS533
S-3818
WS534
WS535
S-113
S-807
WS537
WS539
S-116

Legend

- PCB Characterization and Confirmatory Sample Location
- PCB Characterization Sample Location
- Proposed Limits of Excavation
- MHHW (1.99 ft)
- MLLW (-1.97 ft)
- Parcel Boundary

N

0 20 40 60
Feet

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

JACOBS™

Intertidal West Zone 5 Parcels
100-120, 100-85, ROW
Proposed Excavation Boundaries and PCB Sample Locations
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site
March 2019 **Figure 2-1e**

Path: C:\Users\scottgal\Documents\NBH135BG100120180901_Intertidal\WZ5\ArcGIS\WP_Figures\WZ5_WP_Fig2_3c_Parcels_100_120_85_ROW_Sampling_Locations_with Excavation_Footprint_20190311.mxd

Notes:

Existing vegetative cover was surveyed by Nearview, LLC (October 2017).

105-183

105-170

111-155

5

5

5

0

0

0

-5

-5

-5

-10

Legend

- 0-1' Excavation Depth
- 1-2' Excavation Depth
- 2-3' Excavation Depth
- 3-4' Excavation Depth
- 1-foot Contour
- Mean Lower Low Water
- Mean Higher High Water
- Beach
- Low Marsh
- Mudflat
- Scrub-Shrub Marsh
- Parcel Boundary

0 50 100 Feet

October 2020

Basemap Data Source:
Green Seal Environmental, MassGIS

Vertical Datum:
NAVD88

Intertidal West Zone 4 Parcel 105-170 Pre-Excavation Vegetation, Topography, and Excavation Area

New Bedford Harbor Superfund Site

JACOBS

Figure 2-2a

Path: Y:\NBH\Projects\35BG1001\20200925_Update_to_WZ4\ArcGIS\Fig 2-2a_Parcel_105-170_Existing_Veg_WZ4_update_20200929.mxd

Notes:

Pre-excavation vegetative cover was surveyed by Nearview, LLC (October 2017).

Manomet Street

ROW

105-183

105-170

L-014 CAP

L-114 CAP

5
0
-5
-10

Excavation Extent with Sand Backfill and Cap

Final Extent Engineered Cap

Legend

- 0-1' Excavation Depth
- 1-2' Excavation Depth
- 2-3' Excavation Depth
- 3-4' Excavation Depth
- 4-5' Excavation Depth
- 5-6' Excavation Depth
- 1-foot Contour
- Mean Lower Low Water
- Mean Higher High Water
- Parcel Boundary
- Low Marsh
- Mudflat
- Phragmites
- Scrub-Shrub Marsh
- Upland

0 50 100 Feet

October 2020

Basemap Data Source:
Green Seal Environmental, MassGIS

Vertical Datum:
NAVD88

Intertidal West Zone 4 Parcel 105-183
Pre-Excavation Vegetation, Topography, and Excavation Area

New Bedford Harbor Superfund Site

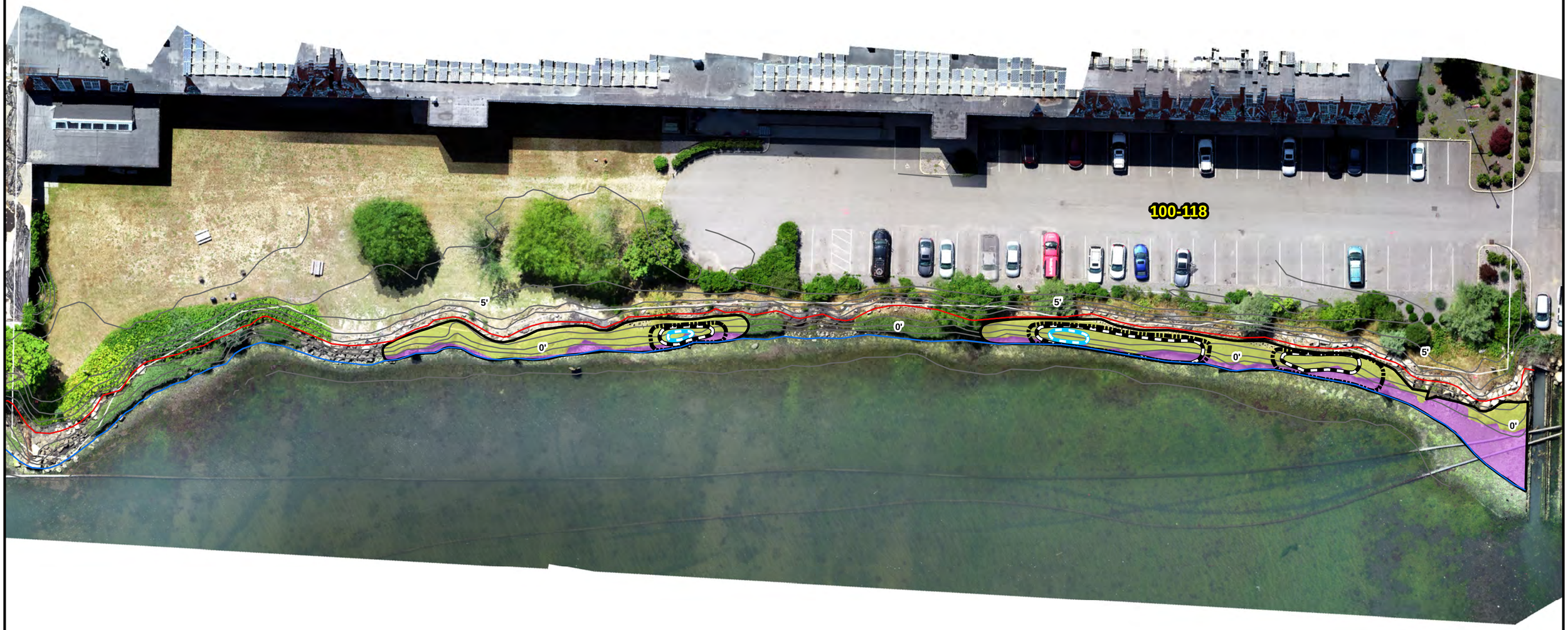
JACOBS

Figure 2-2b

Path: Y:\NBHP\projects\35BG1001\20200925_Update_to_WZ4\ArcGIS\Fig 2-2b_Parcel_105-183_Existing_Veg_WZ4_update_20200929.mxd

Notes:

Pre-excavation vegetative cover was surveyed by Nearview, LLC (October 2017).



Legend

- Mean Lower Low Water
- Mean Higher High Water
- 0-1' Excavation Depth
- 1-2' Excavation Depth
- 2-3' Excavation Depth
- 3-4' Excavation Depth
- 1-foot Contour
- Parcel Boundary
- Mudflat
- Beach
- Low Marsh

0 50 100 Feet

Basemap Data Source:
Green Seal Environmental (2018)

March 2019

Vertical Datum:
NAVD88

Intertidal West Zone 5 Parcel 100-118
Pre-Excavation Vegetation, Topography, and Excavation Area

New Bedford Harbor Superfund Site

JACOBS

Figure 2-2c

Notes:

Pre-excavation vegetative cover was surveyed by Nearview, LLC (October 2017).

100-120

100-117

100-118

5'

0'

5'

0'

0'

5'

Legend

- 0-1' Excavation Depth
- 1-2' Excavation Depth
- Parcel Boundary
- Mean Lower Low Water
- Mean Higher High Water
- 1-foot Contour
- Mudflat

0 50 100 Feet

Basemap Data Source:
Green Seal Environmental (2018)

March 2019

Vertical Datum:
NAVD88

Intertidal West Zone 5 Parcel 100-117 Pre-Excavation Vegetation, Topography, and Excavation Area

New Bedford Harbor Superfund Site

JACOBS

Figure 2-2d

Notes:

Pre-excavation vegetative cover was surveyed by Nearview, LLC (October 2017).

Legend

- 0-1' Excavation Depth
- 1-2' Excavation Depth
- 2-3' Excavation Depth
- 3-4' Excavation Depth
- 4-5' Excavation Depth
- Mean Lower Low Water
- Mean Higher High Water
- Parcel Boundary
- 1-foot Contour
- Beach
- Low Marsh
- Mudflat

0 50 100 Feet

Basemap Data Source:
Green Seal Environmental

March 2019

Vertical Datum:
NAVD88

Intertidal West Zone 5 Parcel 100-85
Pre-Excavation Vegetation, Topography and Excavation Area

New Bedford Harbor Superfund Site

JACOBS

Figure 2-2e

Legend

- Compliance Survey Location
- Parcel Boundary
- MHHW (1.99ft NAVD88)
- MLLW (-1.97ft NAVD88)
- Proposed Limits of Excavation

Basemap Source: MassGIS 2014 and Green Seal 2018

0 40 80 Feet

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

JACOBS™

Intertidal West Zone 4
Parcel 105-170
Compliance Survey Locations with Excavation Footprint
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site

October 2020 **Figure 2-3a**

Path: Y:\NBH\Projects\35BG10012020925_Update_to_WZ4\ArcGIS\Fig 3-3a WZ4_Update_WP_Parcel_105_170_Compliance_Sampling_Locations_with_Excavation_Footprint_20200929.mxd

105-170
105-183
105-209
105-208
105-207
Manomet Street
WS442
WS443
WS412
WS445
WS444
WS415
WS447
WS418
WS446
WS448
WS449
WS425
WS450
WS451
WS420
WS452
WS453
WS455
WS454
WS423
WS456
L-014 CAP
L-114 CAP
USGS, MassGIS

Legend

- Compliance Survey Location
- Parcel Boundary
- MHHW (1.99ft NAVD88)
- MLLW (-1.97ft NAVD88)
- Proposed Limits of Excavation
- Excavation Extent with Sand Backfill and Cap
- Final Extent Engineered Cap

Basemap Source: MassGIS 2014 and Green Seal 2018

0 50 100 Feet

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

JACOBS™

Intertidal West Zone 4
Parcel 105-183
Compliance Survey Locations with Excavation Footprint
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site

October 2020 **Figure 2-3b**

Path: Y:\NBH\Projects\35BG10012\20200925_Update_to_WZ4\ArcGIS\Fig 3-3b WZ4_Update_WP_Parcel_105_183_Compliance_Sampling_Locations_with_Excavation_Footprint_20200929.mxd

105-183
105-208
105-207
105-209
Manomet Street
WS538
WS557
WS543
WS558
WS539
WS505
WS540
WS559
INT248
WS509
WS512
100-118
WS560
WS515
WS541
S-919
WS561
WS542
100-117

Legend

- Compliance Survey Location
- Proposed Limits of Excavation
- MHHW (1.99 ft)
- MLLW (-1.97 ft)
- Parcel Boundary

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

Basemap Data Source:
Green Seal (2018); MassGIS (2014)

N

0 40 80
Feet

JACOBS™

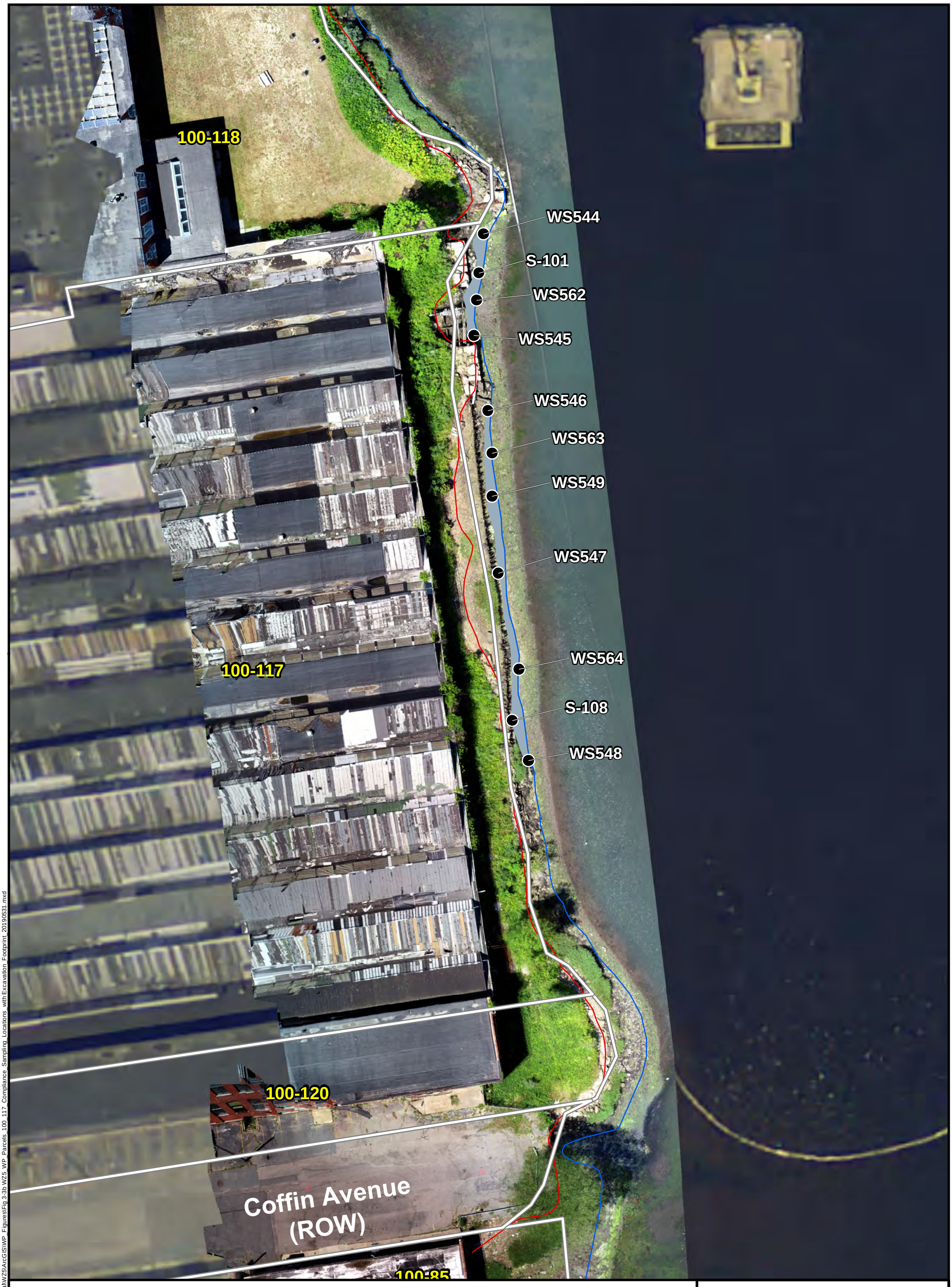
Intertidal West Zone 5
Parcel 100-118
Compliance Survey Locations with Excavation Footprint
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site

May 2019

Figure 2-3c

Path: C:\Users\scottgal\Documents\NBH35BG1001\20180901_Intertidal\WZ5\ArcGIS\WP_Figures\Fig 3-3a WZ5_WP_Parcels_100_118_Compliance_Sampling_Locations_with Excavation_Footprint_20190531.mxd



Legend

- Compliance Survey Location
- Proposed Limits of Excavation
- MHHW (1.99 ft)
- MLLW (-1.97 ft)
- Parcel Boundary

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

Basemap Data Source:
Green Seal (2018); MassGIS (2014)

0 20 40 60
Feet

JACOBS™

Intertidal West Zone 5
Parcel 100-117
Compliance Survey Locations with Excavation Footprint
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site

May 2019

Figure 2-3d

Path: C:\Users\scottga\Documents\NBH\35BG1001\20180901_Intertidal\WZ5\ArcGIS\WP_Figures\Fig 3-3b WZ5_WP_Parcels_100_117_Compliance_Sampling_Locations_with Excavation_Footprint_20190531.mxd

Path: C:\Users\scottga\Documents\NBH\35BG\1001\20180901_IntertidalWZ5\ArcGIS\WP_Figures\Fig 3-3c WZ5_WP_Parcels_100_120_85_ROW_Compliance_Sampling_Locations_with Excavation_Footprint_20190531.mxd

Legend

- Compliance Survey Location
- Proposed Limits of Excavation
- MHHW (1.99 ft)
- MLLW (-1.97 ft)
- Parcel Boundary

MHHW and MLLW Elevations NAVD88 ft.
(Green Seal, 2018)

Basemap Data Source:
Green Seal (2018); MassGIS (2014)

0 20 40 60
Feet

JACOBS™

Intertidal West Zone 5
Parcel 100-85
Compliance Survey Locations with Excavation Footprint
(0-1 ft Depth Interval)

New Bedford Harbor Superfund Site

May 2019

Figure 2-3e

105-183

105-170

111-155

Wetland Cover Types

- Low Marsh
- High Marsh
- High Tide Bush
- Transition Planting
- Conservation Seed Mix
- New Grass

Legend

- Post-Restoration 1-foot Contours
- Post-Restoration 5-foot Contours
- MHHW (1.99 ft. Post-Restoration)
- MLLW (-1.97 ft. Post-Restoration)
- As-built Limits of Excavation
- Parcel Boundary
- Rip-rap/Swale
- Stone Armor Bank
- Landscape Plantings
- Gravel Wedge

0 50 100 Feet

June 2022

Basemap Data Source:
Green Seal Environmental 6/28/2022

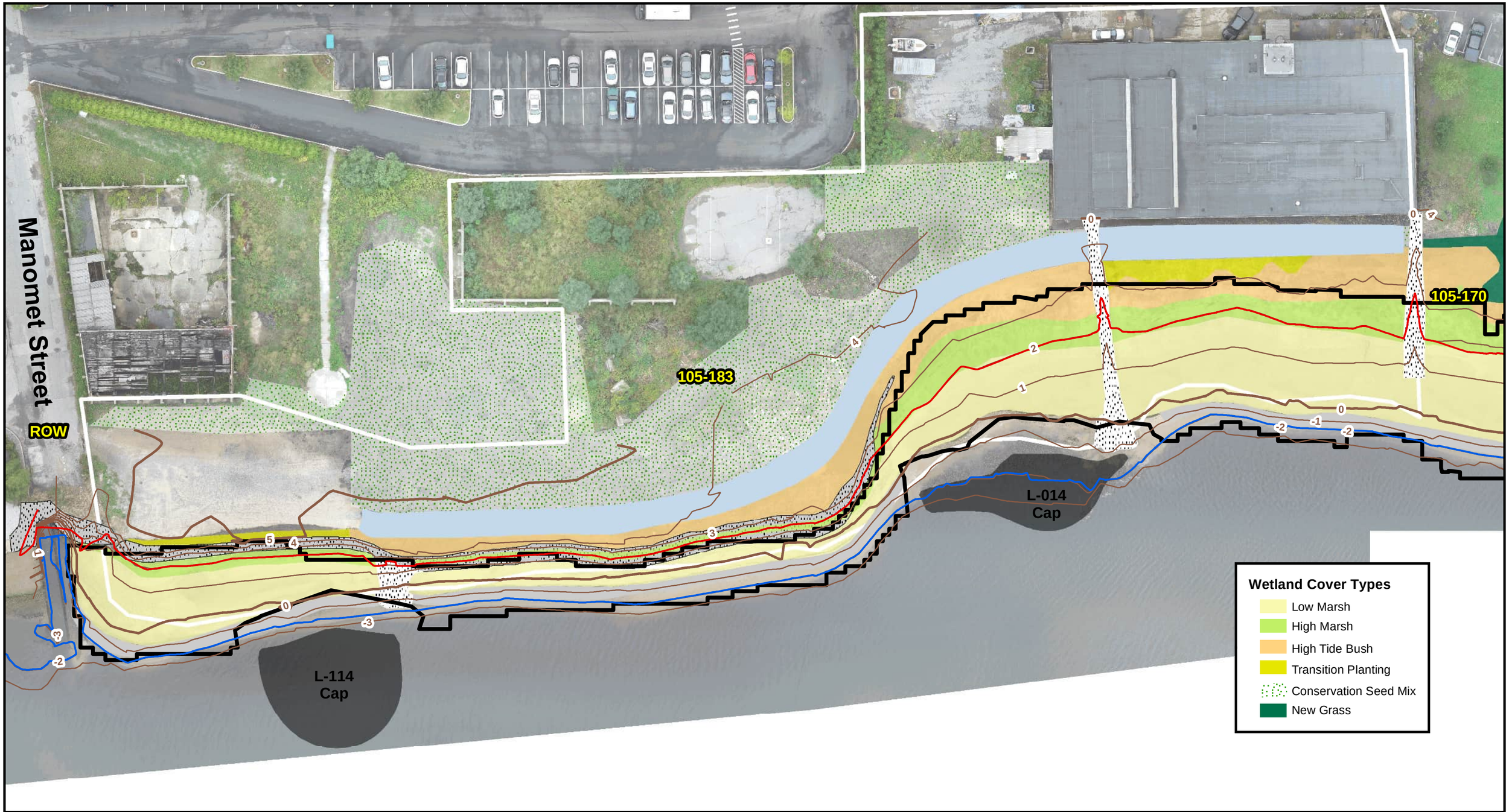
Vertical Datum:
NAVD88

Intertidal West Zone 4 Parcel 105-170
Post-Excavation and Restoration Record Drawing

New Bedford Harbor Superfund Site

JACOBS

Figure 2-4a



Legend

- Post-Restoration 1-foot Contours
- Post-Restoration 5-foot Contours
- MHHW (1.99 ft. Post-Restoration)
- MLLW (-1.97 ft. Post-Restoration)
- As-built Limits of Excavation
- Parcel Boundary
- Rip-rap/Swale
- Stone Armor Bank
- Gravel Walking Path
- Gravel Wedge
- Existing Cap Location

0 50 100 Feet

June 2022

Basemap Data Source:
Green Seal Environmental 6/28/2022

Vertical Datum:
NAVD88

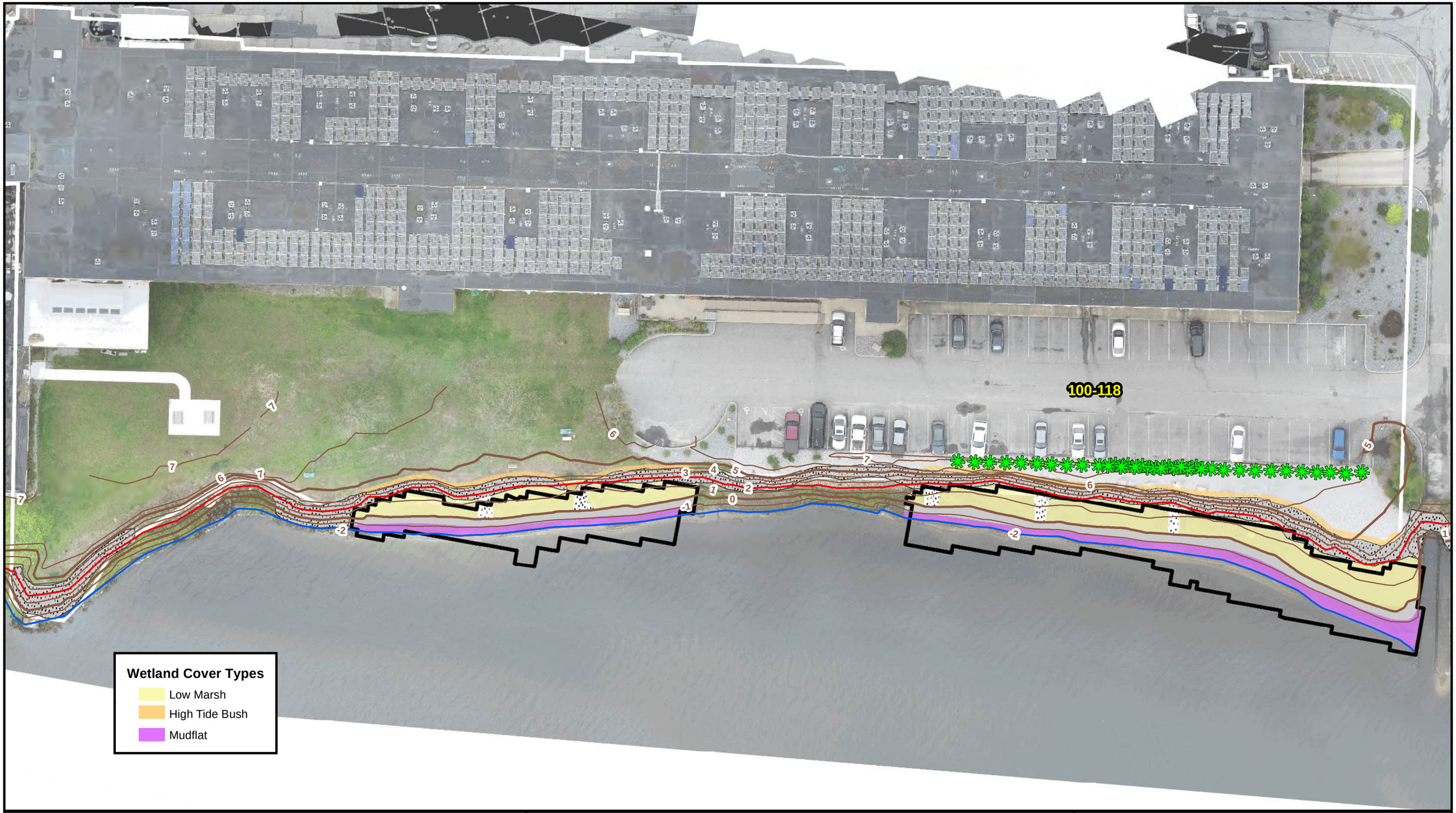
Intertidal West Zone 4 Parcel 105-183

Post-Excavation and Restoration Record Drawing

New Bedford Harbor Superfund Site

JACOBS

Figure 2-4b



Legend

- Post-Restoration 1-foot Contours
- Post-Restoration 5-foot Contours
- MHHW (1.99 ft. Post-Restoration)
- MLLW (-1.97 ft. Post-Restoration)
- As-built Limits of Excavation
- Parcel Boundary
- Rip-rap/Swale
- Gravel Wedge
- Existing Stone Armor Bank
- Landscape Plantings

0 50 100 Feet

June 2022

Basemap Data Source:
Green Seal Environmental 6/28/2022

Vertical Datum:
NAVD88

Intertidal West Zone 5 Parcel 100-118
Post-Excavation and Restoration Record Drawing

New Bedford Harbor Superfund Site

JACOBS

Figure 2-4c

Coffin Avenue
(ROW)

100-120

100-117

100-118

8

7

6

5

4

3

2

1

0

-1

-2

-3

Legend

- Post-Restoration 1-foot Contours
- Post-Restoration 5-foot Contours
- MHHW (1.99 ft. Post-Restoration)
- MLLW (-1.97 ft. Post-Restoration)
- As-built Limits of Excavation (minimal backfill to prevent erosion)
- Parcel Boundary
- Existing Stone Armor Bank

0 50 100 Feet

June 2022

Basemap Data Source:
Green Seal Environmental 6/28/2022

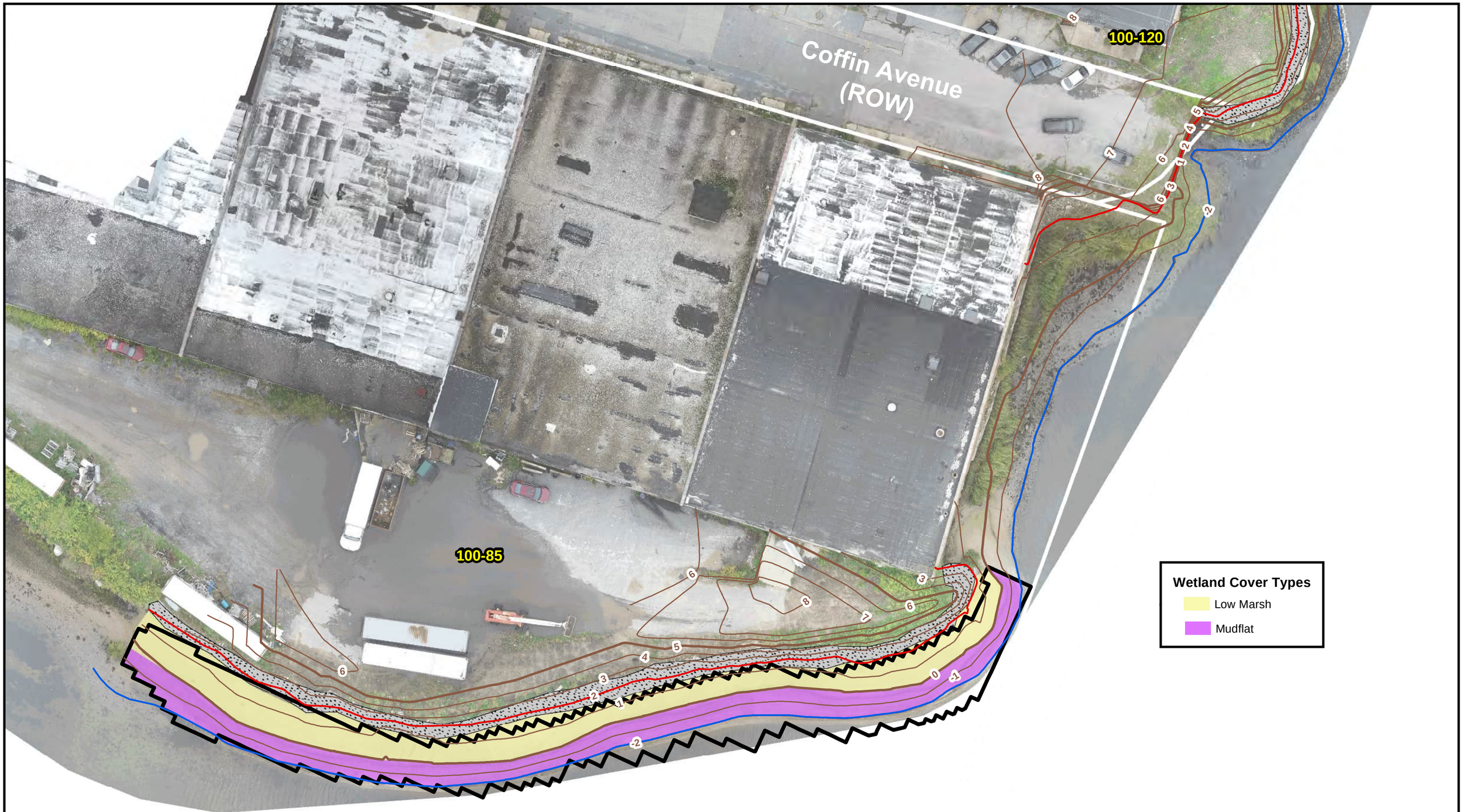
Vertical Datum:
NAVD88

Intertidal West Zone 5 Parcel 100-117
Post-Excavation and Restoration Record Drawing

New Bedford Harbor Superfund Site

JACOBS

Figure 2-4d



Legend

- Post-Restoration 1-foot Contours
- Post-Restoration 5-foot Contours
- MHHW (1.99 ft. Post-Restoration)
- MLLW (-1.97 ft. Post-Restoration)
- As-built Limits of Excavation
- Parcel Boundary
- Existing Stone Armor Bank

0 50 100 Feet

June 2022

Basemap Data Source:
Green Seal Environmental 6/28/2022

Vertical Datum:
NAVD88

Intertidal West Zone 5 Parcel 100-85
Post-Excavation and Restoration Record Drawing

New Bedford Harbor Superfund Site

JACOBS

Figure 2-4e

Tables

Table 2-1a
Intertidal West Zone 4 Pre-Excavation PCB Characterization Sample Results for Parcel 105-170

Parcel	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)	Final Qualifier
105-170	S-15L-INT230-10-20	INT230	1.0	2.0	7/13/2015	Aroclor 1254 - Immunoassay	6.1	
105-170	S-15L-INT230-10-20-REP	INT230	1.0	2.0	7/13/2015	Aroclor 1254 - Immunoassay	0.50	U
105-170	S-15L-INT230-20-30	INT230	2.0	3.0	7/13/2015	Aroclor 1254 - Immunoassay	5.2	
105-170	S-15L-INT230-20-30-REP	INT230	2.0	3.0	7/13/2015	Aroclor 1254 - Immunoassay	6.6	
105-170	S-15L-INT231-00-10	INT231	0.0	1.0	7/13/2015	Aroclor 1254 - Immunoassay	1878	D
105-170	S-15L-INT231-10-20	INT231	1.0	2.0	7/13/2015	Aroclor 1254 - Immunoassay	467	D
105-170	S-15L-INT232-00-10	INT232	0.0	1.0	7/13/2015	Aroclor 1254 - Immunoassay	0.50	U
105-170	S-15L-INT232-10-20	INT232	1.0	2.0	7/13/2015	Aroclor 1254 - Immunoassay	0.50	U
105-170	S-15L-INT233-00-10	INT233	0.0	1.0	7/13/2015	Aroclor 1254 - Immunoassay	6.0	
105-170	S-15L-INT233-10-20	INT233	1.0	2.0	7/13/2015	Total 139 PCB cong (excl non-detects)	23.0	
105-170	S-15L-INT233-20-26	INT233	2.0	2.6	7/13/2015	Aroclor 1254 - Immunoassay	6.9	
105-170	S-15L-INT234-00-10	INT234	0.0	1.0	7/10/2015	Aroclor 1254 - Immunoassay	0.50	
105-170	S-15L-INT234-10-20	INT234	1.0	2.0	7/10/2015	Total 139 PCB cong (excl non-detects)	39.0	
105-170	S-15L-INT234-20-30	INT234	2.0	3.0	7/10/2015	Aroclor 1254 - Immunoassay	8.0	
105-170	S-15L-INT235-00-10	INT235	0.0	1.0	7/13/2015	Aroclor 1254 - Immunoassay	77.5	D
105-170	S-15L-INT235-10-20	INT235	1.0	2.0	7/13/2015	Aroclor 1254 - Immunoassay	1218	D
105-170	S-15L-INT236-00-10	INT236	0.0	1.0	7/10/2015	Total 139 PCB cong (excl non-detects)	0.30	
105-170	S-15L-INT236-10-20	INT236	1.0	2.0	7/10/2015	Total 139 PCB cong (excl non-detects)	2.4	
105-170	S-15L-INT236-20-30	INT236	2.0	3.0	7/10/2015	Aroclor 1254 - Immunoassay	0.50	
105-170	S-15L-INT236-30-40	INT236	3.0	4.0	7/10/2015	Aroclor 1254 - Immunoassay	0.50	U
105-170	S-15L-INT237-00-10	INT237	0.0	1.0	7/13/2015	Aroclor 1254 - Immunoassay	25.4	D
105-170	S-15L-INT237-10-15	INT237	1.0	1.5	7/13/2015	Total 139 PCB cong (excl non-detects)	41.0	
105-170	S-3415-2.0-3.0	S-3415	2.0	3.0	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	203	
105-170	S-3415-3.0-3.3	S-3415	3.0	3.3	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	98.8	
105-170	S-3415-3.3-3.5	S-3415	3.3	3.5	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	46.8	
105-170	S-3429-1.0-2.0	S-3429	1.0	2.0	11/5/2001	Total 18 NOAA PCB cong (excl non-detects)	6.2	
105-170	S-0925-1	S-925	0.0	1.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	676	
105-170	S-0925-2	S-925	1.0	2.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	72.8	
105-170	S-0925-2DUP	S-925	1.0	2.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	161	
105-170	S-0926-1	S-926	0.0	1.0	10/11/2000	Total 18 NOAA PCB cong (excl non-detects)	83.2	
105-170	S-0926-2	S-926	1.0	2.0	10/11/2000	Total 18 NOAA PCB cong (excl non-detects)	33.8	
105-170	S-0926-3	S-926	2.0	3.0	10/11/2000	Total 18 NOAA PCB cong (excl non-detects)	25.7	
105-170	S-WS406-18FSP15-00-10	WS406	0.0	1.0	12/11/2018	Total 209 PCB cong (excl non-detects)	13.4	
105-170	S-WS406-18FSP15-10-20	WS406	1.0	2.0	12/11/2018	PCB from Immunoassay (Aroclor 1254)	6.9	J
105-170	S-WS407-18FSP15-20-30	WS407	2.0	3.0	12/12/2018	Total 209 PCB cong (excl non-detects)	46.7	
105-170	S-WS407-18FSP15-30-40	WS407	3.0	4.0	12/12/2018	Total 209 PCB cong (excl non-detects)	25.0	
105-170	S-WS407-18FSP15-40-50	WS407	4.0	5.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	4.4	J

Table 2-1a
Intertidal West Zone 4 Pre-Excavation PCB Characterization Sample Results for Parcel 105-170

Parcel	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)	Final Qualifier
105-170	S-WS408-18FSP15-00-10	WS408	0.0	1.0	12/11/2018	Total 209 PCB cong (excl non-detects)	33.3	
105-170	S-WS408-18FSP15-10-20	WS408	1.0	2.0	12/11/2018	PCB from Immunoassay (Aroclor 1254)	2.0	J
105-170	S-WS409-18FSP15-20-30	WS409	2.0	3.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	9.7	J
105-170	S-WS409-18FSP15-30-40	WS409	3.0	4.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	5.2	J
105-170	S-WS409-18FSP15-40-50	WS409	4.0	5.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	6.8	J
105-170	S-WS410-18FSP15-00-10	WS410	0.0	1.0	12/11/2018	Total 209 PCB cong (excl non-detects)	1.2	
105-170	S-WS410-18FSP15-10-20	WS410	1.0	2.0	12/11/2018	PCB from Immunoassay (Aroclor 1254)	2.4	J
105-170	S-WS411-18FSP15-20-30	WS411	2.0	3.0	12/13/2018	Total 209 PCB cong (excl non-detects)	155	
105-170	S-WS411-18FSP15-30-40	WS411	3.0	4.0	12/13/2018	Total 209 PCB cong (excl non-detects)	2.5	
105-170	S-WS411-18FSP15-40-50	WS411	4.0	5.0	12/13/2018	PCB from Immunoassay (Aroclor 1254)	10.0	J
105-170	S-WS426-18FSP15-00-10	WS426	0.0	1.0	12/12/2018	Total 209 PCB cong (excl non-detects)	49.1	
105-170	S-WS426-18FSP15-10-20	WS426	1.0	2.0	12/12/2018	Total 209 PCB cong (excl non-detects)	27.8	
105-170	S-WS427-18FSP15-00-10	WS427	0.0	1.0	12/11/2018	Total 209 PCB cong (excl non-detects)	3.7	
105-170	S-WS427-18FSP15-10-20	WS427	1.0	2.0	12/11/2018	PCB from Immunoassay (Aroclor 1254)	2.5	J
105-170	S-WS428-18FSP15-00-10	WS428	0.0	1.0	12/11/2018	Total 209 PCB cong (excl non-detects)	3.1	
105-170	S-WS428-18FSP15-10-20	WS428	1.0	2.0	12/11/2018	PCB from Immunoassay (Aroclor 1254)	1.1	J
105-170	S-WS429-18FSP15-00-10	WS429	0.0	1.0	12/12/2018	Total 209 PCB cong (excl non-detects)	55.3	
105-170	S-WS429-18FSP15-10-20	WS429	1.0	2.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	1.3	J
105-170	S-WS429-18FSP15-20-30	WS429	2.0	3.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	0.74	JB
105-170	S-WS429-18FSP15-30-40	WS429	3.0	4.0	12/12/2018	Total 209 PCB cong (excl non-detects)	81.2	
105-170	S-WS429-18FSP15-40-50	WS429	4.0	5.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	5.4	J
105-170	S-WS429-18FSP15-50-60	WS429	5.0	6.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	7.4	J
105-170	S-WS430-18FSP15-00-10	WS430	0.0	1.0	12/12/2018	Total 209 PCB cong (excl non-detects)	23.9	
105-170	S-WS430-18FSP15-10-20	WS430	1.0	2.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	4.7	J
105-170	S-WS431-18FSP15-20-30	WS431	2.0	3.0	1/31/2019	Total 209 PCB cong (excl non-detects)	73.3	
105-170	S-WS431-18FSP15-30-40	WS431	3.0	4.0	1/31/2019	PCB from Immunoassay (Aroclor 1254)	4.4	J
105-170	S-WS431-18FSP15-40-50	WS431	4.0	5.0	1/31/2019	PCB from Immunoassay (Aroclor 1254)	1.2	JB
105-170	S-WS432-18FSP15-00-10	WS432	0.0	1.0	3/13/2019	Total 209 PCB cong (excl non-detects)	38.4	
105-170	S-WS433-18FSP15-00-10	WS433	0.0	1.0	3/13/2019	Total 209 PCB cong (excl non-detects)	8.6	

Notes:
D - reported value is from a dilution; U - not detected; J - estimated value; B - contaminant detected in the blank.
Total 18 NOAA PCB congeners multiplied by a factor of 2.6.

Table 2-1b
Intertidal West Zone 4 Pre-Excavation PCB Characterization Sample Results for Parcel 105-183

Parcel	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)	Final Qualifier
105-183	S-15L-INT238-00-10	INT238	0.0	1.0	7/10/2015	Total 139 PCB cong (excl non-detects)	25.0	
105-183	S-15L-INT238-10-20	INT238	1.0	2.0	7/10/2015	Aroclor 1254 - Immunoassay	1.6	
105-183	S-15L-INT238-20-30	INT238	2.0	3.0	7/10/2015	Aroclor 1254 - Immunoassay	0.50	U
105-183	S-15L-INT239-00-10	INT239	0.0	1.0	7/10/2015	Aroclor 1254 - Immunoassay	47.1	D
105-183	S-15L-INT239-10-20	INT239	1.0	2.0	7/10/2015	Aroclor 1254 - Immunoassay	275	D
105-183	S-15L-INT239-20-30	INT239	2.0	3.0	7/10/2015	Aroclor 1254 - Immunoassay	82.2	D
105-183	S-15L-INT239-30-40	INT239	3.0	4.0	7/10/2015	Aroclor 1254 - Immunoassay	86.0	D
105-183	S-15L-INT239-40-50	INT239	4.0	5.0	7/10/2015	Aroclor 1254 - Immunoassay	495	D
105-183	S-15L-INT240-00-10	INT240	0.0	1.0	7/10/2015	Aroclor 1254 - Immunoassay	4.9	
105-183	S-15L-INT240-10-20	INT240	1.0	2.0	7/10/2015	Aroclor 1254 - Immunoassay	2.8	
105-183	S-15L-INT240-20-30	INT240	2.0	3.0	7/10/2015	Aroclor 1254 - Immunoassay	1305	D
105-183	S-15L-INT240-30-40	INT240	3.0	4.0	7/10/2015	Aroclor 1254 - Immunoassay	148	D
105-183	S-15L-INT240-40-50	INT240	4.0	5.0	7/10/2015	Aroclor 1254 - Immunoassay	40.7	D
105-183	S-15L-INT241-00-10	INT241	0.0	1.0	7/8/2015	Aroclor 1254 - Immunoassay	1.7	
105-183	S-15L-INT241-10-20	INT241	1.0	2.0	7/8/2015	Aroclor 1254 - Immunoassay	1.2	
105-183	S-15L-INT241-20-30	INT241	2.0	3.0	7/8/2015	Aroclor 1254 - Immunoassay	1.7	
105-183	S-15L-INT242-00-10	INT242	0.0	1.0	7/9/2015	Aroclor 1254 - Immunoassay	1.2	
105-183	S-15L-INT242-10-20	INT242	1.0	2.0	7/9/2015	Aroclor 1254 - Immunoassay	4.4	
105-183	S-15L-INT242-20-30	INT242	2.0	3.0	7/9/2015	Aroclor 1254 - Immunoassay	2.4	
105-183	S-15L-INT243-00-10	INT243	0.0	1.0	7/9/2015	Aroclor 1254 - Immunoassay	57.5	D
105-183	S-15L-INT243-40-50	INT243	4.0	5.0	7/9/2015	Aroclor 1254 - Immunoassay	83.9	D
105-183	S-15L-INT244-00-10	INT244	0.0	1.0	7/9/2015	Aroclor 1254 - Immunoassay	1.0	
105-183	S-15L-INT244-10-20	INT244	1.0	2.0	7/9/2015	Aroclor 1254 - Immunoassay	0.90	
105-183	S-15L-INT244-20-30	INT244	2.0	3.0	7/9/2015	Aroclor 1254 - Immunoassay	0.90	
105-183	S-15L-INT245-00-10	INT245	0.0	1.0	7/8/2015	Aroclor 1254 - Immunoassay	79.9	D
105-183	S-15L-INT245-10-20	INT245	1.0	2.0	7/8/2015	Aroclor 1254 - Immunoassay	274	D
105-183	S-15L-INT245-20-30	INT245	2.0	3.0	7/8/2015	Aroclor 1254 - Immunoassay	434	D
105-183	S-15L-INT245-30-40	INT245	3.0	4.0	7/8/2015	Aroclor 1254 - Immunoassay	61.8	D
105-183	S-15L-INT245-40-50	INT245	4.0	5.0	7/8/2015	Aroclor 1254 - Immunoassay	34.3	D
105-183	S-15L-INT246-00-10	INT246	0.0	1.0	7/9/2015	Total 139 PCB cong (excl non-detects)	11.0	
105-183	S-15L-INT246-10-20	INT246	1.0	2.0	7/9/2015	Total 139 PCB cong (excl non-detects)	18.0	
105-183	S-15L-INT246-20-30	INT246	2.0	3.0	7/9/2015	Aroclor 1254 - Immunoassay	6.0	
105-183	S-15L-INT246-30-40	INT246	3.0	4.0	7/9/2015	Aroclor 1254 - Immunoassay	0.50	U
105-183	S-3439-1.1-1.6	S-3439	1.1	1.6	8/24/2001	Total 18 NOAA PCB cong (excl non-detects)	41.6	
105-183	S-3439-1.6-2.1	S-3439	1.6	2.1	8/24/2001	Total 18 NOAA PCB cong (excl non-detects)	0.91	
105-183	S-3810-0.0-1.0	S-3810	0.0	1.0	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	24.7	
105-183	S-3845-0.0-1.0	S-3845	0.0	1.0	11/14/2001	Total 18 NOAA PCB cong (excl non-detects)	122	

Table 2-1b
Intertidal West Zone 4 Pre-Excavation PCB Characterization Sample Results for Parcel 105-183

Parcel	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)	Final Qualifier
105-183	S-3845-1.0-2.0	S-3845	1.0	2.0	11/14/2001	Total 18 NOAA PCB cong (excl non-detects)	260	
105-183	S-3845-2.0-3.0	S-3845	2.0	3.0	11/14/2001	Total 18 NOAA PCB cong (excl non-detects)	28.6	
105-183	S-3849-0.0-1.0	S-3849	0.0	1.0	11/14/2001	Total 18 NOAA PCB cong (excl non-detects)	109	
105-183	S-3849-1.0-2.0	S-3849	1.0	2.0	11/14/2001	Total 18 NOAA PCB cong (excl non-detects)	312	
105-183	S-3849-2.0-3.0	S-3849	2.0	3.0	11/14/2001	Total 18 NOAA PCB cong (excl non-detects)	213	
105-183	S-0923-1	S-923	0.0	1.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	0.91	
105-183	S-0923-2	S-923	1.0	2.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	0.62	
105-183	S-0924-1	S-924	0.0	1.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	200	
105-183	S-0924-2	S-924	1.0	2.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	416	
105-183	S-0924-3	S-924	2.0	3.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	260	
105-183	S-WS412-18FSP15-30-40	WS412	3.0	4.0	12/19/2018	Total 209 PCB cong (excl non-detects)	57.4	
105-183	S-WS412-18FSP15-40-50	WS412	4.0	5.0	12/19/2018	Total 209 PCB cong (excl non-detects)	75.8	
105-183	S-WS412-18FSP15-50-60	WS412	5.0	6.0	12/19/2018	Total 209 PCB cong (excl non-detects)	5.0	
105-183	S-WS412-18FSP15-60-70	WS412	6.0	7.0	12/19/2018	PCB from Immunoassay (Aroclor 1254)	3.5	J
105-183	S-WS412-18FSP15-70-80	WS412	7.0	8.0	12/19/2018	PCB from Immunoassay (Aroclor 1254)	3.3	J
105-183	S-WS412-18FSP15-80-90	WS412	8.0	9.0	12/19/2018	PCB from Immunoassay (Aroclor 1254)	9.8	J
105-183	S-WS413-18FSP15-00-10	WS413	0.0	1.0	12/11/2018	Total 209 PCB cong (excl non-detects)	0.12	
105-183	S-WS413-18FSP15-10-20	WS413	1.0	2.0	12/11/2018	PCB from Immunoassay (Aroclor 1254)	3.5	J
105-183	S-WS413-18FSP15-20-28	WS413	2.0	2.8	12/11/2018	PCB from Immunoassay (Aroclor 1254)	3.3	J
105-183	S-WS414-18FSP15-30-40	WS414	3.0	4.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	93.0	JD
105-183	S-WS414-18FSP15-40-50	WS414	4.0	5.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	19.0	JD
105-183	S-WS414-18FSP15-50-60	WS414	5.0	6.0	12/20/2018	Total 209 PCB cong (excl non-detects)	89.5	
105-183	S-WS414-18FSP15-60-70	WS414	6.0	7.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	5.7	J
105-183	S-WS415-18FSP15-00-10	WS415	0.0	1.0	12/13/2018	Total 209 PCB cong (excl non-detects)	228	
105-183	S-WS415-18FSP15-10-20	WS415	1.0	2.0	12/13/2018	PCB from Immunoassay (Aroclor 1254)	93.0	JD
105-183	S-WS415-18FSP15-20-30	WS415	2.0	3.0	12/13/2018	PCB from Immunoassay (Aroclor 1254)	91.0	JD
105-183	S-WS415-18FSP15-30-40	WS415	3.0	4.0	12/13/2018	Total 209 PCB cong (excl non-detects)	64.8	
105-183	S-WS415-18FSP15-40-50	WS415	4.0	5.0	12/13/2018	Total 209 PCB cong (excl non-detects)	63.4	
105-183	S-WS415-18FSP15-50-60	WS415	5.0	6.0	12/13/2018	Total 209 PCB cong (excl non-detects)	32.6	
105-183	S-WS415-18FSP15-60-70	WS415	6.0	7.0	12/13/2018	Total 209 PCB cong (excl non-detects)	4.7	
105-183	S-WS416-18FSP15-00-10	WS416	0.0	1.0	12/13/2018	Total 209 PCB cong (excl non-detects)	5.0	
105-183	S-WS416-18FSP15-10-20	WS416	1.0	2.0	12/13/2018	PCB from Immunoassay (Aroclor 1254)	7.4	JD
105-183	S-WS417-18FSP15-00-10	WS417	0.0	1.0	12/13/2018	Total 209 PCB cong (excl non-detects)	1.5	
105-183	S-WS417-18FSP15-10-20	WS417	1.0	2.0	12/13/2018	PCB from Immunoassay (Aroclor 1254)	3.6	J
105-183	S-WS418-18FSP15-10-20	WS418	1.0	2.0	1/31/2019	Total 209 PCB cong (excl non-detects)	32.3	
105-183	S-WS418-18FSP15-20-30	WS418	2.0	3.0	12/20/2018	Total 209 PCB cong (excl non-detects)	21.0	
105-183	S-WS418-18FSP15-30-40	WS418	3.0	4.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	7.4	JD

Table 2-1b
Intertidal West Zone 4 Pre-Excavation PCB Characterization Sample Results for Parcel 105-183

Parcel	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)	Final Qualifier
105-183	S-WS418-18FSP15-40-50	WS418	4.0	5.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	17.0	JD
105-183	S-WS418-18FSP15-50-60	WS418	5.0	6.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	8.2	J
105-183	S-WS418-18FSP15-60-70	WS418	6.0	7.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	2.6	J
105-183	S-WS418-18FSP15-70-80	WS418	7.0	8.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	0.70	JB
105-183	S-WS418-18FSP15-80-90	WS418	8.0	9.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	1.9	J
105-183	S-WS419-18FSP15-00-10	WS419	0.0	1.0	12/13/2018	Total 209 PCB cong (excl non-detects)	7.1	
105-183	S-WS419R-18FSP15-00-10-REP	WS419	0.0	1.0	12/13/2018	Total 209 PCB cong (excl non-detects)	2.5	
105-183	S-WS419-18FSP15-10-20	WS419	1.0	2.0	12/13/2018	PCB from Immunoassay (Aroclor 1254)	12.0	JD
105-183	S-WS419R-18FSP15-10-20-REP	WS419	1.0	2.0	12/13/2018	PCB from Immunoassay (Aroclor 1254)	12.0	JD
105-183	S-WS420-18FSP15-20-30	WS420	2.0	3.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	93.0	JD
105-183	S-WS420-18FSP15-30-40	WS420	3.0	4.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	70.0	JD
105-183	S-WS420-18FSP15-40-50	WS420	4.0	5.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	89.0	JD
105-183	S-WS420-18FSP15-50-60	WS420	5.0	6.0	12/20/2018	Total 209 PCB cong (excl non-detects)	179	
105-183	S-WS420-18FSP15-60-70	WS420	6.0	7.0	12/20/2018	Total 209 PCB cong (excl non-detects)	35.9	
105-183	S-WS420-18FSP15-70-80	WS420	7.0	8.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	14.0	JD
105-183	S-WS420-18FSP15-80-90	WS420	8.0	9.0	12/20/2018	PCB from Immunoassay (Aroclor 1254)	4.5	J
105-183	S-WS421-18FSP15-00-10	WS421	0.0	1.0	12/13/2018	Total 209 PCB cong (excl non-detects)	0.71	
105-183	S-WS421-18FSP15-10-20	WS421	1.0	2.0	12/13/2018	PCB from Immunoassay (Aroclor 1254)	3.8	J
105-183	S-WS422-18FSP15-00-10	WS422	0.0	1.0	12/13/2018	Total 209 PCB cong (excl non-detects)	2.2	
105-183	S-WS422-18FSP15-10-20	WS422	1.0	2.0	12/13/2018	Total 209 PCB cong (excl non-detects)	130	
105-183	S-WS422B-18FSP15-20-30	WS422B	2.0	3.0	3/13/2019	Total 209 PCB cong (excl non-detects)	2360	
105-183	S-WS422B-18FSP15-30-40	WS422B	3.0	4.0	3/13/2019	Total 209 PCB cong (excl non-detects)	250	
105-183	S-WS422B-18FSP15-40-50	WS422B	4.0	5.0	3/13/2019	Total 209 PCB cong (excl non-detects)	10.9	
105-183	S-WS423-18FSP15-20-30	WS423	2.0	3.0	1/16/2019	Total 209 PCB cong (excl non-detects)	0.89	
105-183	S-WS423-18FSP15-30-40	WS423	3.0	4.0	1/16/2019	PCB from Immunoassay (Aroclor 1254)	1.5	J
105-183	S-WS424-18FSP15-00-10	WS424	0.0	1.0	12/12/2018	Total 209 PCB cong (excl non-detects)	5.5	
105-183	S-WS424-18FSP15-10-20	WS424	1.0	2.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	1.3	J
105-183	S-WS424-18FSP15-20-30	WS424	2.0	3.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	1.7	J
105-183	S-WS424-18FSP15-30-40	WS424	3.0	4.0	12/12/2018	PCB from Immunoassay (Aroclor 1254)	1.7	J
105-183	S-WS425-18FSP15-20-30	WS425	2.0	3.0	12/19/2018	PCB from Immunoassay (Aroclor 1254)	92.0	JD
105-183	S-WS425-18FSP15-30-40	WS425	3.0	4.0	12/19/2018	Total 209 PCB cong (excl non-detects)	54.3	
105-183	S-WS425-18FSP15-40-50	WS425	4.0	5.0	12/19/2018	Total 209 PCB cong (excl non-detects)	10.1	

Notes:
D - reported value is from a dilution; U - not detected; J - estimated value; B - contaminant detected in the blank.
Total 18 NOAA PCB congeners multiplied by a factor of 2.6.

Table 2-1c
Intertidal West Zone 5 Pre-Excavation PCB Characterization Sample Results for Parcel 100-118

Parcel	Type	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)	Final Qualifier
100-118	Upland	S-15L-INT247-00-10	INT247	0.0	1.0	7/8/2015	PCB from Immunoassay (Aroclor 1254)	0.50	U
100-118	Upland	S-15L-INT247-10-20	INT247	1.0	2.0	7/8/2015	PCB from Immunoassay (Aroclor 1254)	0.50	U
100-118	Saltmarsh	S-15L-INT248-00-10	INT248	0.0	1.0	7/10/2015	PCB from Immunoassay (Aroclor 1254)	16.20	D
100-118	Saltmarsh	S-15L-INT248-10-20	INT248	1.0	2.0	7/10/2015	PCB from Immunoassay (Aroclor 1254)	181.10	D
100-118	Saltmarsh	S-15L-INT248-20-30	INT248	2.0	3.0	7/10/2015	PCB from Immunoassay (Aroclor 1254)	78.50	D
100-118	Saltmarsh	S-15L-INT248-30-35	INT248	3.0	3.5	7/10/2015	PCB from Immunoassay (Aroclor 1254)	34.60	D
100-118	Upland	S-15L-INT249-00-10	INT249	0.0	1.0	7/8/2015	PCB from Immunoassay (Aroclor 1254)	0.50	U
100-118	Upland	S-15L-INT249-10-20	INT249	1.0	2.0	7/8/2015	PCB from Immunoassay (Aroclor 1254)	0.50	U
100-118	Saltmarsh	S-15L-INT250-00-10	INT250	0.0	1.0	7/10/2015	PCB from Immunoassay (Aroclor 1254)	7.80	D
100-118	Saltmarsh	S-15L-INT250-10-20	INT250	1.0	2.0	7/10/2015	PCB from Immunoassay (Aroclor 1254)	8.90	
100-118	Saltmarsh	S-15L-INT250-20-30	INT250	2.0	3.0	7/10/2015	Total 139 PCB cong (excl non-detects)	35.00	
100-118	Saltmarsh	S-15L-INT250-30-40	INT250	3.0	4.0	7/10/2015	PCB from Immunoassay (Aroclor 1254)	57.10	D
100-118	Saltmarsh	S-15L-INT250-40-46	INT250	4.0	4.6	7/10/2015	PCB from Immunoassay (Aroclor 1254)	11.50	D
100-118	Saltmarsh	S-15L-INT250-46-53	INT250	4.6	5.3	7/10/2015	PCB from Immunoassay (Aroclor 1254)	0.80	
100-118	Upland	S-15L-INT251-00-10	INT251	0.0	1.0	7/8/2015	PCB from Immunoassay (Aroclor 1254)	0.50	
100-118	Upland	S-15L-INT251-10-20	INT251	1.0	2.0	7/8/2015	PCB from Immunoassay (Aroclor 1254)	0.50	U
100-118	Upland	S-15L-INT252-00-10	INT252	0.0	1.0	7/8/2015	PCB from Immunoassay (Aroclor 1254)	0.50	U
100-118	Upland	S-15L-INT252-10-20	INT252	1.0	2.0	7/8/2015	PCB from Immunoassay (Aroclor 1254)	0.50	U
100-118	Mudflat	S-15G-INT253-00-10	INT253	0.0	1.0	8/13/2015	PCB from Immunoassay (Aroclor 1254)	22.80	
100-118	Mudflat	S-15G-INT253-10-20	INT253	1.0	2.0	8/13/2015	PCB from Immunoassay (Aroclor 1254)	9.50	
100-118	Mudflat	S-15G-INT253-20-30	INT253	2.0	3.0	8/13/2015	PCB from Immunoassay (Aroclor 1254)	2.60	
100-118	Mudflat	S-15G-INT253-30-40	INT253	3.0	4.0	8/13/2015	Total 139 PCB cong (excl non-detects)	11.00	
100-118	Mudflat	S-15G-INT253-40-50	INT253	4.0	5.0	8/13/2015	PCB from Immunoassay (Aroclor 1254)	7.40	
100-118	Upland	S-3812-0.0-.3	S-3812	0.0	0.3	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	0.70	
100-118	Upland	S-3812-.3-1.0	S-3812	0.3	1.0	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	7.80	
100-118	Upland	S-3812-1.0-1.5	S-3812	1.0	1.5	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	6.24	
100-118	Upland	S-3812-1.5-2.0	S-3812	1.5	2.0	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	2.16	
100-118	Upland	S-3813-0.0-1.0	S-3813	0.0	1.0	10/19/2001	Total 18 NOAA PCB cong (excl non-detects)	0.26	
100-118	Saltmarsh	S-0919-1	S-919	0.0	1.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	598.00	
100-118	Saltmarsh	S-0919-1DUP	S-919	0.0	1.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	21.06	
100-118	Saltmarsh	S-0919-2	S-919	1.0	2.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	17.68	
100-118	Mudflat	S-0921-1	S-921	0.0	1.0	10/23/2000	Total 18 NOAA PCB cong (excl non-detects)	31.20	
100-118	Mudflat	S-WS501-18FSP12-00-07	WS501	0.0	0.7	8/28/2018	Total 209 PCB cong (excl non-detects)	25.8	
100-118	Saltmarsh	S-WS503-18FSP12-00-10	WS503	0.0	1.0	8/21/2018	Total 209 PCB cong (excl non-detects)	11.8	
100-118	Saltmarsh	S-WS503-18FSP12-10-20	WS503	1.0	2.0	8/21/2018	PCB from Immunoassay (Aroclor 1254)	14	JD
100-118	Saltmarsh	S-WS503-18FSP12-20-30	WS503	2.0	3.0	8/21/2018	Total 209 PCB cong (excl non-detects)	84.6	
100-118	Upland	S-WS504-18FSP12-00-10	WS504	0.0	1.0	8/14/2018	Total 209 PCB cong (excl non-detects)	0.719	
100-118	Upland	S-WS504-18FSP12-10-20	WS504	1.0	2.0	8/14/2018	PCB from Immunoassay (Aroclor 1254)	6.4	J
100-118	Saltmarsh	S-WS505-18FSP12-00-10	WS505	0.0	1.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	57	JD
100-118	Saltmarsh	S-WS505-18FSP12-10-20	WS505	1.0	2.0	9/25/2018	Total 209 PCB cong (excl non-detects)	24.6	
100-118	Saltmarsh	S-WS505-18FSP12-20-25	WS505	2.0	2.5	9/25/2018	Total 209 PCB cong (excl non-detects)	21.4	
100-118	Saltmarsh	S-WS506-18FSP12-00-10	WS506	0.0	1.0	8/21/2018	PCB from Immunoassay (Aroclor 1254)	9.6	J
100-118	Saltmarsh	S-WS506-18FSP12-10-20	WS506	1.0	2.0	8/21/2018	PCB from Immunoassay (Aroclor 1254)	24	JD
100-118	Saltmarsh	S-WS506-18FSP12-20-30	WS506	2.0	3.0	8/21/2018	PCB from Immunoassay (Aroclor 1254)	92	JD
100-118	Upland	S-WS508-18FSP12-00-10	WS508	0.0	1.0	8/14/2018	Total 209 PCB cong (excl non-detects)	4.59	

Table 2-1c
Intertidal West Zone 5 Pre-Excavation PCB Characterization Sample Results for Parcel 100-118

Parcel	Type	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)	Final Qualifier
100-118	Upland	S-WS508-18FSP12-10-20	WS508	1.0	2.0	8/14/2018	PCB from Immunoassay (Aroclor 1254)	9.4	J
100-118	Saltmarsh	S-WS509-18FSP12-00-10	WS509	0.0	1.0	10/5/2018	Total 209 PCB cong (excl non-detects)	20.8	
100-118	Saltmarsh	S-WS509-18FSP12-10-20	WS509	1.0	2.0	10/5/2018	PCB from Immunoassay (Aroclor 1254)	7.9	J
100-118	Saltmarsh	S-WS509-18FSP12-20-30	WS509	2.0	3.0	10/5/2018	PCB from Immunoassay (Aroclor 1254)	5.7	J
100-118	Saltmarsh	S-WS509-18FSP12-30-40	WS509	3.0	4.0	10/5/2018	PCB from Immunoassay (Aroclor 1254)	4.2	J
100-118	Saltmarsh	S-WS510-18FSP12-00-10	WS510	0.0	1.0	8/21/2018	Total 209 PCB cong (excl non-detects)	21.5	
100-118	Saltmarsh	S-WS510-18FSP12-10-20	WS510	1.0	2.0	8/21/2018	Total 209 PCB cong (excl non-detects)	7.65	
100-118	Saltmarsh	S-WS510-18FSP12-20-30	WS510	2.0	3.0	8/21/2018	PCB from Immunoassay (Aroclor 1254)	2.6	J
100-118	Saltmarsh	S-WS510-18FSP12-30-40	WS510	3.0	4.0	8/21/2018	PCB from Immunoassay (Aroclor 1254)	17	JD
100-118	Saltmarsh	S-WS512-18FSP12-00-10	WS512	0.0	1.0	10/4/2018	Total 209 PCB cong (excl non-detects)	27.8	
100-118	Saltmarsh	S-WS512-18FSP12-10-20	WS512	1.0	2.0	10/4/2018	PCB from Immunoassay (Aroclor 1254)	1.8	J
100-118	Saltmarsh	S-WS512-18FSP12-20-30	WS512	2.0	3.0	10/4/2018	PCB from Immunoassay (Aroclor 1254)	0.34	J
100-118	Saltmarsh	S-WS512-18FSP12-30-40	WS512	3.0	4.0	10/4/2018	PCB from Immunoassay (Aroclor 1254)	0.81	J
100-118	Upland	S-WS514-18FSP12-00-10	WS514	0.0	1.0	8/14/2018	Total 209 PCB cong (excl non-detects)	0.0893	
100-118	Upland	S-WS514-18FSP12-10-20	WS514	1.0	2.0	8/14/2018	PCB from Immunoassay (Aroclor 1254)	4.7	J
100-118	Saltmarsh	S-WS515-18FSP12-00-10	WS515	0.0	1.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	40	JD
100-118	Saltmarsh	S-WS515-18FSP12-10-20	WS515	1.0	2.0	9/25/2018	Total 209 PCB cong (excl non-detects)	17.9	
100-118	Saltmarsh	S-WS515-18FSP12-20-30	WS515	2.0	3.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	2.2	J
100-118	Saltmarsh	S-WS515-18FSP12-30-40	WS515	3.0	4.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	6.1	J
100-118	Upland	S-WS516-18FSP12-00-10	WS516	0.0	1.0	8/14/2018	Total 209 PCB cong (excl non-detects)	0.0207	
100-118	Upland	S-WS516-18FSP12-10-20	WS516	1.0	2.0	8/14/2018	PCB from Immunoassay (Aroclor 1254)	10	J
100-118	Upland	S-WS518-18FSP12-00-10	WS518	0.0	1.0	8/14/2018	Total 209 PCB cong (excl non-detects)	0.056	
100-118	Upland	S-WS518-18FSP12-10-20	WS518	1.0	2.0	8/14/2018	PCB from Immunoassay (Aroclor 1254)	7.7	J
100-118	Upland	S-WS519-18FSP12-00-10	WS519	0.0	1.0	8/15/2018	Total 209 PCB cong (excl non-detects)	0.141	
100-118	Upland	S-WS519-18FSP12-10-20	WS519	1.0	2.0	8/15/2018	PCB from Immunoassay (Aroclor 1254)	11	J
100-118	Saltmarsh	S-WS520-18FSP12-00-10	WS520	0.0	1.0	10/5/2018	PCB from Immunoassay (Aroclor 1254)	4.8	J
100-118	Saltmarsh	S-WS520-18FSP12-10-20	WS520	1.0	2.0	10/5/2018	PCB from Immunoassay (Aroclor 1254)	5.6	J
100-118	Saltmarsh	S-WS520-18FSP12-20-30	WS520	2.0	3.0	10/5/2018	PCB from Immunoassay (Aroclor 1254)	3.5	J
100-118	Saltmarsh	S-WS520-18FSP12-30-40	WS520	3.0	4.0	10/5/2018	PCB from Immunoassay (Aroclor 1254)	4.1	J
100-118	Mudflat	S-WS521-18FSP12-00-10	WS521	0.0	1.0	9/17/2018	PCB from Immunoassay (Aroclor 1254)	9.9	J
100-118	Mudflat	S-WS521-18FSP12-10-20	WS521	1.0	2.0	9/17/2018	PCB from Immunoassay (Aroclor 1254)	2.8	J
100-118	Mudflat	S-WS521-18FSP12-20-30	WS521	2.0	3.0	9/17/2018	PCB from Immunoassay (Aroclor 1254)	3.8	J

Notes:
D - reported value is from a dilution; U - not detected; J - estimated value
Total 18 NOAA PCB congeners multiplied by a factor of 2.6.

Table 2-1d
Intertidal West Zone 5 Pre-Excavation PCB Characterization Sample Results for Parcel 100-117

Parcel	Type	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)	Final Qualifier
100-117	Upland	S-15O-INT254-00-10	INT254	0.0	1.0	10/20/2015	PCB from Immunoassay (Aroclor 1254)	1.80	
100-117	Upland	S-15O-INT254-10-20	INT254	1.0	2.0	10/20/2015	PCB from Immunoassay (Aroclor 1254)	1.40	
100-117	Upland	S-15O-INT255-00-10	INT255	0.0	1.0	10/20/2015	PCB from Immunoassay (Aroclor 1254)	1.60	
100-117	Upland	S-15O-INT255-10-20	INT255	1.0	2.0	10/20/2015	PCB from Immunoassay (Aroclor 1254)	1.00	
100-117	Mudflat	S-15O-INT256-00-10	INT256	0.0	1.0	10/26/2015	Total 139 PCB cong (excl non-detects)	39.00	
100-117	Mudflat	S-15O-INT256-10-20	INT256	1.0	2.0	10/26/2015	Total 139 PCB cong (excl non-detects)	210.00	
100-117	Mudflat	S-15O-INT256-20-30	INT256	2.0	3.0	10/26/2015	PCB from Immunoassay (Aroclor 1254)	23.70	D
100-117	Mudflat	S-15O-INT256-30-40	INT256	3.0	4.0	10/26/2015	PCB from Immunoassay (Aroclor 1254)	10.60	D
100-117	Mudflat	S-15O-INT256-40-46	INT256	4.0	4.6	10/26/2015	PCB from Immunoassay (Aroclor 1254)	2.00	
100-117	Upland	S-15O-INT257-00-10	INT257	0.0	1.0	10/20/2015	PCB from Immunoassay (Aroclor 1254)	2.10	
100-117	Upland	S-15O-INT257-10-20	INT257	1.0	2.0	10/20/2015	PCB from Immunoassay (Aroclor 1254)	2.00	
100-117	Mudflat	S-0101-1	S-101	0.0	1.0	9/23/1999	Total 18 NOAA PCB cong (excl non-detects)	44.20	
100-117	Mudflat	S-0101-2	S-101	1.0	2.0	9/23/1999	Total 18 NOAA PCB cong (excl non-detects)	119.60	
100-117	Mudflat	S-0101-3	S-101	2.0	3.0	9/23/1999	Total 18 NOAA PCB cong (excl non-detects)	3.12	
100-117	Mudflat	S-0108-1	S-108	0.0	1.0	9/23/1999	Total 18 NOAA PCB cong (excl non-detects)	5.72	
100-117	Mudflat	S-0108-2	S-108	1.0	2.0	9/23/1999	Total 18 NOAA PCB cong (excl non-detects)	145.60	
100-117	Mudflat	S-0108-3	S-108	2.0	3.0	9/23/1999	Total 18 NOAA PCB cong (excl non-detects)	0.16	
100-117	Upland	S-WS522-18FSP12-00-10	WS522	0.0	1.0	9/17/2018	Total 209 PCB cong (excl non-detects)	0.18	
100-117	Upland	S-WS522-18FSP12-10-20	WS522	1.0	2.0	9/17/2018	PCB from Immunoassay (Aroclor 1254)	1.7	J
100-117	Upland	S-WS524-18FSP12-00-10	WS524	0.0	1.0	9/20/2018	Total 209 PCB cong (excl non-detects)	0.31	
100-117	Upland	S-WS524-18FSP12-10-20	WS524	1.0	2.0	9/20/2018	PCB from Immunoassay (Aroclor 1254)	0.82	JB
100-117	Mudflat	S-WS525-18FSP12-00-10	WS525	0.0	1.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	0.86	JB
100-117	Mudflat	S-WS525-18FSP12-10-20	WS525	1.0	2.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	0.42	J
100-117	Mudflat	S-WS525-18FSP12-20-30	WS525	2.0	3.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	2.2	J
100-117	Upland	S-WS527-18FSP12-00-10	WS527	0.0	1.0	9/20/2018	Total 209 PCB cong (excl non-detects)	0.0278	
100-117	Upland	S-WS527-18FSP12-10-20	WS527	1.0	2.0	9/20/2018	PCB from Immunoassay (Aroclor 1254)	0.78	JB
100-117	Mudflat	S-WS528-18FSP12-00-10	WS528	0.0	1.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	3.9	J
100-117	Mudflat	S-WS528-18FSP12-10-20	WS528	1.0	2.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	1.6	J
100-117	Mudflat	S-WS528-18FSP12-20-30	WS528	2.0	3.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	29	JD
100-117	Saltmarsh	S-WS531-18FSP12-00-10	WS531	0.0	1.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	8.7	J
100-117	Saltmarsh	S-WS531-18FSP12-10-20	WS531	1.0	2.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	7.1	J
100-117	Saltmarsh	S-WS531-18FSP12-20-30	WS531	2.0	3.0	9/25/2018	PCB from Immunoassay (Aroclor 1254)	6.3	J

Notes:
D - reported value is from a dilution; J - estimated value; B - contaminant detected in blank
Total 18 NOAA PCB congeners multiplied by a factor of 2.6.

Table 2-1e
Intertidal West Zone 5 Pre-Excavation PCB Characterization Sample Results for Parcel 100-120, 100-85, and ROW

Parcel	Type	Sample ID	Station ID	Sample Depth Top (ft)	Sample Depth Bottom (ft)	Sample Date	Description	Total PCB (mg/kg)
100-120	Upland	S-15G-INT261-00-10	INT261	0.0	1.0	8/5/2015	PCB from Immunoassay (Aroclor 1254)	0.70
100-120	Upland	S-15G-INT261-10-20	INT261	1.0	2.0	8/5/2015	PCB from Immunoassay (Aroclor 1254)	1.70
100-120	Mudflat	S-15G-INT262-00-10	INT262	0.0	1.0	8/28/2015	PCB from Immunoassay (Aroclor 1254)	11.70
100-120	Mudflat	S-15G-INT262-10-20	INT262	1.0	2.0	8/28/2015	PCB from Immunoassay (Aroclor 1254)	4.30
100-85	Mudflat	S-15L-INT258-00-10	INT258	0.0	1.0	7/16/2015	PCB from Immunoassay (Aroclor 1254)	7.50
100-85	Mudflat	S-15L-INT258-10-20	INT258	1.0	2.0	7/16/2015	PCB from Immunoassay (Aroclor 1254)	0.90
100-85	Mudflat	S-15G-INT259-00-10	INT259	0.0	1.0	8/28/2015	Total 139 PCB cong (excl non-detects)	9.7
100-85	Mudflat	S-15G-INT259-10-20	INT259	1.0	2.0	8/28/2015	PCB from Immunoassay (Aroclor 1254)	1
100-85	Mudflat	S-15L-INT260-00-10	INT260	0.0	1.0	7/16/2015	PCB from Immunoassay (Aroclor 1254)	9.10
100-85	Mudflat	S-15L-INT260-10-23	INT260	1.0	2.3	7/16/2015	PCB from Immunoassay (Aroclor 1254)	0.70
100-85	Mudflat	S-0113-1	S-113	0.0	1.0	9/27/1999	Total 18 NOAA PCB cong (excl non-detects)	338.00
100-85	Mudflat	S-0113-2	S-113	1.0	2.0	9/27/1999	Total 18 NOAA PCB cong (excl non-detects)	174.20
100-85	Mudflat	S-0113-3	S-113	2.0	3.0	9/27/1999	Total 18 NOAA PCB cong (excl non-detects)	3.12
100-85	Saltmarsh	S-0116-1	S-116	0.0	1.0	9/23/1999	Total 18 NOAA PCB cong (excl non-detects)	202.80
100-85	Saltmarsh	S-0116-2	S-116	1.0	2.0	9/23/1999	Total 18 NOAA PCB cong (excl non-detects)	7.80
100-85	Upland	S-3818-0.0-1.0	S-3818	0.0	1.0	10/19/2001	Total 18 NOAA PCB cong (excl non-detects)	0.04
100-85	Upland	S-0807-1	S-807	0.0	1.0	10/18/2000	Total 18 NOAA PCB cong (excl non-detects)	0.60
100-85	Upland	S-0807-2	S-807	1.0	2.0	10/18/2000	Total 18 NOAA PCB cong (excl non-detects)	0.19
100-85	Mudflat	S-WS532-18FSP12-00-10	WS532	0.0	1.0	9/18/2018	PCB from Immunoassay (Aroclor 1254)	9.7
100-85	Mudflat	S-WS532-18FSP12-10-15	WS532	1.0	1.5	9/18/2018	PCB from Immunoassay (Aroclor 1254)	6.4
100-85	Saltmarsh	S-WS533-18FSP12-00-10	WS533	0.0	1.0	9/20/2018	PCB from Immunoassay (Aroclor 1254)	65
100-85	Saltmarsh	S-WS534-18FSP12-00-10	WS534	0.0	1.0	9/20/2018	PCB from Immunoassay (Aroclor 1254)	43
100-85	Saltmarsh	S-WS534-18FSP12-10-20	WS534	1.0	2.0	9/20/2018	Total 209 PCB cong (excl non-detects)	24.3
100-85	Saltmarsh	S-WS534-18FSP12-20-30	WS534	2.0	3.0	9/20/2018	Total 209 PCB cong (excl non-detects)	59.1
100-85	Saltmarsh	S-WS534-18FSP12-30-40	WS534	3.0	4.0	9/20/2018	Total 209 PCB cong (excl non-detects)	81.9
100-85	Saltmarsh	S-WS534-18FSP12-40-49	WS534	4.0	4.9	9/20/2018	Total 209 PCB cong (excl non-detects)	52
100-85	Saltmarsh	S-WS534B-18FSP12-50-60	WS534B	5.0	6.0	3/13/2019	Total 209 PCB cong (excl non-detects)	4.85
100-85	Upland	S-WS535-18FSP12-00-10	WS535	0.0	1.0	8/28/2018	Total 209 PCB cong (excl non-detects)	0.477
100-85	Upland	S-WS535-18FSP12-10-20	WS535	1.0	2.0	8/28/2018	PCB from Immunoassay (Aroclor 1254)	23
100-85	Saltmarsh	S-WS537-18FSP12-00-10	WS537	0.0	1.0	10/4/2018	PCB from Immunoassay (Aroclor 1254)	0.64
100-85	Saltmarsh	S-WS537-18FSP12-10-20	WS537	1.0	2.0	10/4/2018	PCB from Immunoassay (Aroclor 1254)	3.3
100-85	Saltmarsh	S-WS537-18FSP12-20-30	WS537	2.0	3.0	10/4/2018	PCB from Immunoassay (Aroclor 1254)	5.4
100-85	Saltmarsh	S-WS539-18FSP12-10-20	WS539	1.0	2.0	3/13/2019	PCB from Immunoassay (Aroclor 1254)	15.1
100-85	Saltmarsh	S-WS539-18FSP12-20-30	WS539	2.0	3.0	3/13/2019	PCB from Immunoassay (Aroclor 1254)	35.7
ROW	Saltmarsh	S-3817-0.0-1.0REP	S-3817	0.0	1.0	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	14.56
ROW	Saltmarsh	S-3817-0.0-1.0	S-3817	0.0	1.0	11/2/2001	Total 18 NOAA PCB cong (excl non-detects)	28.60

Notes:
D - reported value is from a dilution; U - not detected; J - estimated
Total 18 NOAA PCB congeners multiplied by a factor of 2.6

Table 2-2a
Intertidal West Zone 4 Compliance Survey Control Table

Parcel	Station ID	Location	Easting	Northing	Design Elevation	Post-Excavation Elevation	Δ (ft)	Date Surveyed	Restoration Design Elevation	Post-Restoration Elevation	Δ (ft)	Date Surveyed
			MA State		NAVD88				NAVD88 ft			
105-170	WS406	Sidewall	814910.3	2704682	2.5	1.79	0.71	7/23/2021	3.25	3.42	0.17	8/11/2021
105-170	WS408	Sidewall	814879.9	2704614	2.1	1.54	0.56	7/27/2021	3.40	3.48	0.08	8/10/2021
105-170	WS430	Sidewall	814931.1	2704707	-0.4	-0.54	0.14	7/29/2021	1.00	1.09	0.09	8/11/2021
105-170	WS433	Sidewall	814928.5	2704742	-1	-1.09	0.09	7/28/2021	1.51	1.66	0.15	8/5/2021
105-170	WS434	Sidewall	814894.1	2704872.4	-1.2	-1.49	0.29	7/29/2021	2.00	2.11	0.11	8/3/2021
105-170	WS435	Sidewall	814917.1	2704852.7	-3.1	-3.36	0.26	7/29/2021	0.50	0.57	0.07	8/4/2021
105-170	WS436	Sidewall	814925.8	2704781.4	-1.6	-1.77	0.17	7/29/2021	1.53	1.71	0.18	8/6/2021
105-170	WS437	Sidewall	814937.7	2704754.9	-2.5	-2.74	0.24	7/29/2021	-0.12	0.02	0.14	8/6/2021
105-170	WS438	Sidewall	814899.5	2704987.5	-1.4	-1.53	0.13	7/28/2021	0.84	1.10	0.26	8/2/2021
105-170	WS439	Sidewall	814931.3	2704608.7	-2.87	-3.02	0.15	7/23/2021	-1.10	-0.94	0.16	8/9/2021
105-170	WS440	Sidewall	814857	2704517.9	2	1.57	0.43	7/23/2021	2.85	3.00	0.15	8/9/2021
105-170	WS441	Sidewall	814923.7	2704514.5	-3.42	-3.82	0.40	7/23/2021	-1.19	-0.93	0.26	8/9/2021
105-170	WS457	Sidewall	814883.1	2704932.5	0.6	0.32	0.28	7/28/2021	1.65	1.75	0.10	8/2/2021
105-170	WS458	Sidewall	814904.7	2704923.3	-2	-2.22	0.22	7/29/2021	0.57	0.72	0.15	8/3/2021
105-170	WS426	Floor	814892.5	2704911.1	-1	-1.51	0.51	7/29/2021	0.92	1.17	0.25	8/3/2021
105-170	S-926	Floor	814927	2704799	-2	-2.66	0.66	7/29/2021	0.92	1.13	0.21	8/6/2021
105-170	WS407	Floor	814927.5	2704654.3	-0.4	-1.31	0.91	7/23/2021	1.05	1.12	0.07	8/11/2021
105-170	INT237	Floor	814911	2704562	-0.9	-0.94	0.04	7/21/2021	0.95	1.07	0.12	8/9/2021
105-170	WS411	Floor	814899.6	2704519.5	-2.4	-2.90	0.50	7/23/2021	1.00	1.12	0.12	8/9/2021
105-183	WS442	Sidewall	814852.2	2704449.1	2.1	1.73	0.37	7/20/2021	3.25	3.29	0.04	8/4/2021
105-183	WS443	Sidewall	814909.8	2704435.5	-3.05	-3.34	0.29	7/23/2021	0.50	0.65	0.15	8/4/2021
105-183	WS444	Sidewall	814849	2704355.5	2	1.79	0.21	7/27/2021	3.50	3.65	0.15	8/4/2021
105-183	WS445	Sidewall	814921.1	2704351.3	-2.3	See note						
105-183	WS446	Sidewall	814879.4	2704262.4	1	0.93	0.07	7/1/2021	3.10	3.34	0.24	7/29/2021
105-183	WS447	Sidewall	814930.7	2704279	-1.8	-1.92	0.12	7/1/2021	-1.63	-1.51	0.12	7/28/2021
105-183	WS448	Sidewall	814965.2	2704221	0.5	0.42	0.08	6/30/2021	1.59	1.87	0.28	7/23/2021
105-183	WS449	Sidewall	814982.9	2704198.2	-3.7	-4.20	0.50	6/29/2021	-0.56	-0.43	0.13	7/22/2021
105-183	WS450	Sidewall	814983.7	2704117.5	0.7	0.41	0.29	6/28/2021	2.16	2.33	0.17	7/20/2021
105-183	WS451	Sidewall	814999.3	2704105.4	-4.1	-4.29	0.19	6/28/2021	-1.80	-1.52	0.28	7/20/2021
105-183	WS452	Sidewall	814982.3	2704018.3	-0.3	-0.46	0.16	6/28/2021	2.24	2.49	0.25	7/19/2021
105-183	WS453	Sidewall	815001.9	2704013.9	-4.7	See note						
105-183	WS454	Sidewall	815015	2703921.5	-3.58	-3.74	0.16	6/21/2021	0.50	0.67	0.17	7/15/2021
105-183	WS455	Sidewall	814975	2703921.5	3.95	3.75	0.20	6/24/2021	4.56	4.69	0.13	7/15/2021
105-183	WS456	Sidewall	815013.4	2703863.9	-2.9	-2.98	0.08	6/21/2021	-1.65	-1.50	0.15	7/15/2021
105-183	WS412	Floor	814878.8	2704431.3	-4.5	-5.05	0.55	7/12/2021	1.50	1.77	0.27	8/4/2021
105-183	WS415	Floor	814907	2704333.3	-4.3	-4.61	0.31	7/12/2021	0.73	0.99	0.26	8/4/2021
105-183	WS418	Floor	814933.8	2704256.5	-0.55	-0.79	0.24	6/30/2021	0.30	0.40	0.10	7/28/2021
105-183	WS420	Floor	814987.1	2704052.7	-5.1	-5.59	0.49	6/28/2021	1.08	1.39	0.31	7/19/2021
105-183	WS423	Floor	814996.1	2703922.8	-1	-1.43	0.43	6/24/2021	1.43	1.77	0.34	7/15/2021
105-183	WS425	Floor	814988.9	2704129.7	-3.6	-3.78	0.18	6/28/2021	0.50	0.65	0.15	7/20/2021
Note: Excavation was continued up to edge of installed cap, confirmed by visual inspection												

Table 2-2b
Intertidal West Zone 5 Compliance Survey Control Table

Parcel	Station ID	Location	Easting	Northing	Design Elevation	Post-Excavation Elevation	Δ (ft)	Date Surveyed	Restoration Design Elevation	Post-Restoration Elevation	Δ (ft)	Date Surveyed
			MA State		NAVD88 ft				NAVD88 ft			
100-118	WS509	Sidewall	814986.2	2703612.9	-0.6	-0.68	0.1	6/14/2021	0.86	1.01	0.15	7/1/2021
100-118	WS512	Sidewall	815001.2	2703516.8	-0.8	-1.06	0.3	6/14/2021	0.78	0.85	0.07	6/29/2021
100-118	WS538	Sidewall	814978.4	2703831.7	0.7	-0.35	1.1	6/18/2021	1.65	1.85	0.20	7/8/2021
100-118	WS539	Sidewall	814971.1	2703735.2	0.5	-0.53	1.0	6/16/2021	1.38	1.59	0.21	7/8/2021
100-118	WS540	Sidewall	814974.4	2703655.9	0.6	0.52	0.1	6/15/2021	1.58	1.81	0.23	7/2/2021
100-118	WS541	Sidewall	815017.4	2703434.5	0.7	0.18	0.5	6/10/2021	1.40	1.56	0.16	6/29/2021
100-118	WS542	Sidewall	815039.4	2703368.9	-2.1	-2.43	0.3	6/10/2021	0.00	0.37	0.37	6/28/2021
100-118	WS557	Sidewall	815008.5	2703836.3	-2.9	-2.95	0.1	6/18/2021	See note 1			
100-118	WS558	Sidewall	814981.8	2703750.1	-3.5	-3.66	0.2	6/16/2021	0.00	0.38	0.38	7/8/2021
100-118	WS559	Sidewall	814986.3	2703663.7	-5.1	-5.29	0.2	6/15/2021	0.50	0.61	0.11	7/2/2021
100-118	WS560	Sidewall	815018.1	2703482.6	-3.7	-3.79	0.1	6/14/2021	-1.40	-1.23	0.17	6/29/2021
100-118	WS561	Sidewall	815035.4	2703389.9	-2.4	-2.92	0.5	6/10/2021	0.80	0.92	0.12	6/28/2021
100-118	INT248	Floor	814981	2703647	-3.4	-3.61	0.2	6/15/2021	1.00	1.18	0.18	7/7/2021
100-118	S-919	Floor	815028	2703399	-2.0	-2.05	0.0	6/10/2021	1.24	1.53	0.29	6/28/2021
100-118	WS505	Floor	814978.6	2703715.1	-1.1	-1.48	0.4	6/15/2021	1.05	1.28	0.23	7/8/2021
100-118	WS515	Floor	815014.5	2703468.9	-0.9	-1.18	0.3	6/11/2021	0.90	1.13	0.23	6/29/2021
100-118	WS543	Floor	814985.5	2703808.2	-2.4	-2.59	0.2	6/18/2021	1.20	1.43	0.23	7/8/2021
100-117	WS544	Sidewall	815102.1	2703217.4	-2.4	-3.18	0.8	5/26/2021	See note 2			
100-117	WS545	Sidewall	815097.7	2703172	-2.9	-3.04	0.1	5/26/2021	See note 2			
100-117	WS546	Sidewall	815104.1	2703138.4	-2.7	-2.89	0.2	5/26/2021	See note 2			
100-117	WS547	Sidewall	815108.7	2703065.9	-2.6	-2.74	0.1	5/27/2021	See note 2			
100-117	WS548	Sidewall	815122.2	2702982	-2.7	-2.89	0.2	5/26/2021	See note 2			
100-117	WS562	Sidewall	815099	2703187.9	-3.1	-3.35	0.3	5/26/2021	See note 2			
100-117	WS563	Sidewall	815105.9	2703119.5	-3.0	-3.33	0.3	5/26/2021	See note 2			
100-117	WS564	Sidewall	815117.9	2703022.9	-4.0	-4.48	0.5	5/27/2021	See note 2			
100-117	S-101	Floor	815100	2703200	-3.7	-3.83	0.1	5/26/2021	See note 2			
100-117	S-108	Floor	815115	2703000	-2.7	-3.04	0.3	5/27/2021	See note 2			
100-117	WS549	Floor	815105.9	2703100.2	-2.8	-3.05	0.3	5/26/2021	See note 2			
100-85	WS550	Sidewall	815136.4	2702629.7	-1.7	-1.80	0.1	6/2/2021	-0.85	-0.66	0.19	6/22/2021
100-85	WS551	Sidewall	815102	2702571	0.6	0.26	0.3	6/2/2021	1.68	1.96	0.28	6/23/2021
100-85	WS552	Sidewall	815019.7	2702515.7	0.0	-0.38	0.4	6/4/2021	1.30	1.56	0.26	6/24/2021
100-85	WS553	Sidewall	814934.8	2702469.8	-0.1	-0.13	0.0	6/4/2021	1.20	1.4	0.20	6/24/2021
100-85	WS554	Sidewall	814847.6	2702464.8	-0.8	-1.01	0.2	6/7/2021	0.62	0.77	0.15	6/24/2021
100-85	WS565	Sidewall	815121.3	2702562.1	-3.0	-3.32	0.3	6/2/2021	-1.96	-1.49	0.47	6/22/2021
100-85	WS566	Sidewall	815052	2702525.3	-2.9	-3.24	0.3	6/3/2021	-1.06	-0.99	0.07	6/23/2021
100-85	WS567	Sidewall	814978.1	2702470.8	-2.5	-2.69	0.2	6/4/2021	-0.55	-0.4	0.15	6/23/2021
100-85	WS568	Sidewall	814886.1	2702449.6	-2.6	-2.71	0.1	6/7/2021	-1.30	-1.09	0.21	6/24/2021
100-85	S-116	Floor	814900	2702465	-0.3	-0.49	0.2	6/7/2021	1.25	1.45	0.20	6/25/2021
100-85	WS534B	Floor	815072.5	2702551.9	-3.9	-4.72	0.8	6/3/2021	0.56	0.69	0.13	6/23/2021
100-85	WS539	Floor	815006	2702496.3	-1.6	-1.80	0.2	6/4/2021	1.00	1.36	0.36	6/24/2021
100-85	WS555	Floor	815144.9	2702586.9	-2.9	-3.14	0.2	6/2/2021	-2.52	-2.45	0.07	6/22/2021
100-85	WS556	Floor	814953.6	2702463.7	-2.0	-2.29	0.3	6/4/2021	0.60	0.73	0.13	6/24/2021

Notes:
1: outside of restoration area
2: no restoration of parcel 100-117

Table 2-3
West Zone 4 and West Zone 5 Planting Summary

DATE	ACTIVITY
10/13 - 18/2021	Installation of containerized plants at West Zone 4 and West Zone 5
10/25/2021	Hydroseeding at West Zone 4
6/7 - 24/2022	Marsh plantings, hydroseeding, and herbivory protection fence installed in West Zone 4 and 5

Attachment A

West Zone 4 and West Zone 5 Topsoil Summary

			Acceptable Nutrient Ranges										Geotech (Method D7928)			MCP S-1 Soil Cleanup Standards									
Batch #	Date	Supplier	pH 6 - 7	CEC >20 meq/100g	Base Saturation >35%	Avail Plant Moisture 50 - 70%	Organic Matter Content 5 - 8%	Mg 50 - 120 ppm	Ca 1000 - 1500 ppm	K 100 - 160 ppm	N >25 ppm	P >15 ppm	Sand 45 - 85%	Silt 0 - 50%	Clay 0 - 20%	Metals	Petroleum Hydrocarbons	Target VOCs	Target SVOCs	EDB	1,4-Dioxane	Cyanide	PCBs	Backfill Location	Approved Vol (CY)
016	5/27/21	Read Custom	6.5	11	81.9	NA	5.9	174	1350	322	107.3	118	77.3	13.5	9.2	-	-	-	-	-	-	-	-	WZ5	500
017	5/27/21	Read Custom	6.5	11.2	82.3	NA	5.3	180	1377	331	118.3	118	76.6	13.6	9.8	-	-	-	-	-	-	-	-	WZ5/WZ4	500
018	5/27/21	Read Custom	6.5	8.7	77.1	NA	5.5	132	957	326	78	88	77.1	13.7	9.2	-	-	-	-	-	-	-	-	WZ5/WZ4	500
019	6/3/21	Read Custom	6.5	9.6	79.1	NA	5.2	134	1158	269	103.5	99	76.5	15.5	8	-	-	-	-	-	-	-	-	WZ4	500
020	6/7/21	Read Custom	7.3	9.9	100	NA	6.1	187	1443	433	121.1	151	83.4	11.3	5.4	-	-	-	-	-	-	-	-	WZ4	500
021	6/7/21	Read Custom	7.1	6.5	100	NA	5.6	116	962	284	119.9	102	84.8	10.3	4.9	-	-	-	-	-	-	-	-	WZ4	500
022	8/10/21	Read Custom	7.5	7.7	99.9	NA	6.1	139	1158	312	116.5	115	78	14.5	7.5	-	-	-	-	-	-	-	-	WZ4	500
023	8/10/21	Read Custom	7.2	8.3	100	NA	5.5	147	1236	344	118.4	124	79.7	12.6	7.7	-	-	-	-	-	-	-	-	WZ4	500
024	8/12/21	Read Custom	7.2	8.2	100	NA	6.1	149	1228	322	97.3	106	81.4	10.1	8.4	-	-	-	-	-	-	-	-	WZ4	500
001	02/14/22	Read Custom	6.2	13	73.8	NA	5.7	156.0	1512	277	123.5	277	77.6	15.2	7.2	√	√	√	√	√	√	√	√	WZ4, WZ5, BP1, EZ5	450
Averages:			6.9	9.4	89.4	**NA**	**5.7**	**151.4**	**1238.1**	**322.0**	**110.4**	**129.8**	**79.2**	**13.0**	**7.7**										

Attachment B

Intertidal
West Zone 4
Final Planting
Plan

WZ-4 PLANTING PLAN

New Bedford Harbor Superfund Site

August 2021

FIGURES

105-170

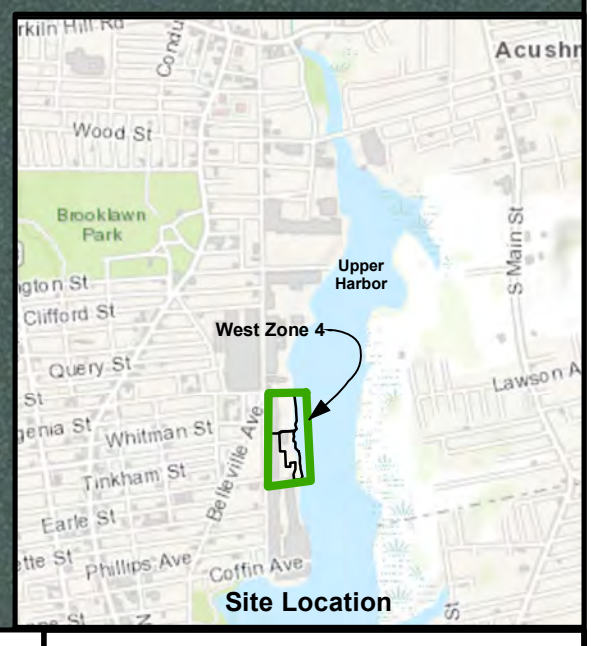
105-183

L-014
CAP

L-114
CAP

Riverside Ave

Manomet Street



Legend

- West Zone 4 Management Area
- Parcel Boundary
- Proposed Limits of Excavation
- Excavation Extent with Sand Backfill and Cap
- Final Extent Engineered Cap

Basemap Data Source:
MassGIS, ESRI

0 150 300 Feet

JACOBS™

Intertidal West Zone 4
Site Location and Features

New Bedford Harbor Superfund Site

October 2020 **Figure 1**

Path: Y:\NBH\Projects\35BG1001\20210901\ArcGIS\Fig 2-1 WZ4_Update_WP_Site_Location_20200929A.mxd

N
W E
S

DATE	REVISION	BY
8/20/21	Rev 1	kjt
9/8/21	INCORPORATED COMMENTS	kjt

CR ENVIRONMENTAL, INC. WBE
ECOLOGICAL AND OCEANOGRAPHIC CONSULTANTS
www.crenvironmental.com

DRAWN: kjt | FILE NAME: CRWZ4-8-20-2021-Final.dwg | Figure
Scale:1"=80 ft

New Bedford Harbor Superfund Site
WZ-4 (Parcel 105-183 & 105-170) Mitigation
Figure 2

TABLES

TABLE 1
WZ-4 Plants for Restoration

Reference Figure 2 - New Bedford Harbor Superfund Site WZ-4 (Parcel 105-183 105-170) Mitigation

HABITAT	Total Area	On Center Spacing	Southern Parcel 105-183 & Northern Parcel 105-170
LOW MARSH	25,255 sq ft	square spacing	TOTAL Number of Plants
Spartina alterniflora (2" plug)	Saltmarsh Cordgrass	1 ft	25,255 plugs
Directions	Plant plugs with slow release fertilizer. Need goose fencing barrier of mesh along water's edge		Planting range 0.5 ft to 2.2 ft NAVD88
HIGH MARSH	11,538 sq ft	square spacing	TOTAL Number of Plants
Spartina patens (2" plugs)	Salt Meadow Cordgrass	1 ft	3,923
Distichlis spicata (2" plugs)	Spike Grass	1 ft	7,615
Directions	Plant plugs with slow release fertilizer.		Planting range 2.2 to 3.2 ft NAVD88. Mixed planting with more *Distichlis* lower in this elevation zone.

TABLE 1 (cont.)
WZ-4 Plants for Restoration

Reference Figure 2 - New Bedford Harbor Superfund Site WZ-4 (Parcel 105-183 105-170) Mitigation

HABITAT	**Total Area**	**On Center Spacing**	**Southern Parcel 105-183 & Northern Parcel 105-170**
HIGH TIDE BUSH ZONE	9,694 sq ft	square spacing	TOTAL Number of Plants
Spartina patens (2" plugs)	Salt Meadow Cordgrass	3 ft	718
Solidago sempervirens (2" plugs)	Seaside Goldenrod	3 ft	359
Iva frutescens (1 gallon)	High Tide Bush	3 ft	1077
Overseed with ***NE Salt Tolerant Grass Mix*** *1 lb/1250 sq ft therefore* ***~8 lbs required for 9,694 sq ft*** *(see Attachment 1)*			
Directions: General range 3.2 to 3.6 ft NAVD88. Plant high tide bush 3 ft on center. In between the rows of high tide bush plant plugs of *Spartina patens* and seaside goldenrod 3 ft on center with slow release fertilizer. Overseed zone with NE Salt Tolerant Grass *Mix.*			

TABLE 1 (cont.)
WZ-4 Plants for Restoration

Reference Figure 2 - New Bedford Harbor Superfund Site WZ-4 (Parcel 105-183 105-170) Mitigation

TRANSITION ZONE	Common Name	On Center Spacing	Parcel 105-170		Parcel 105-183		TOTAL
(1 gallon)		triangular	872 sq ft	1174 sq ft	977 sq ft	229 sq ft	**3,252 sq ft**
Panicum amarum var. amarulum	Coastal Panic Grass	3 ft	112				**112**
Schizahyrium scoparium	Little Bluestem	3 ft		75	62		**137**
Panicum virgatum	Switchgrass	3 ft		75	62	29	**166**
Myrica pensylvanica	Northern Bayberry	15 ft		2	2		**4**
Rosa virginiana	Virginia Rose	15 ft		3	2		**5**
Vibrunum dentatum	Arrow-wood	15 ft		1	1		**2**
Overseed with NE Salt Tolerant Grass Mix 1 lb/1250 sq ft			0.7 lb	1 lb	0.8 lb	0.2 lb	**2.7 lbs**
Directions: General range 3.6 ft NAVD88 to riverwalk path on the southern parcel, and red cedar tree and pea stone landscaped area on the northern parcel (follow polygon limits). Plant 1 gallon grasses 3 ft on center and shrubs 15 ft on center. Overseed zone with NE Salt Tolerant Grass Mix. Use slow release fertilizer in planting hole. Broadcasting fertilizer will encourage weed growth.							

TABLE 1 (cont.)
WZ-4 Plants for Restoration

Reference Figure 2 - New Bedford Harbor Superfund Site WZ-4 (Parcel 105-183 105-170) Mitigation

UPLAND AREAS

Parcel 105-183 - Seed disturbed upland (28,396 sq ft) with **New England Conservation and Wildlife Mix** at the rate of 1 lb/1750 sq ft and mulch (see Attachment 1). Need **~ 16.5 lbs**. Owner requested no shrub or tree plantings.

Parcel 105-170 - Lawn grass seeding (3,734 sq ft) and beach rose shrub planting will be done per the direction/discretion of Acorn Management (owners). Owners requested 35 *Rosa rugosa* for the pea stone area. The variety suggested is 'Belle Poitevine' (see Attachment H).

Suggestion for plantings:

LANDSCAPED Pea Stone	**Total Area**	**On Center triangular**	**Number of Plants**
Rosa rugosa 'Belle Poitevine' (3 gallon)	Beach Rose-pink double bloom	11 ft	35

Note: Planting Zones are based on pre-excavation conditions (see Attachment O 'WZ-4 Plant Zonation')

Reference: Jacobs 2019, *Draft Final Generic Upper Harbor Intertidal Work Plan Revision 1* , ACE-J23-35BG2000-M1-0109 (May)

ATTACHMENT 1

NEW ENGLAND SEED MIXES

NEW ENGLAND WETLAND PLANTS, INC

820 WEST STREET, AMHERST, MA 01002

PHONE: 413-548-8000 FAX 413-549-4000

EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

New England Coastal Salt Tolerant Grass Mix

Botanical Name	Common Name	Indicator
Elymus canadensis	Canada Wild Rye	FACU+
Festuca rubra	Red Fescue	FACU
Panicum amarum	Atlantic Coastal Panic Grass	FACU-
Andropogon gerardii	Big Bluestem	FAC
Sorghastrum nutans	Indian Grass	UPL
Panicum virgatum	Switch Grass	FAC
Juncus tenuis	Path Rush	FAC

PRICE PER LB. $26.00 MIN. QUANITY 4 LBS. **TOTAL:** $104.00 APPLY: 35 LBS/ACRE :1250 sq ft/lb

The New England Coastal Salt Tolerant Seed Mix contains a selection of native grasses that tolerate salty conditions. This mix is appropriate for drier coastal areas that receive salt spray or mist. Always apply on clean bare soil. The mix may be applied by hydro-seeding, by mechanical spreader, or on small sites it can be spread by hand. Lightly rake, or roll to ensure proper seed to soil contact. Best results are obtained with a Spring seeding. Late Spring and early Summer seeding will benefit with a light mulching of weed-free straw to conserve moisture. If conditions are drier than usual, watering may be required. Late Fall and Winter dormant seeding require an increase in the seeding rate. Fertilization is not required unless the soils are particularly infertile. Preparation of a clean weed free soil surface is necessary for optimal results.

NEW ENGLAND WETLAND PLANTS, INC

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New England Conservation/Wildlife Mix

Botanical Name	Common Name	Indicator
Elymus virginicus	Virginia Wild Rye	FACW-
Schizachyrium scoparium	Little Bluestem	FACU
Andropogon gerardii	Big Bluestem	FAC
Festuca rubra	Red Fescue	FACU
Sorghastrum nutans	Indian Grass	UPL
Panicum virgatum	Switch Grass	FAC
Chamaecrista fasciculata	Partridge Pea	FACU
Desmodium canadense	Showy Tick Trefoil	FAC
Asclepias tuberosa	Butterfly Milkweed	NI
Bidens frondosa	Beggar Ticks	FACW
Eupatorium purpureum (Eutrochium maculatum)	Purple Joe Pye Weed	FAC
Rudbeckia hirta	Black Eyed Susan	FACU-
Aster pilosus (Symphyotrichum pilosum)	Heath (or Hairy) Aster	UPL
Solidago juncea	Early Goldenrod	

PRICE PER LB. $39.50 MIN. QUANITY 2 LBS. **TOTAL:** $79.00 APPLY: 25 LBS/ACRE :1750 sq ft/lb

The New England Conservation/Wildlife Mix provides a permanent cover of grasses, wildflowers, and legumes
For both good erosion control and wildlife habitat value. The mix is designed to be a no maintenance seeding, and is appropriate for cut and fill slopes, detention basin side slopes, and disturbed areas adjacent to commercial and residential projects.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is $/bulk pound, FOB warehouse, Plus SH and applicable taxes.

ATTACHMENT 2

LANDSCAPE PLANTINGS

Rosa rugosa 'Belle Poitevine'

Description
'Belle Poitevine' is one of the best hybrid *Rosa rugosa* available. The magenta buds open to ruffled, fragrant pink roses. It is a repeat bloomer, and when the flowering season is done, has colorful rose hips for winter color.

Like all rugosas, it is very hardy (zone 3), and the wrinkled foliage that's typical of rugosas makes it disease resistant. No chemicals should be used on the foliage as it will drop leaves if you spray it with pesticides. It can be pruned to form a border or allowed to grow taller as a specimen or hedge.

ATTACHMENT 3

WZ-4 PLANT ZONATION PRIOR TO EXCAVATION

JULY 2021

View looking south from Parcel 105-170 toward Parcel 105-183. Vegetation zonation low marsh; high marsh grasses and high tide bush; and a transition zone of salt tolerant grasses including switchgrass and bluestem, and the shrubs bayberry, winged sumac and red cedars.

View looking north from Parcel 105-183 at extensive *Phragmites australis* on the slope, wrack/high tide bush zone; and low marsh.

Attachment C

Intertidal
West Zone 5
Final Planting
Plan

WZ-5 PLANTING PLAN

New Bedford Harbor Superfund Site

August 2021

Final

Figures

100-118

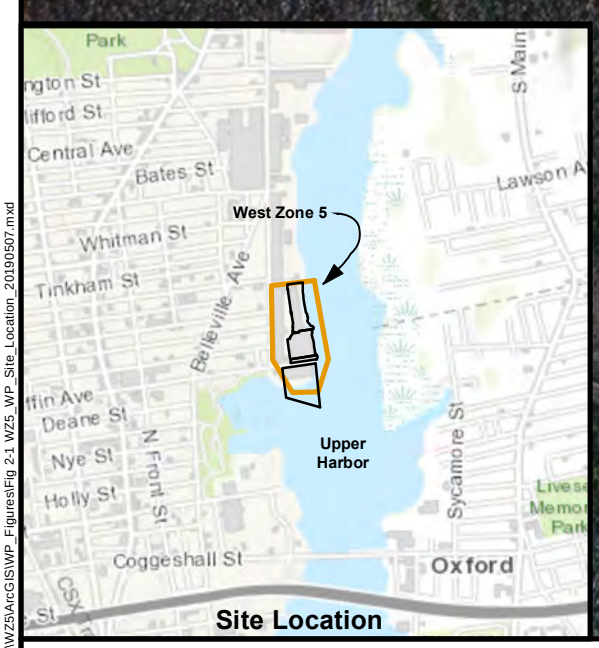
100-117

100-120

100-85

New Bedford Harbor

Pierce Mill Cove



Legend

- Proposed Limits of Excavation
- West Zone 5 Management Area
- Parcel Boundary

Basemap Data Source: MassGIS, ESRI

0 150 300 Feet

JACOBS™

Intertidal West Zone 5
Site Location and Features

New Bedford Harbor Superfund Site

March 2019 **Figure 1**

Path: C:\Users\scottgal\Documents\NBH\35BG.1001\20180901_IntertidalWZ5\ArcGIS\WP_Figures\Fig 2-1 WZ5_WP_Site_Location_20190507.mxd

997 sq ft

221 sq ft

Elevation 0.5 ft

Elevation 1.8 ft

619 sq ft

158 sq ft

CULVERT

HIGH TIDE BUSH

LOW MARSH

0′ 40′ 80′

N W E S

DATE	REVISION	BY
8/11/21	Rev 1	kjt

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DRAWN: kjt | FILE NAME: CRWZ5-7-29-2021-1-Fig2.dwg | Figure 2

Scale:1"=40 ft

New Bedford Harbor Superfund Site
WZ-5 (Parcel 100-118) Mitigation
Figure 2

Landscape Plant Schedule

Symbol	Common Name	Latin Name	Quantity
	Dappled Willow	Salix integra 'Hakuro Nishiki'	6
	Hydrangea	Hydrangea arborescens 'Incrediball'	15
	Knockout Rose	Rosa radrazz 'Blushing Pink'	8
	Daylily	Hemerocallis 'Buttered Popcorn'	7

CULVERT

HIGH TIDE BUSH

LOW MARSH

0′ 15′ 30′

DATE	REVISION	BY
8/3/21	Landscape Planting	kjt
		kjt
		kjt

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DRAWN: kjt | FILE NAME: CRWZ5-7-29-2021-1-=3a.dwg | Figure
Scale:1"=15 ft

New Bedford Harbor Superfund Site
WZ-5 (Parcel 100-118) Mitigation Detail
Figure 2a

DATE	REVISION	BY
6/17/21	Rev 1	kjt
6/17/21	Rev 2	kjt

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DRAWN: kjt	FILE NAME: CRWZ5-6-1702021.dwg	Figure
Scale:1"=30 ft		

New Bedford Harbor Superfund Site
WZ-5 (Parcel 100-85) Mitigation
Figure 3

Tables

TABLE 1
WZ-5 Plants for Restoration
Reference Figures 2 and 2a (Parcel 100-118) 'Victoria Riverside' and Figure 3 (Parcel 100-85) 'Star Plating'
New Bedford Superfund Site WZ-5 Mitigation

EXCAVATED AREAS	Total Area	On Center	Southern Parcel 100-85 Star Plating[1]	Northern Parcel 100-118 Victoria Riverside	Total Number
LOW MARSH	5667 sq ft	triangular spacing	4051 sq ft	1616 sq ft	
Spartina alterniflora (2" plug)	Saltmarsh Cordgrass	1 ft	4678	1805	6483
	Plant plugs with slow release fertilizer. Salt marsh below culvert outlets will receive a stone swale.		Planting range 0.3 ft to toe of riprap slope ~ 1.8 ft NAVD	Planting range 0.5 ft to toe of riprap slope ~ 1.8 ft NAVD	

HIGH TIDE BUSH ZONE (alternate goldenrod and high tide bush)	379 sq ft			in a line top of riprap slope for soil stability	
Solidago sempervirens (2" plug, plant 2 together)	Seaside Goldenrod	3 ft	not applicable	64	118
Iva frutescens (1 gallon)	High Tide Bush	3 ft	not applicable	59	59

Notes:

No backfill was required at parcel 100-120 or 100-117. No plantings were required per direction from EPA/USACE.

Reference: Jacobs 2019, *Draft Final Generic Upper Harbor Intertidal Work Plan Revision 1* , ACE-J23-35BG2000-M1-0109 (May)

TABLE 1
WZ-5 Plants for Restoration
Reference Figures 2 and 2a (Parcel 100-118) 'Victoria Riverside' and Figure 3 (Parcel 100-85) 'Star Plating'
New Bedford Superfund Site WZ-5 Mitigation

UPLAND AREAS

Parcel 100-85' Star Plating' - Seed disturbed upland with New England Erosion Control/Restoration Mix for Dry Sites at the rate of 1 lb/1250 sq ft and mulch (see attached spec sheet). Owner requested no shrub or tree plantings.

Parcel 100-118 'Victoria Riverside' - Grass seeding and shrubs will be done per the direction/discretion of Acorn Management (owners)
Suggetions for plantings:

LANDSCAPED BERM Victoria Riverside	**Total Area**	**On Center**	**Number of Plants**	**Plant Size landscape quality**
	192 X 5.2 ft = 854 sf	within ~5 ft wide berm		
Rosa radrazz 'Blushing Pink'	Knockout Rose	6 ft	8	#10 pot
Hemerocallis 'Buttered Popcorn'	Daylily	between roses	7	#1 Pot
Hydrangea arborescens 'Incrediball'	Smooth Hydrangea	7 ft	15	#7 Pot
Salix integra 'Hakuro Nishiki'	Dappled Willow	7 ft	6	#5 std

*** Add organic material for moisture retention. 3 Inch deep mulch around the base of shrubs but not touching the stem(s). Plants will need to be watered regularly to establish. All grow best in moist well-drained soil.**

Place Daylilies in between the Knockout Roses so 3 ft between a daylily and a knockout rose

Dappled Willows have a high requirement for moisture when they're young. Water them twice a week.
Need periodic annual pruning to keep varigated leaf color.

Smooth Hydrangea prune back in late winter to encourage strong new growth and flowering.

Seed Specifications and Landscape Plant Images

NEW ENGLAND WETLAND PLANTS, INC

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New England Erosion Control/Restoration Mix For Dry Sites

(00324)

Botanical Name	Common Name	Ind.
Festuca rubra	Creeping Red Fescue	FACU
Elymus canadensis	Canada Wild Rye	FACU+
Lolium multiflorum	Annual Ryegrass	
Lolium perenne	Perrenial Ryegrass	
Bouteloua gracilis	Blue Grama	
Schizachyrium scoparium	Little Bluestem	FACU
Sorghastrum nutans	Indian Grass	UPL
Agrostis scabra	Rough Bentgrass/Ticklegrass	FAC
Agrostis perennans	Upland Bentgrass	FACU

Price per lb. $15.00
Req. quantity: 5 lbs.
Total $75.00
Apply: 35 lbs/acre
1 lb/1250 sq ft
Minimum quantity: 5 lbs

The New England Erosion Control/Restoration Mix For Dry Sites provides an appropriate selection of native and naturalized grasses to ensure that dry and recently disturbed sites will be quickly revegetated and the soil surface stabilized. It is an appropriate seed mix for road cuts, pipelines, steeper slopes, and areas requiring quick cover during the ecological restoration process. The mix may be applied by hydro-seeding, by mechanical spreader, or on small sites it can be spread by hand. Lightly rake, or roll to ensure proper soil-seed contact. Best results are obtained with a Spring or late Summer seeding. Late Spring through Mid-Summer seeding will benefit from a light mulching of weed-free straw to conserve moisture. If conditions are drier than usual, watering will be required. Fertilization is not required unless the soils are particularly infertile. Preparation of a clean weed free seed bed is necessary for optimal results.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged.

Price is $/bulk pound, FOB warehouse, plus S&H and applicable taxes.

Hemerocallis 'Buttered Popcorn (7)

Blushing Pink Knockout Rose (8) ~3 ft spacing

Hydrangea arborescens Incrediball® (Smooth Hydrangea) (15) ~5 ft on center spacing

Smooth Hydrangea, Hydrangea arborescens 'Abetwo' PP20571

Salix integra 'Hakuro Nishiki' (6) Dappled Willow - full sun, moisture, spacing ~6 ft