May 2022
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern

Final 2021 Sediment Sampling Technical Memorandum

Prepared for Wisconsin Department of Natural Resources and U.S. Environmental Protection Agency Great Lakes National Program Office
EPA GLRI Grant No. GL-00E02392

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Prepared for
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Project Number: 201779-02.01
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ABBREVIATIONS

AOC	Area of Concern
ASTM	ASTM International
BRRTS	Bureau for Remediation and Redevelopment Tracking System
BS	bank sediment
COC	contaminant of concern
concrete channel	engineered rhombical concrete channel
CSO	combined sewer overflow
DNR	Wisconsin Department of Natural Resources
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
ERP	Environmental Repair Program
ETA	Eurofins TestAmerica
FNC	Federal Navigation Channel
FSP	*Final Field Sampling Plan, Revision 1*
GLRI	Great Lakes Restoration Initiative
IGLD85	International Great Lakes Datum of 1985
KK River	Kinnickinnic River
LiDAR	Light Detection and Ranging
LWD	low water datum
MDL	method detection limit
mg/kg	milligrams per kilogram
MKE AOC	Milwaukee Estuary Area of Concern
MMSD	Milwaukee Metropolitan Sewerage District
MS	manhole or diversion structure sediment
NA	not available
ND	not detected
NELAP	National Environmental Laboratory Accreditation Program
OHWM	ordinary high water mark
OSI	Ocean Surveys, Inc.
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PEC	probable effects concentration
PFAS	per- and polyfluoroalkyl substances
PID	photoionization detector
PPE	personal protective equipment
ppmv	parts per million by volume

QAPP	*Final Quality Assurance Project Plan, Revision 1*
riprap channel	engineered riprap channel
RTK-GPS	real-time kinematic global positioning system
SIR for KK River and Milwaukee Bay	*100% Final Site Investigation Report* for KK River and Milwaukee Bay
SIR for SMC	*100% Final Site Investigation Report* for SMC
SC	sediment core
SM	Standard Method
SMC	South Menomonee Canal
SS	sediment sample
SVOC	semivolatile organic compound
TCLP	toxicity characteristic leaching procedure
Tech Memo	*Draft 2021 Sediment Sampling Technical Memorandum*
TIN	triangulated irregular network
TOC	total organic carbon
U or ND	non-detect
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compound

1 Introduction

This *Final 2021 Sediment Sampling Technical Memorandum* (Tech Memo) describes the results of the field activities performed in summer 2021 to supplement the characterization of sediments within portions of the South Menomonee Canal (SMC), Kinnickinnic River (KK River), and Milwaukee Bay in the Milwaukee Estuary Area of Concern (MKE AOC). The work was performed in accordance with the approved *Final Field Sampling Plan, Revision 1* (FSP; Anchor QEA 2021a) and *Final Quality Assurance Project Plan, Revision 1* (QAPP; Appendix B of the FSP). Additional detail pertaining to the larger SMC Project can be found in the *100% Final Site Investigation Report* for SMC (SIR for SMC; Anchor QEA 2021b). Similarly, additional detail pertaining to the KK River and Milwaukee Bay Project can be found in the *100% Final Site Investigation Report* for KK River and Milwaukee Bay (SIR for KK River and Milwaukee Bay; Anchor QEA 2021c).

This Tech Memo has been prepared for the Wisconsin Department of Natural Resources (DNR) under the U.S. Environmental Protection Agency (EPA) Great Lakes Restoration Initiative (GLRI) grant (EPA GLRI Grant No. GL-00E02392).

1.1 General Site Information

Site Name:	South Menomonee Canal, Kinnickinnic River, and Milwaukee Bay of the Milwaukee Estuary Area of Concern Milwaukee, Wisconsin (Figure 1-1)
BRRTS Site No.:	South Menomonee Canal: 02-41-585377 Kinnickinnic River: 02-41-585627
DNR Facility ID No.:	South Menomonee Canal: 341321970, Kinnickinnic River: 341324060
Site Location:	Kinnickinnic River – Extends from the confluence of the Kinnickinnic River and Milwaukee River to the channel discharge at South 60th Street and West Kinnickinnic River Parkway, and encompasses the quadrangles described as follows: • Part of the SW ¼ of the NW ¼, the SE ¼ of the NW ¼, the SW ¼ of the NE ¼, and the SE ¼ of the NE ¼ of Section 11, Township 6 North, Range 21 East • Part of the SE ¼ of the SE ¼, the SW ¼ of the SE ¼, the NE ¼ of the SW ¼, the SE ¼ of the SW ¼, the SW ¼ of the SW ¼, the NW ¼ of the SW ¼, the NE ¼ of the NW ¼, the SE ¼ of the NW ¼, the SW ¼ of the NW ¼, and the NW ¼ of the NW ¼ of Section 12, Township 6 North, Range 21 East • Part of the SW ¼ of the NE ¼, the NW ¼ of the SE ¼, the NE ¼ of the SW ¼, and the SW ¼ of the SW ¼ of Section 7, Township 6 North, Range 22 East • Part of the SW ¼ of the NE ¼ of Section 8, Township 6 North, Range 22 East • Part of the SE ¼ of the NE ¼ and the NE ¼ of the NE ¼ of Section 8, Township 7 North, Range 22 East • Part of the SE ¼ of the SE ¼, the NE ¼ of the SE ¼, the NW ¼ of the SE ¼, and the SW ¼ of the SE ¼ of Section 5, Township 7 North, Range 22 East

	• Part of the NW ¼ of the SW ¼, the SW ¼ of the NW ¼, the SE ¼ of the NW ¼, the NW ¼ of the NW ¼, the NE ¼ of the NW ¼, the NE ¼ of the SW ¼, the NW ¼ of the SE ¼, and the SW ¼ of the NE ¼ of Section 4, Township 7 North, Range 22 East • Part of the SW ¼ of the SW ¼, the SE ¼ of the SW ¼, the NW ¼ of the SW ¼, the NE ¼ of the SW ¼, the SW ¼ of the NW ¼, the SE ¼ of the NW ¼, and the SW ¼ of the NE ¼ of Section 33, Township 6 North, Range 22 East Milwaukee Bay – Includes the outer harbor and nearshore areas of Lake Michigan bounded by a line extending north from Sheridan Park to the City of Milwaukee's Linnwood water intake, and encompasses the quadrangles described as follows: • All of Sections 2, 3, 11, and 13, Township 6 North, Range 22 East • Part of the NE ¼ of the NE ¼, the SE ¼ of the NE ¼, the SW ¼ of the NE ¼, the NW ¼ of the NE ¼, the NE ¼ of the SE ¼, the SE ¼ of the SE ¼, the SW ¼ of the SE ¼, the NW ¼ of the SE ¼, the NE ¼ of the NW ¼, the SE ¼ of the NW ¼, the SW ¼ of the NW ¼, and the NE ¼ of the SW ¼ of Section 10, Township 6 North, Range 22 East • Part of the NE ¼ of the NE ¼, the SE ¼ of the NE ¼, the SW ¼ of the NE ¼, the NW ¼ of the NE ¼, the NE ¼ of the SE ¼, the SE ¼ of the SE ¼, the NW ¼ of the SE ¼, the NE ¼ of the NW ¼, and the SE ¼ of the NW ¼ of Section 14, Township 6 North, Range 22 East • All of Sections 14, 15, 22, 23, 26, 27, 34, and 35, Township 7 North, Range 22 East • Part of the NE ¼ of the NE ¼, the SE ¼ of the NE ¼, the SW ¼ of the NE ¼, the NW ¼ of the NE ¼, the NE ¼ of the SE ¼, the SE ¼ of the SE ¼, the SW ¼ of the SE ¼, and the NW ¼ of the SE ¼ of Section 28, Township 7 North, Range 22 East • Part of the NE ¼ of the NE ¼, the SE ¼ of the NE ¼, the SW ¼ of the NE ¼, the NW ¼ of the NE ¼, the NE ¼ of the SE ¼, the SE ¼ of the SE ¼, the SW ¼ of the SE ¼, the NW ¼ of the SE ¼, the NE ¼ of the NW ¼, the SE ¼ of the NW ¼, the SW ¼ of the NW ¼, the NE ¼ of the SW ¼, the SE ¼ of the SW ¼, the SW ¼ of the SW ¼, and the NW ¼ of the SW ¼ of Section 33, Township 7 North, Range 22 East South Menomonee Canal – Extends from the confluence of the South Menomonee Canal and Menomonee River west to the end of the South Menomonee Canal near 13th Street, part of the SW ¼ of the SE ¼ of Section 29, the NW ¼ of the NE ¼, the NE ¼ of the NW ¼, the NW ¼ of the NW ¼ of Section 32, and the NE ¼ of the NE ¼ of Section 31, Township 7 North, Range 22
Site Administrator:	Wisconsin Department of Natural Resources 1027 West St. Paul Avenue Milwaukee, Wisconsin 53233 Contact: Christopher Dietrich, P.G. Telephone: (262) 289-0006 Email: christopher.dietrich@wisconsin.gov
Consultant:	Anchor QEA, LLC 290 Elwood David Road, Suite 340 Liverpool, New York 13088-2104 Project Manager: Kim Powell Telephone: (315) 414-2014 Email: kpowell@anchorqea.com

	Engineer-of-Record: Paul Doody Telephone: (315) 414-2044 Email: pdoody@anchorqea.com	
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1.2 Project Objectives

The primary objective of this work was to provide supplemental information necessary to define the nature, degree, and extent of sediment contamination within the SMC, KK River, and Milwaukee Bay Investigation Areas (DNR 2020, 2021). The 2021 sediment sampling program was focused on: 1) extending the Investigation Area upstream of the Chase Avenue Bridge in the KK River to the channel discharge at South 60th Street and West Kinnickinnic River Parkway; 2) in-filling sampling gaps from previous investigations; and 3) providing further delineation of chemistry where recent 2020 sampling results indicated concentrations of polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) at more than five times greater than the screening level. Collected data, as described herein, were also evaluated to identify areas that may require further investigation or remedial action, as part of the ongoing delisting efforts for the MKE AOC. To achieve the overall project objective, the FSP further defined the scope of the investigation and included the updated data quality objectives (DQOs) summarized in Table 1-1. Specifically, the 2021 sediment sampling program addressed DQOs 4, 5, 6, and 7.

Table 1-1
Summary of DQOs for MKE AOC

DQO Number	DQO Description
DQO 1	Assess site conditions with aerial overhead video footage. [Previously completed in 2020]
DQO 2	Measure sediment bed elevations to generate a 3D surface. [Previously completed in 2020]
DQO 3	Determine the locations of shoreline features using side-scan sonar survey methods and mobile LiDAR survey. [Previously completed in 2020]
DQO 4	Determine the horizontal extent of contaminated sediment (primarily metals, PAHs, and PCBs) in the KK River, Milwaukee Bay, and SMC.
DQO 5	Determine the vertical extent of contaminated sediment (primarily metals, PAHs, and PCBs) in the KK River, Milwaukee Bay, and SMC.
DQO 6	Define the geotechnical engineering properties of sediment to support remedial action evaluations (e.g., sediment stability, capping, dredging, material handling, dewatering, and disposal tonnage estimates).
DQO 7	Understand sediment strength through geotechnical field testing.
DQO 8	Evaluate phosphorus loading via diffusion from surface sediment to the water column. [Previously competed in 2020]

2 Background Information

This section provides background information of the site, including a site description and a brief review of historical dredging. Detailed site histories are provided in the SIR for SMC (Anchor QEA 2021b) and the SIR for KK River and Milwaukee Bay (Anchor QEA 2021c).

2.1 Site Description

The MKE AOC is one of five Great Lakes Areas of Concern (AOCs) in Wisconsin. In August 2020, Wisconsin delisted its first AOC, the Lower Menominee River AOC, leaving four AOCs remaining in Wisconsin. The MKE AOC comprises portions of three rivers—Milwaukee, Menomonee, and KK—and the inner harbor, outer harbor, and nearshore areas of Lake Michigan, bounded by a line extending north from Sheridan Park to the City of Milwaukee's Linnwood water intake (Figure 1-1). The MKE AOC was initially listed in 1987 under the Great Lakes Water Quality Agreement. This AOC was later expanded in 2008 to include legacy contaminated sediments in the Little Menomonee River located in the upper portion of the Menomonee River, along with Lincoln Creek and Cedar Creek tributaries located in the upper portion of the Milwaukee River watershed.

Though the MKE AOC contains multiple rivers and reaches, the primary work described herein includes the following Investigation Areas:

- 2021 KK River Investigation Area
  - Upstream Reach: Channel discharge at South 60th Street and West Kinnickinnic River Parkway to South Chase Avenue Bridge
  - Reach 1: South Chase Avenue Bridge downstream to the bridge at West Becher Street
  - Reach 2: West Becher Street Bridge downstream to the South Kinnickinnic Avenue Bridge
  - Reach 3: South Kinnickinnic Avenue Bridge to the upstream mouth of the Turning Basin
  - Reach 4: Turning Basin downstream to the confluence of the Milwaukee River
- 2021 Milwaukee Bay Investigation Area
  - Outer harbor and nearshore waters
  - Summerfest Lagoon
- 2021 SMC Investigation Area
  - SMC: Headwaters of the canal to the confluence with the Menomonee River
  - Burnham Canal: Portion of the Burnham Canal downstream of the currently inoperative Canadian Pacific Railway swing bridge to the SMC

The following sections further describe the Investigation Areas.

2.1.1 2021 KK River Investigation Area

The KK River spans approximately 9.6 river miles, from its headwater to the confluence with the Milwaukee River. The MKE AOC upstream boundary of the KK River is at the South Chase Avenue Bridge, 2.5 miles upstream of the confluence with the Milwaukee River. Downstream of the South Kinnickinnic Avenue Bridge on the KK River includes the start of the Federal Navigation Channel (FNC). The FNC is authorized to 21 feet below low water datum (LWD), or International Great Lakes Datum of 1985 (IGLD85) elevation of 556.5 feet. LWD has an elevation of 577.5 feet IGLD85 (DNR 2020).

The KK River has been broken into five reaches, including four reaches within the MKE AOC and a new reach upstream of Reach 1 (KK River Upstream Reach), as detailed in the following.

2.1.1.1 KK River Upstream Reach

The KK River at its source is completely conveyed through an underground concrete channel to a discharge location east of South 60th Street near its intersection with the West Kinnickinnic River Parkway. This discharge location is the beginning of the KK River Upstream Reach, which is characterized by shallow, wadable water depths with a mixture of concrete lining and natural channel.

The KK River Upstream Reach begins at the discharge location and ends at South Chase Avenue. At the start of the KK River Upstream Reach, the KK River meets with the Lyons Park Creek (Figure 2-1). The river flows through the West Kinnickinnic River Parkway as a natural channel until Jackson Park, where it is channelized in an engineered rhombical concrete channel (concrete channel; Figure 2-2). The concrete channel continues downstream in various states of disrepair until West Cleveland Avenue at Pulaski Park (Figures 2-2 through 2-4). At Pulaski Park, the concrete channel was removed, and the channel was restored to an engineered riprap channel that simulated a more natural channel (riprap channel; Figure 2-4). This restoration was completed through a joint effort by the Milwaukee Metropolitan Sewerage District (MMSD) and the U.S. Army Corps of Engineers (USACE). Following the South 16th Street Bridge, the channel reverts back to a concrete channel until South 6th Street Bridge, where the channel was restored to a riprap channel also through a joint effort by MMSD and USACE (Figure 2-4). Downstream of the Interstate 43 overpass, the river channel transitions into a natural channel (Figure 2-5).

The concrete channel is generally free of sediments; however, sedimentation occurs in discrete deposits, such as behind engineered flow control structures (e.g., drop structures and weirs), heaved concrete panels, vegetation, and other obstructions. Property along this upstream section of the KK River is largely owned by Milwaukee County Parks, MMSD, and the City of Milwaukee (Figures 2-1 through 2-5).

2.1.1.2 KK River Reach 1

The KK River Reach 1 is the furthest upstream reach of the KK River within the MKE AOC and has the shallowest depths of the river within the MKE AOC. This reach includes the area of the KK River beginning downstream of the South Chase Avenue Bridge extending to the West Becher Street Bridge (Figure 2-6). Water depths[1] within the KK River Reach 1 range from 0.5 to 7.5 feet below LWD (Anchor QEA 2021c). Reach 1 is not authorized as part of the FNC.

Unlike the other reaches, the sediments in Reach 1 are generally coarser and the shoreline is mostly natural with the exception of riprap abutments and a bulkhead wall near South Chase Avenue (DNR 2020).

2.1.1.3 KK River Reach 2

The KK River Reach 2 is defined as West Becher Street Bridge downstream to the South Kinnickinnic Avenue Bridge (Figure 2-7). The KK River Reach 2 shoreline is a mixture of industrial and commercial use. The shoreline consists mostly of sheetpile bulkhead walls with some docks, piers, and slips. In 2009, an estimated 170,000 cubic yards of sediment was dredged as part of a Great Lakes Legacy Act funded project, followed by the placement of a 1- to 4-foot sand cover over most of the remediated area (CH2M Hill 2011). Reach 2 is not part of the authorized FNC.

Water depths in KK River Reach 2 ranged from 11 to 23 feet, with the average water depth of approximately 15 feet based on the 5-year post-remediation survey conducted by USACE in 2015 (URS/Baird 2016). Shallow areas were limited to locations adjacent to bridge abutments; only one location was less than 3 feet deep (URS/Baird 2016). Today, water depths remain similar to 2015, with a range from 15 to 20 feet below LWD, with shallower areas (approximately 2 feet below LWD) near the West Becher Street Bridge abutments (Anchor QEA 2021c).

2.1.1.4 KK River Reach 3

The KK River Reach 3 is defined as the KK River immediately downstream of the South Kinnickinnic Avenue Bridge to the upstream mouth of the Municipal Mooring Basin (Turning Basin; Figure 2-8). Water depths in KK River Reach 3 range from 1 foot below LWD along the shoreline to 25 feet below LWD within the FNC (Anchor QEA 2021c). This reach is the beginning of the FNC, which commences south of the South Kinnickinnic Avenue Bridge. The authorized elevation is 21 feet below LWD (556.5 feet IGLD85).

The KK River Reach 3 also includes SkipperBud's Slip, the Car Ferry Slip, and the Municipal Slip (Figure 2-8). The KK River Reach 3 shoreline has a mixture of industrial and commercial uses. The shoreline is primarily sheetpile bulkhead wall with portions of natural shoreline at the Car Ferry Slip

[1] Water surface elevations within Lake Michigan were approximately 5 feet above LWD in fall 2020, thus measured water depths during sampling ranged from 5 to 14 feet.

and SkipperBud's Slip. The KK River Reach 3 western shoreline is across from the St. Mary's Concrete terminal, which conducts loading and offloading of open lake barge vessels. These vessels in addition to other large vessel traffic in the area may contribute to sediment transport from propeller wash and bow thrusters.

2.1.1.5 KK River Reach 4

The KK River Reach 4 includes the FNC maintained at 21 feet below LWD (556.5 feet IGLD85). KK River Reach 4 also includes the Turning Basin from the upstream mouth, two slips (Washington Slip and Greenfield Slip) upstream of the confluence with the Milwaukee River, and the KK River/Milwaukee Bay Connection Channel (Figure 2-9). The Turning Basin is a 36-acre, triangular-shaped area with water depths ranging from 25 to 34 feet below LWD (Anchor QEA 2021c). The shoreline consists of steel sheetpile walls, concrete bulkheads, and minimal amounts of natural shoreline. Both small watercraft and large vessel traffic occur in KK River Reach 4.

2.1.2 2021 Milwaukee Bay Investigation Area

The Milwaukee Bay consists of the waters of Lake Michigan lakeside to the mouth of the Milwaukee River and within the boundaries of the MKE AOC. This portion of the site is approximately 11 miles long and consists of the outer harbor (areas inside the breakwater), nearshore waters north of the outer harbor, and five areas within the outer harbor: McKinley Marina (Figure 2-10), Summerfest Lagoon (Figure 2-11), areas adjacent to Port Milwaukee (Figure 2-12), Southshore Mooring Basin, and Lakeside Power Plant. No sediment sampling was performed near the Southshore Mooring Basin and Lakeside Power Plant in 2021 and, therefore, are not further described herein.

Lake Michigan immediately outside of the breakwater is open lake, with water depths ranging from 30 to 50 feet near the harbor. The breakwater consists of sheetpile bulkhead wall, armor stone revetment, and concrete bulkhead. The FNC within this area is maintained to a depth of 28 feet below LWD from the Pierhead Lighthouse to the breakwater and in the south harbor area, which is approximately 1.2 miles to the south and 0.5 mile wide (NOAA 2020). The FNC deepens to a maintained depth of 30 feet below LWD from the entrance to the breakwater (NOAA 2020).

2.1.2.1 Outer Harbor and Nearshore Waters

For the purposes of this work, the nearshore waters comprise the nearshore waters of Lake Michigan north of the McKinley Marina to the Linnwood Water Treatment Plant. The outer harbor begins at the area from the confluence of the KK River and Milwaukee River at the Daniel Hoan Memorial Bridge (Connection Channel) out to the boundaries of the breakwater. This portion of the harbor includes industrial, commercial, and public park space. The shoreline consists of a mix of sheetpile bulkhead wall, concrete bulkhead, armor stone revetment, and sand beach. Water depths in the outer harbor range from approximately 7 to 32 feet below LWD.

2.1.2.2 Summerfest Lagoon

The Summerfest Lagoon is approximately 35 acres in size and is located 0.25 mile north of the mouth of the Milwaukee River (Figure 2-11). It is included within the outer harbor (Figure 2-11). The lagoon consists of two basins—the northern Maritime Basin (approximately 15 acres) and a southern Quiet Water Basin (approximately 20 acres). The two basins are separated by an isthmus with an 80-foot-wide channel and overhead pedestrian bridge, which connects the Summerfest Grounds to Lakeshore State Park. The lagoon is connected to the outer harbor through a 100-foot-wide channel at its north side.

2.1.2.2.1 Maritime Basin

The Maritime Basin is the northern 15-acre basin near the Pier Wisconsin breakwater. Based on a multibeam bathymetric survey performed in fall 2020, water depths in the basin vary from 16 to 18 feet below LWD[2] in the northernmost portion and 12 feet below LWD in the entrance channel and connection channel to the Quiet Water Basin (Anchor QEA 2021c).

The northern shore of the Maritime Basin is occupied by Pier Wisconsin and Discovery World. Pier Wisconsin, originally constructed in the early 1900s as a municipal pier, consists of the Discovery World facility, a municipal pier, and mooring sites. The pier was the former location of the Milwaukee Municipal Passenger and Auto Ferry, discontinued in 1970 and 1973, respectively. The pier remained in use until 1993 when the Port Milwaukee office was moved from the pier to its current location on Jones Island. The pier was redeveloped into the current Discovery World facility, which opened in 2004. The facility includes a building that houses a museum, fish tanks and conference spaces, support buildings, docks, and a breakwater pier. The Discovery World facility currently discharges treated wastewater (5,000 to 25,000 gallons per day when discharging) to the lagoon.

Pier Wisconsin has a closed Bureau for Remediation and Redevelopment Tracking System (BRRTS) site—Pier Wisconsin Schooner Museum (BRRTS No. 02-41-094270). Sediment was not sampled during investigations of this site, which is currently a closed Environmental Repair Program (ERP) site with no continuing obligations. Contaminants of concern (COCs) at the ERP site are PAHs and volatile organic compounds (VOCs).

2.1.2.2.2 Quiet Water Basin

The Quiet Water Basin is the southern portion of the Summerfest Lagoon and further separated into a smaller north basin and a larger south basin. The western and southern shores of the lagoon are occupied by the Henry Maier Festival Park (Summerfest Grounds). The eastern and northeastern shores are occupied by the Lakeshore State Park. The northern shore of the Maritime Basin is occupied by Pier Wisconsin and Discovery World. The original shore of Lake Michigan existed

[2] Water levels in the Milwaukee Harbor were approximately 581 feet IGLD85 during sampling, resulting in approximately 21 feet of water depth in fall 2020.

approximately 1,000 feet west of the current Summerfest Grounds shoreline. The Summerfest Grounds, portions of the lagoon, and Lakeshore State Park are constructed entirely of various fill and dredged materials over the original lake bed. The shoreline consists of armor stone revetment, steel sheetpile walls, and rocky beach. The water depths of the Quiet Water Basin are approximately 10 feet below LWD in the north basin and are up to 18 feet below LWD at the southernmost end of the south basin (Anchor QEA 2021c).

There are two open BRRTS sites associated with the Summerfest Grounds—Milwaukee World Festival (BRRTS No. 0241001212), an ERP site; and Milwaukee World Festival Inc. (BRRTS No. 0341557220), a leaking underground storage tank site. The COCs at these sites include PAHs, semivolatile organic compounds (SVOCs), VOCs, metals, and cyanide. Pier Wisconsin has one associated closed BRRTS site—Pier Wisconsin Schooner Museum (BRRTS No. 02-41-525163), an ERP site. COCs at the ERP sites are PAHs and VOCs.

Design activities for fish habitat restoration within Quiet Water Basin were completed by Ramboll in April 2020 and permitting requirements are being established (Ramboll 2020). The design consists of a spawning bed, a gravel bed, log structures on the north side, and inverted root wads on the southern side of the basin. Sediment samples collected and reported in this Tech Memo, within Summerfest Lagoon, will be used for the implementation of the habitat restoration project.

2.1.3 2021 South Menomonee Canal Investigation Area

The SMC Investigation Area encompasses approximately 17.6 acres of surface area and 0.9 river mile, from the headwater of the canal to the junction with the Menomonee River (Figures 2-13 through 2-15). This area is part of the inner harbor and includes the FNC. The FNC within the SMC is authorized to 21 feet below the LWD of 577.5 feet (IGLD85). According to DNR's *Professional Services Scope of Work for Characterization of Sediments in the South Menomonee Canal and Milwaukee AOC PFAS Sampling* released on September 13, 2019 (DNR 2019), the future of the FNC within the SMC is uncertain—it may remain as is, be deauthorized, or be reauthorized to a depth for current marine vessel use, such as 16 feet below the LWD (577.5 feet IGLD85) (DNR 2019).

The SMC Investigation Area also includes a portion of Burnham Canal that extends downstream from the SMC toward the currently inoperative Canadian Pacific Railway swing bridge (Figure 2-14). Burnham Canal is located south of the SMC, converging with the SMC downstream of the Interstate 43/Interstate 94 overpass. The Burnham Canal was developed for growing industries within the Menomonee River Valley. It was originally part of the FNC; however, the western portion of the canal was declared non-navigable (for federal purposes) in the mid-1980s to allow for construction of a street-level fixed bridge at 11th Street that would block ship traffic from moving upstream (NRT 2011). The canal east of 11th Street was last dredged in 1987. Under the Water Resources Development Act of 2014, Section 3006, the remainder of Burnham Canal was deauthorized.

Navigation is now limited to small watercraft due the low clearances beneath the 11th Street Bridge and the Canadian Pacific Railroad Bridge at the east end of the canal.

2.1.4 Review of Historical Dredging

Throughout the 19th and 20th centuries, the SMC, KK River, and Milwaukee Bay were altered through human activities including navigational dredging, development of infrastructure, shoreline bulkheading, and discharges of stormwater and combined sewer overflows (CSOs) in the river and harbor. These changes resulted in alteration of the depositional sediment patterns and the introduction of point and nonpoint discharges and spills into the waterway.

Based on USACE's contract dredging report for Milwaukee Harbor, Wisconsin, dredging has been actively occurring within the harbor and rivers since 1957, although the precise location within the area is unknown (USACE 2018). Documented dredging activities within Milwaukee Harbor for the last 30 years are summarized in Table 2-1.

Table 2-1
Summary of Documented USACE Dredging Activities since 1990[a]

Year	Start Date	Completion Date	Cubic Yards	Dredge Area
1986	5/21/1987	9/11/1987	307,656	17+50 to 596+50 Menomonee River and 690+50 Burnham Canal
1990	4/16/1990	4/24/1990	10,757	KK River 247+00 to 268+60
1990	9/22/1990	11/6/1990	123,630	Entrance Channel 0+00 to 46+50 and River 102+00 to 112+00 1-foot Advance Maintenance
1993	8/13/1993	9/16/1993	108,067	218+00 KK River to 124+00 Milwaukee River 342+00 Menomonee River to 567+00 Menomonee Canal 395+00 to 429+00 Menomonee River
1995	10/26/1995	11/9/1995	18,934	KK River CS255+00 to 268+45 22-foot +1-foot O.D.
1999	11/10/1999	6/15/2000	54,259	16+00 to 112+77 in Milwaukee River to Upstream End of KK River (27,000 cubic yards, work for others)
2001	12/3/2001	12/19/2001	1,218	Near Port Authority Docks
2007	7/16/2007	8/13/2007	72,000	Entrance 0+00 to 16+00 Milwaukee River 100+00 to 107+00 KK River 203+00 to 221+00
2008	5/18/2008	7/9/2008	35,440	Critical Shoals KK River 228+00 to 268+00
2011	9/6/2001	12/6/2011	34,141	Critical Shoals within Project Limits KK River 243+00 to 268+00
2015	6/22/2015	8/6/2015	41,810	FNC and Harbor Entrance 0+00 to 18+00 Milwaukee River 100+00 to 105+00 KK River 203+00 to 204+00

Year	Start Date	Completion Date	Cubic Yards	Dredge Area
2019[b]	7/1/2019	9/4/2019	NA	FNC and Harbor Entrance 0+00 to 27+00 Milwaukee River 100+00 to 105+00 KK River 203+00 to 204+00

Notes:
a. Table adapted from USACE *Contract Dredging Report* (USACE 2018).
b. 2019 dredging area was provided by USACE on March 4, 2021; however, no volume was quantified.

Dredging within the KK River and entrance channel has occurred two to three times per decade with dredged material disposed of in the Milwaukee confined disposal facility (Table 2-1). This maintenance schedule is maintained today, with dredging of the FNC required on a 3- to 4-year cycle (USACE 2020).

Conversely, channel dredging within the SMC has occurred twice in the past 30 years (USACE 2018), and these events are summarized in Table 2-1. In 1987 (USACE fiscal year 1986), the entire SMC and a portion of the Burnham Canal from the SMC to the 11th Street Bridge was dredged. The second and most recent dredging activity occurred in 1993. Dredging in 1993 extended within the SMC from the confluence with the Menomonee River to the South 6th Street Bridge (approximately station 567+00, as noted in Table 2-1).

3 Methods of Site Investigation

This section summarizes field sampling activities that were performed in 2021. Tasks were completed in general accordance with the approved FSP and QAPP (Anchor QEA 2021a). Deviations from the approved FSP and QAPP that occurred during field activities are described in Section 3.2.1.

3.1 Sediment Sampling Overview

The 2021 sediment sampling activities were performed from August 5 through 20, 2021. The 2021 sediment samples included surface sediment, bank sediment, manhole or diversion structure sediment, and sediment cores. Sampling locations were proposed following the review of 2020 sampling results and historical information upstream of the KK River Reach 1. Sampling occurred upstream of the KK River Reach 1 and within the KK River Reaches 1 through 4, Milwaukee Bay, and SMC. Sampling locations within the Upstream Reach targeted deposits of sediment within the channel, which is largely concrete in this segment of the KK River, or along the banks below the field-observed ordinary high water mark (OHWM)[3] to understand if sediments that are conveyed in the concrete channel or from other upstream sources are contributing to the contamination observed in KK River Reach 1. Because the goal of the program was to locate sediment upstream of KK River Reach 1, sediment sampling locations often deviated by more than 50 feet from the proposed locations in the FSP (Section 3.2.1).

Sampling locations within the KK River Reaches 1 through 4, Milwaukee Bay, and the SMC were selected to in-fill sampling gaps from previous investigations, target areas of potential runoff or bank erosion, or provide step-out locations where 2020 sampling results indicated concentrations of PCBs and PAHs more than five times greater than the screening level. In particular, SMC locations were selected in consultation with the *South Menomonee Canal Data Gap Evaluation Technical Memorandum* (Jacobs 2021). Additionally, sampling locations were targeted near CSOs and their upstream manholes or diversion structures to understand if runoff throughout the storm sewer system may be transporting contaminated sediments to the river.

In total, 94 locations were targeted for sediment sampling (Anchor QEA 2021a). Sediment was collected at 88 locations (87 planned locations and 1 additional location; Figures 3-1 through 3-12); no sediment was retrieved at the remaining 7 planned locations (KKM-21-002, KKR-21-022, KKR-21-023, KKR-21-027, KKR-21-030, KKR-21-047, and SMC-21-009) with refusal encountered after multiple attempts.

[3] The OHWM has not been determined for the upstream portion of the KK River. As such, a field judgment was employed during sampling to best locate the OHWM.

3.1.1 Chemical and Physical Sediment Collection

Sediment sampling activities consisted of utility clearance, installation of temporary water level gauges, sediment sample collection with one of three methods (including acceptance metrics for sediment cores), recording the horizontal position of sediment sample collection and any field adjustments, and estimation of mudline elevation (see Sections 3.1.1.1 through 3.1.1.4, respectively). Tables 3-1 through 3-3 (attached) summarize KK River, Milwaukee Bay, and SMC sediment location information, including horizontal position, collection date, water depth, mudline elevation estimates, core penetration depth, recovery, and depth and elevation of native material[4] (where encountered). Photographs of sediment sampling activities are presented in Appendix A, and field documentation is provided in Appendix B.

3.1.1.1 Utility Clearance

Prior to mobilization, Wisconsin's "Diggers Hotline" public utility locating service was contacted, and utilities within the Investigation Area were marked. Two sediment core locations were moved in the field based on coordination with utility providers. Specifically, sample location MKE-21-069 was moved approximately 140 feet to the north (Figure 3-10) and SMC-21-010 was moved approximately 100 feet to the south (Figure 3-12) to avoid utilities.

3.1.1.2 Water Surface Elevation Measurements and Temporary Water Level Gauges

Water surface elevation was measured at the following gauging stations within the MKE AOC:

- Temporary water level gauge located near South Chase Avenue in KK River Reach 1 (Figure 3-5)
- U.S. Geological Survey Station 04087170 (Milwaukee River at mouth) located in KK River Reach 4 (Figure 3-8)
- Temporary water level gauge located near the MMSD in the SMC (Figure 3-12)

Two temporary water level gauges were installed prior to performing sediment sampling to measure water surface elevation for use in computing mudline elevations (see Section 3.1.1.5). A temporary water level gauge was installed in Reach 1 of the KK River, located just downstream of South Chase Avenue. This temporary water level gauge position was selected to target a location near proposed sampling locations in Upstream KK River and Reach 1, and thus provide more accurate water surface elevations relative to 2021 sampling efforts. A second temporary gauge was installed at the MMSD dock to provide water surface elevations within the SMC.

The temporary gauges consisted of a piezometer that recorded pressure head every 15 minutes throughout the duration of the field effort. The elevation of the piezometer was surveyed by Anchor QEA using real-time kinematic global positioning system (RTK-GPS) surveying techniques to

[4] Native material has been characterized as a silty clay in the KK River (Arcadis 2016) and a grey clay in the SMC (CH2M 2019).

determine the elevation. Piezometer readings were then translated into water surface elevations. Figure 3-13 depicts hydrographs of the water surface elevations observed throughout the field effort. Between August 5 and 19, 2021, when sediment samples were collected in the KK River, water surface elevations at the temporary water level gauge in Reach 1 ranged from 579.4 feet to 582.6 feet (IGLD85) with an average of 581 feet IGLD85. Between August 10 and 24, 2021, when sediment samples were collected in the SMC, water surface elevations at the temporary gauge ranged from 580.3 feet to 582.0 feet IGLD85 with an average of 581.1 feet IGLD85. On average, observed water surface elevations were approximately 3.5 feet higher than the LWD (577.50 feet IGLD85). Water surface elevations between the temporary water level gauges in Reach 1 and SMC varied by as much as 1 foot, however, water surface elevations were on average within 0.1 foot of each other.

Although the water surface elevations from the temporary gauges were gathered to estimate the mudline elevations at each sediment sampling location using the measured water depth, mudline elevations were predominantly estimated using the results of the 2020 bathymetric survey (Section 3.1.1.5).

3.1.1.3 Sediment Collection Methods

Sediment sampling was performed using three collection methods due to site conditions (e.g., water depth) and sampling locations (e.g., manholes). Sampling methods included: 1) surface sediment and bank sample collection using a Ponar or push core (Photographs 3, 6, 8, 12, and 23 from Sediment Collection Photographs – Kinnickinnic River in Appendix A); 2) sediment grab collection from manholes or diversion structures using various sampling techniques (Photographs 24 and 25 from Sediment Collection Photographs – Kinnickinnic River in Appendix A); and 3) sediment core collection through vibracoring or push coring (Photographs 18 and 30 from Sediment Collection Photographs – Kinnickinnic River in Appendix A). Each sampling method is described in the following subsections.

3.1.1.3.1 Surface Sediment and Bank Sediment Collection

Surface sediment and bank sediment were collected from 21 locations in the KK River Upstream Reach by wading. Samples were collected using a Ponar at five locations and push core at three bank locations (below the visually discerned OHWM) where erosion was evident. A hand shovel or stainless-steel spoon was used, following DNR approval, to collect sediment from 13 locations due to shallow sediment thickness (e.g., less than 4 inches). Table 3-1 (attached) provides the sampling method used to collect sediment at each location.

Bank sediment sampling was also performed via push core from a shallow-draft vessel in the KK River Reach 1 at 11 locations (Table 3-1, attached). Due to heavy vegetation along the banks, four locations (KKR-21-032, KKR-21-033, KKR-21-036, and KKR-21-040) were relocated to river's edge as

close to the bank as was viable by vessel (see Photographs 19 through 22 in Sediment Collection Photographs – Kinnickinnic River in Appendix A).

Surface sediment was collected via a Ponar from a shallow-draft vessel in the KK River Reach 1 at two locations near CSO discharges (KKR-21-029 and KKR-21-031). Grab samples were attempted at three additional locations near CSO discharges (KKR-21-022, KKR-21-023, and KKR-030); however, no sediment was recovered after three attempts (Figures 3-5 and 3-6).

Surface sediment was also collected via push core by wading within a portion of the KK River within SkipperBud's Slip. Although all sampling within SkipperBud's Slip was planned to be conducted with a vibracore on a shallow-draft vessel, a downed tree impeded transportation to the easternmost end of the slip (see Photograph 27 in Sediment Collection Photographs – Kinnickinnic River in Appendix A). As such, a sediment core was collected via vibracore as close to the downed tree as possible (sampling location KKR-21-055). Subsequently, the easternmost locations (sampling locations KKR-21-055A and KKR-21-054) were accessed by land and collected with a push core via wading.

3.1.1.3.2 Sediment Grab Sample Collection from Manholes or Diversion Structures

Sediment grab sampling was also attempted at five manholes or diversion structures upstream of the CSOs noted within KK River Reach 1. Grab samples were collected by MMSD personnel using a trowel upon entering the manhole at KKM-21-001; Ponar from the manhole surface (i.e., no entry) at sampling locations KKM-21-003 and KKM-21-004; and constructed grab sampler (i.e., 1-liter container affixed to a survey rod) at KKM-21-005. Sampling was attempted at KKM-21-001; however, no retrievable sediment was present within the structure.

3.1.1.3.3 Sediment Core Collection

Sediment cores were collected in shallow water by Anchor QEA and in deep water by Anchor QEA's drilling subcontractor, Ocean Surveys, Inc. (OSI), of Old Saybrook, Connecticut, using either vibracore sampling equipment or push core techniques. Sediment cores were collected in deep water (generally greater than 20 feet of water depth) by OSI using a vibracorer on their *CanDu*, a 37- by 16-foot, shallow-draft pontoon barge with a mechanized 20-foot derrick. Sediment cores were collected at 26 sampling locations within Milwaukee Bay, SMC, and KK River Reach 4 by vibracore on the *CanDu* (Tables 3-1 through 3-3, attached). Sediment coring was also attempted at sampling location SMC-21-009; however, due to refusal with no sediment recovery after four attempts, the location was abandoned.

Sampling in shallow water (e.g., less than 20 feet) or difficult to access areas was performed by vibracoring using Anchor QEA's 24-foot pontoon boat at 20 locations (Tables 3-1 through 3-3, attached). Sediment was not retrieved after three attempts at two locations, KKR-21-027 and KKR-21-047, thus these locations were abandoned. Push core sampling was also performed at two

locations, SMC-21-010 and SMC-21-011, from Anchor QEA's 19-foot, shallow-draft, flat-bottom vessel. This vessel was able to pass under the inoperative Canadian Pacific Railway swing bridge.

Cores were advanced until refusal was met, targeting 70% recovery and confirmation of native material (e.g., grey silty clay in KK River and grey clay in SMC) in the bottom portion of the core. Up to three attempts were made to achieve the specified recovery and confirmation of native material. After three attempts, the core with the highest percentage of recovery was retained for sampling and analysis. Within the KK River, no cores had visibly distinguishable native grey silty clay when processing; however, most had clay or gravel in the core catcher during core collection. Based on core processing, cores collected from 16 locations had silt at the bottom of the core as the predominant material encountered, and the remaining eight cores were sand. Table 3-4 categorizes each sampling location by the predominant material encountered at refusal and notes the number of locations with the material type per reach in the KK River.

Table 3-4
Material Encountered at Refusal in KK River

Sampling Reach	Predominant Material Encountered at Refusal			
	Native Material Encountered	Silt	Sand	Gravel
Reach 1	0 cores	7 cores	4 cores	0 cores
	NA	KKR-21-035 KKR-21-037 KKR-21-038 KKR-21-039 KKR-21-043 KKR-21-049 KKR-21-050	KKR-21-026 KKR-21-041 KKR-21-046 KKR-21-048	NA
Reach 2	0 cores	3 cores	0 cores	0 cores
	NA	KKR-21-051 KKR-21-052 KKR-21-053	NA	NA
Reach 3	0 cores	3 cores	2 cores	0 cores
	NA	KKR-21-054 KKR-21-056 KKR-21-057	KKR-21-055 KKR-21-055A	NA

Sampling Reach	Predominant Material Encountered at Refusal			
	Native Material Encountered	Silt	Sand	Gravel
Reach 4	0 cores	3 cores	2 cores	0 cores
	NA	KKR-21-058 KKR-21-059 KKR-21-061	KKR-21-060 KKR-21-062	NA

Notes:
Each location is categorized by the predominant material type encountered at refusal as noted in the core log. Sediment core logs are provided in Appendix C.
When more than one core was collected at a location for geotechnical analyses, only one core was included per location.

Conversely, native material was encountered at more than half of the locations in Milwaukee Bay. Specifically, 9 of the 16 locations had visibly distinguishable native grey silty clay. Refusal was met with silt (4 locations) and sand (3 locations) at the remaining locations. Table 3-5 provides material encountered at refusal in Milwaukee Bay.

Table 3-5
Material Encountered at Refusal in Milwaukee Bay

Sampling Area	Predominant Material Encountered at Refusal			
	Native Material Encountered	Silt	Sand	Gravel
Nearshore and McKinley Marina	2 cores	1 core	0 cores	0 cores
	MKE-21-063 MKE-21-065	MKE-21-064	NA	NA
North and Summerfest Lagoon	7 cores	1 core	2 cores	0 cores
	MKE-21-066 MKE-21-067 MKE-21-068 MKE-21-069 MKE-21-070 MKE-21-07 MKE-21-072	MKE-21-073	MKE-21-074 MKE-21-075	NA
South Adjacent to the Port of Milwaukee	0 cores	2 cores	1 core	0 cores
	NA	MKE-21-076B MKE-21-077	MKE-21-078	NA

Notes:
Each location is categorized by the predominant material type encountered at refusal as noted in the core log. Sediment core logs are provided in Appendix C.
When more than one core was collected at a location for geotechnical analyses, only one core was included per location.

Native material was encountered at two locations (SMC-21-005 and SMC-21-008) within the SMC. Refusal was met with silt at 7 of the 10 locations and with sand at the remaining 2 locations. Table 3-6 provides material encountered at refusal in the SMC.

Table 3-6
Material Encountered at Refusal in South Menomonee Canal

Sampling Area	Predominant Material Encountered at Refusal			
	Native Material Encountered	Silt	Sand	Gravel
East	0 cores	3 cores	1 core	0 cores
	NA	SMC-21-001 SMC-21-003 SMC-21-004	SMC-21-002	NA
Middle	1 core	3 cores	1 core	0 cores
	SMC-21-005	SMC-21-007 SMC-21-010 SMC-21-011	SMC-21-006	NA
West	1 core	0 cores	0 cores	0 cores
	SMC-21-008	NA	NA	NA

Notes:
Each location is categorized by the predominant material type encountered at refusal as noted in the core log. Sediment core logs are provided in Appendix C.
When more than one core was collected at a location for geotechnical analyses, only one core was included per location.

3.1.1.4 Horizontal Position

The horizontal position of each sampled location was recorded using a GPS with submeter accuracy. The actual sampled locations are depicted in Figures 3-1 through 3-12. On occasion, sampling locations were offset from the targeted location, either due to field conditions (e.g., vegetation) or identification of sediment deposit in the Upstream KK River Reach.

3.1.1.5 Water Depth and Mudline Elevation

Water depth was determined at each location by manually measuring the distance from the water surface to the sediment surface (mudline), using a weighted tape measure or by using the vessel's fathometer. Measurements were recorded to the nearest tenth of a foot. The date and time of the water depth measurements were recorded in the field and are presented in Tables 3-1 through 3-3 (attached).

The mudline elevation at each location was then estimated based on the 2020 bathymetry data, a hand-held GPS, or the water surface recorded at the closest gauging station. The multibeam

bathymetry data were post-processed, and a triangulated irregular network (TIN) was developed to generate elevation contours. Mudline elevations were then estimated by obtaining the elevation from the TIN using the location's coordinates. Mudline elevations for sample locations outside of the survey limits were instead estimated using either a hand-held GPS device or the water surface elevation at the date and time of the water depth measurement (Section 3.1.1.2). In particular, mudline elevations for surface sediment and bank sediment samples collected in the Upstream KK River Reach (KKR-21-001 through KKR-21-016) were measured using a hand-held GPS. The mudline elevations at seven locations in the Upstream KK River Reach, in Reach 1, and within the SMC were outside of the survey limits and could not get an accurate GPS signal, so the water surface elevations were measured using nearby temporary gauging stations installed within Reach 1 of the KK River (KKR-21-017, KKR-21-019, KKR-21-020, KKR-21-021, and KKR-21-031) or at the MMSD facility dock within the SMC (SMC-21-010 and SMC-21-011).

Within the SMC, the orientation of the mudline elevations in comparison to the authorized depth of the FNC is important for determining future remedial actions. As such, the location of the sediment cores collected within the FNC boundaries in the SMC were reviewed. Mudline elevations for the cores collected within the SMC ranged from 554.7 to 567.1 feet IGLD85. Of the eight locations with recovered cores, two locations had the full core collected at an elevation below the authorized depth of the FNC (i.e., 21 feet below the LWD of 577.5 or 556.6 feet IGLD85; Table 3-7). Conversely, cores were collected at one location to an elevation that was above the authorized depth (Table 3-7). Cores were collected to an elevation that was both above and below the authorized depth at the remaining five locations.

Table 3-7
Summary of Mudline Elevations Relative to the Authorized Depth of the FNC

Location ID	Mudline Elevation (feet, IGLD85)[1,2]	Recovered Sediment Core Length (feet)	Length of Core Above Authorized Depth[3,4] (feet)	Position Relative to Authorized Depth[3]
SMC-21-001	556.5	8.3	0	Below
SMC-21-002	557.1	4.9	0.6	Core above and below
SMC-21-003	557.5	9.4	1	Core above and below
SMC-21-004	558.1	8.8	1.6	Core above and below
SMC-21-005	559.4	20	2.9	Core above and below
SMC-21-006	564.7	12.8	8.2	Core above and below
SMC-21-007	567.1	7.8	7.8	Above
SMC-21-008	554.7	13.6	NA	Below

Notes:

1. Vertical datum: International Great Lakes Datum of 1985
2. Mudline elevations are based on 2020 bathymetric survey results
3. The authorized depth of the FNC is 21 feet below the LWD of 577.5 or 556.5 feet IGLD85
4. NA = not applicable because the entire core is below the authorized depth

3.1.2 Chemical and Physical Sediment Sample Processing

Collected sediment samples and cores were transported to a landside sample processing area to facilitate concurrent sample processing during field activities. Sediment cores and samples were processed in a dedicated space at Jerry's Dock located at 318 South Water Street, Milwaukee, Wisconsin 53204. Each sediment core or sample was processed by an experienced sample processing staff member in accordance with procedures outlined in the FSP and QAPP (Anchor QEA 2021a).

Prior to opening each core, cores were photographed and weighed. Bulk density was calculated using the weight of the sediment within the core, recovered sediment volume (based on the inner diameter of the core tube), and total length of recovered sediment. The calculated field bulk density is presented in Tables 3-1 through 3-3 (attached) for each sampled core location in the KK River, Milwaukee Bay, and SMC, respectively. Sediment cores were then split longitudinally, screened with a photoionization detector (PID), logged using the Unified Soil Classification System to describe the observed soil type, color, consistency, odors, and visible evidence of discoloration or sheens, and then photographed. Photographs of core processing are presented in Appendix A. The strength parameters of fine-grained (e.g., silts and clays) sediments were assessed using a hand-held pocket penetrometer for compressive strength and torvane for shear strength, where appropriate. A minimum of one set of strength tests was performed on a representative portion of sediment from a given depth sample interval. The sediment core logs, in Appendix C, present the lithology, sampled depth intervals, PID, torvane, and pocket penetrometer readings.

After the lithologic logging was completed, sediment cores were subsampled. Subsampling for KK River and Milwaukee Bay targeted depth intervals from 0 to 1.0 foot, and 2-foot depth intervals thereafter. Native grey silty clays, when encountered, were segmented separately, and not homogenized with overlying sediments. Also, when native grey silty clay was encountered in more than one sample interval within a sediment core, the samples below native grey silty clay were archived. Two samples were archived from one location (MKE-21-065) within Milwaukee Bay. Because the chemical concentrations of the overlying sediments were below the screening levels (Section 4), the archived samples were disposed of by the laboratory.

Subsampling for SMC targeted depth intervals from 0 to 1.0 foot, 1.0 to 2.5 feet, and 2.5 to 4.0 feet, and 2-foot depth intervals thereafter. Similar to KK River and Milwaukee Bay, native grey clays, when encountered, were segmented separately, and not homogenized with overlying sediments. A total of three samples were archived from one location in SMC (SMC-21-005), and ultimately disposed of because the native clay sample resulted in concentrations below the screening levels.

Sampling consisted of sediment being transferred from each sample interval to a disposal aluminum pan where it was homogenized with a spoon. The homogenized sample was then transferred to the appropriate analyte-specific container provided by the laboratory (i.e., Eurofins TestAmerica [ETA]). Samples were then packaged into coolers with ice for shipment to the respective laboratory for analysis.

Field Scribe, a data collection application created by Anchor QEA, was used for on-site sample management. Sample IDs, water column depth, core penetration, and core recovery for each sample from each core were entered at the time of core processing, and sample labels and chain-of-custody forms were printed on site to efficiently and accurately provide information to the laboratory. Field data collected at the time of core collection were documented on the Sediment Core Collection Log, and the lithology, sample intervals, PID readings, and strength readings were recorded on the Sediment Core Processing Log. Field logs and records are presented in Appendix B.

3.1.3 Decontamination

Decontamination practices were implemented throughout the investigation as detailed in the FSP and QAPP (Anchor QEA 2021a), to minimize the potential for cross-contamination. Sediment sampling equipment that was lowered through the water column was decontaminated using site water prior to use. If needed, residual sample media was removed with a brush and non-phosphate detergent was used followed by a final rinse with site water.

When practicable, disposable equipment was used for sampling, homogenizing, and subsampling procedures (e.g., core liners, plastic spoons, aluminum pans). When sample processing equipment

was reused, decontamination steps consisted of a pre-rinse with tap water; wash with tap water, detergent, and brush; rinse with tap water; and final rinse with distilled water.

Sampling vessels used in field sampling activities were inspected, and if necessary, cleaned to remove oil, grease, mud, or other foreign matter, including vegetation, prior to leaving the site.

3.1.4 Investigation-Derived Waste

Potentially contaminated sediment, water, personal protective equipment (PPE), and other investigation-derived waste materials generated during the field investigation were collected, segregated, and disposed of in accordance with the FSP and QAPP (Anchor QEA 2021a). Excess sediment not used for sample analysis was collected into 55-gallon (closed top) drums. Decontamination liquids generated during core processing were collected into 55-gallon (closed top) drums. Non-sediment waste, such as PPE, disposable sampling equipment, used core liners, caps, aluminum pans, and plastic sheeting were collected and disposed of as municipal solid waste. Grossly contaminated non-sediment waste that could not be effectively decontaminated was placed with the sediment into 55-gallon drums.

In total, three drums of sediment and one drum of liquid waste were generated during the investigation. Two composite samples of sediment and one composite sample of water were submitted for analysis of per- and polyfluoroalkyl substances (PFAS), SVOCs, VOCs, and metals using the toxicity characteristic leaching procedure (TCLP). PFAS and TCLP results are presented in Appendix D, and the waste profiles are provided in Appendix E. Final transportation and disposal of the drums is currently underway with Veolia ES Technical Solutions, LLC.

3.2 Quality Control

3.2.1 Deviations from FSP and QAPP

Deviations from the approved FSP and QAPP (Anchor QEA 2021a) were sometimes necessary as a result of conditions encountered in the field. Specific deviations associated with data collection, sample locations, and sampling methodology are as follows:

- The FSP targeted 94 locations, however, after three attempts at the following seven targeted sample locations, no sediment was recovered, and the location was abandoned:
  - KKM-21-002
  - KKR-21-022
  - KKR-21-023
  - KKR-21-027
  - KKR-21-030
  - KKR-21-047
  - SMC-21-009

- Due to the shallow sediment depth (i.e., less than 3 inches), grab sediment samples were collected at 13 locations in the Upstream Reach (KKR-21-002, KKR-21-010 through KKR-21-021) using a hand shovel or stainless-steel spoon as opposed to the grab sampling method (e.g., Ponar) that was specified in the FSP. The hand shovel or stainless-steel spoon sampling method was approved by DNR at the time of investigation in an effort to sample as many locations as possible with measurable sediment.
- The following 19 locations were adjusted more than 50 feet from the targeted locations:
  - Thirteen locations in the Upstream Reach (KKR-21-001, KKR-21-002, KKR-21-004, KKR-21-010 through KKR-21-015, KKR-21-017 through KKR-21-019, and KKR-21-021) were adjusted by approximately 50 to 3,500 feet to target sediment deposits in accordance with the objectives of the 2021 sampling program.
  - Sample location KKR-21-025 was relocated approximately 50 feet upstream and KKR-21-036 was relocated approximately 60 feet to the west due to thick vegetation along the bank.
  - Sample location KKR-21-055 was moved approximately 75 feet to the west due to a downed tree that blocked vessel traffic to the east. A second sample, KKR-21-055a, was collected near the targeted KKR-21-055 using hand coring sampling methods when accessing SkipperBud's Slip by land.
  - Sample location KKR-21-058 was moved approximately 50 feet to the east due to lack of recovery from woody material at the targeted location.
  - Sample location MKE-21-069 was moved approximately 140 feet to the north and SMC-21-010 was moved approximately 100 feet to the south to avoid utilities.
- Due to heavy vegetation along the banks of Reach 1, four targeted bank locations (KKR-21-032, KKR-21-033, KKR-21-036, and KKR-21-040) were relocated from the riverbank to the river near the impassible vegetation.
- Geotechnical analyses were performed on a minimum of 10% of the sediment locations. Although proposed at select locations in the FSP (Anchor QEA 2021a), geotechnical samples were adjusted from the proposed locations to target cores with an abundance of sediment and distinguishing sediment types. Geotechnical cores were collected from the following locations:
  - KKM-21-001
  - KKR-21-003
  - KKR-21-007
  - KKR-21-012
  - KKR-21-020
  - KKR-21-032
  - KKR-21-039
  - KKR-21-040

  - KKR-21-045
  - KKR-21-051
  - MKE-21-065
  - MKE-21-070
  - MKE-21-076
  - SMC-21-004
  - SMC-21-005
  - SMC-21-008
- At the request of DNR, PCB congener samples were collected at 10 locations, targeting areas within the KK River where PCB Aroclor concentrations from the 2020 sampling program exceeded the screening levels.

The analytical laboratories performing the sample analyses adhered to the methods and quality control procedures outlined in the QAPP (Appendix B of the FSP [Anchor QEA 2021a]). Appendix D provides the laboratory analytical data packages.

3.2.2 Data Completeness

Data deliverables were provided by the laboratories in the required formats. Data completeness was assessed by comparing the chain-of-custody forms and QAPP (Appendix B of the FSP [Anchor QEA 2021a]) to the dataset. The laboratory followed the specified analytical methods, and all requested sample analyses were completed. Following analytical data completeness checks, data were incorporated into this report. Data were specifically reviewed (evaluated and interpreted) to determine if the DQOs identified herein were satisfied. All relevant records, correspondence, reports, logs, data, field logs, photographs, analytical data, and any other documentation were reviewed and evaluated or are in the process of being reviewed and evaluated.

Field quality assurance/quality control samples were collected at the required frequencies, with the exception of rinsate blanks in association with PCB congener analyses. Rinsate blanks were collected and analyzed at the required frequency for PAHs, PCB Aroclors, and metals, as specified in the QAPP (Appendix B of the FSP [Anchor QEA 2021a]). Thirteen rinsate blanks were collected and, in addition to the required analyses, were also analyzed for total organic carbon (TOC), though not specified in the QAPP. No rinsate blanks were collected and analyzed for PCB congeners so were not analyzed at the required frequency for this parameter.

Rinsate blank results were below detection, with the exceptions of some detections in the PAHs, metals, and TOC analyses. Contaminants were detected at levels between the method detection limits (MDLs) and the method reporting limits with the exceptions of TOC, chromium, and naphthalene, which were detected in three separate rinsate blanks at levels slightly above reporting limits. Sample results were below detection or significantly greater than (greater than five times) the

levels detected in the blanks, so sample results are not expected to be impacted and no results were qualified for rinsate blank contamination. Because the results of the rinsate blanks that were collected and analyzed had no impact on sample results, not collecting rinsate blanks for PCB congener analyses is not expected to impact results.

Field duplicate and replicate samples were collected at the required frequency in association with all analyses, as specified in QAPP Table 9 (Appendix B of the FSP [Anchor QEA 2021a]), except for PCB congener analyses. One field duplicate was collected and analyzed in association with this analysis, however, 23 samples were collected and analyzed, and the required frequency of collection is one per 20 samples.

Analytical completeness is a measure of the amount of data determined to be valid in proportion to the amount of data collected. As presented in the Data Usability Assessment (Appendix F), all data are acceptable as reported or as qualified.

4 Testing and Measurement Protocols

4.1 Analytical Methods

This section briefly describes the analytical methods used to generate the physical and chemical data for the sediment samples discussed in this Tech Memo, as well as any deviations by the laboratory from the analytical methods or procedures listed in the QAPP (Appendix B of the FSP [Anchor QEA 2021a]).

4.1.1 Chemical Analyses of Sediment Samples

Samples were analyzed by ETA in Pittsburgh, Pennsylvania, and Knoxville, Tennessee. ETA is DNR and National Environmental Laboratory Accreditation Program (NELAP) accredited as applicable to the analysis. Samples were analyzed for the following:

- Total metals by EPA Methods 6020, 7470A, and 7471B
- PAHs by EPA Method 8270D
- PCB Aroclors by EPA Method 8082A
- PCB congeners by EPA Method 1668C
- TOC by Lloyd Kahn and Standard Method (SM) 5310C
- Oil and grease by EPA Method 9071B
- Total solids by SM 2540G

The laboratory followed the methods listed in the QAPP (Appendix B of the FSP [Anchor QEA 2021a]) and all requested sample analyses were completed. ETA in Knoxville, Tennessee, conducted the PCB congener analyses and all other analyses were conducted by ETA in Pittsburgh, Pennsylvania. Results were reported using the laboratory sample-specific MDLs, and detection limits for results below detection were below project screening levels.

4.1.2 Physical Analyses of Sediment Samples

Sediment physical analyses were conducted by ETA in Burlington, Vermont. Samples were analyzed for the following:

- Grain size by ASTM International (ASTM) D422
- Atterberg limits by ASTM D4318
- Moisture content by ASTM D2216
- Specific gravity by ASTM D854

The laboratory followed the methods specified in the QAPP (Appendix B of the FSP [Anchor QEA 2021a]), and all sample analyses were completed.

4.2 Calculation of Total PAHs and Total PCBs

Total PAHs[5], total PCB Aroclors, and total PCB congeners were calculated using two methods to bound the total values based on non-detect assumptions. Chemicals that were not detected were reported as the detection limit and assigned a U-qualifier. Totals were calculated by summing the reported values, with non-detects treated as zero values (U=0) or non-detect values treated as one-half of the detection limit (U=1/2). If all results were below detection, the highest detection limit was reported with a U-qualifier to indicate the total is below detection. Non-detect values treated as one-half the detection limit tend to produce results that are biased high. The method (U=1/2) is considered more conservative and, therefore, was utilized for the evaluation and discussion of total PAH and total PCB results in this Tech Memo.

4.3 Sediment Quality Guidelines and Screening Criteria

Sediment results were tabulated and evaluated against screening levels identified in the QAPP (Appendix B of the FSP [Anchor QEA 2021a]). These screening levels are based on the *Consensus-Based Sediment Quality Guidelines, Recommendations for Use and Application* (DNR 2003), as well as specific total PCB criteria provided by DNR. Metal and PAH results were screened against the probable effects concentration (PEC), three times the PEC, and five times the PEC. Total PCBs were screened against 1 milligram per kilogram (mg/kg), 5 mg/kg, and 50 mg/kg.

[5] Total PAHs includes: 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(e)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.

5 Investigation Results

This section summarizes the physical and chemical results for the sediment investigation. Sediment sampling locations are depicted in Figures 3-1 through 3-12. Results are summarized in Tables 5-1 through 5-6 (attached) and Figures 5-1 through 5-15. The investigation results herein exclusively evaluate the data from the supplemental investigation documented in this Tech Memo. An overall data assessment, inclusive of all data collected, will be provided in a separate report.

5.1 Physical Analysis of Sediments

5.1.1 Physical Observations

Sediments within the KK River typically consisted of loose silty sands in both the Upstream KK River Reach and portions of Reach 1, transitioning to soft silts and clayey silts in Reaches 2, 3, and 4. The surface sediment consisted predominantly of moist, very soft, grey, clayey silt with trace organics (wood and leaves) and anthropogenics including metals, glass, and plastics. Sediments generally transitioned from soft to stiff with depth, and native material, when encountered, consisted of a grey silty clay. Recovered thickness of sediment cores ranged from 0.9 foot at KKR-21-055 located in Reach 3 (Figure 3-7) to 10 feet at KKR-21-060 and KKR-21-061 located in Reach 4 (Figure 3-8), with an average of 4.8 feet.

Within the Milwaukee Bay, surface sediments comprise fine sands to soft clayey silts in the McKinley Marina and Quiet Water Basin, whereas sediments within the Maritime Basin of the Summerfest Lagoon comprise silty sands overlying clay. North and east of the Summerfest Lagoon, the sediments are generally soft silts with fine sand overlying clay (MKE-21-066, MKE-21-067, MKE-21-068, and MKE-21-069 in Figure 3-10). Sediments adjacent to Port Milwaukee are predominantly dark silts (Figure 3-11). Recovered sediment thickness ranged from 4.3 feet at MKE-21-74 (Figure 3-10) to 15.7 feet at MKE-21-078 (Figure 3-11), with an average of 7.7 feet.

Sediments within the SMC typically consisted of soft depositional sediment. The surface sediment consisted predominantly of moist, very soft, dark grey to black, silt with trace sand organics. Recovered sediment thickness ranged from 1.6 feet at SMC-21-010 to 13.6 feet at SMC-21-008, with an average of 8.9 feet (Table 3-3; Figure 3-12). The native material where present at SMC-21-005 and SMC-21-008 consisted predominantly of moist, firm to stiff, brown, lean clay with moderate organics (shells).

Sheens were observed within the Investigation Areas in 4 of 88 locations, and odors (petroleum or septic) were noted at 17 locations. Because these physical observations were often co-located, Table 5-7 provides a summary of locations with observed sheens, odors, the maximum PID reading per core, and corresponding total PAH concentration associated with the observation. No PID readings were observed at any location, potentially affected by the processing of cores outside and any

potential readings dissipating in the ambient air. Detailed sediment core logs for each location are provided in Appendix C.

Table 5-7
Summary of Physical Observations at the Sediment Locations

Location ID	Sheen	Odor	Maximum PID Reading (ppmv)	Total PAH Concentration (mg/kg)
KK River Upstream Reach				
KKR-21-011		X	0	69
KKR-21-016		X	0	30
KK River Reach 1				
KKR-21-026	X		0	300
KKR-21-029		X	0	64
KKR-21-035		X	0	300
KKR-21-036		X	0	42
KKR-21-037		X	0	220
KKR-21-039	X	X	0	280
KKR-21-049		X	0	200
KKR-21-050		X	0	170
KK River Reach 3				
KKR-21-055A		X	0	NA
KKR-21-056		X	0	410
KKR-21-057	X		0	200
KK River Reach 4				
KKR-21-059		X	0	37
KKR-21-061		X	0	75
KKR-21-062	X	X	0	130
Milwaukee Bay – North and Summerfest Lagoon				
MKE-21-067		X	0	38
MKE-21-069		X	0	64
MKE-21-073		X	0	37
SMC				
SMC-21-004		X	0	120
SMC-21-006		X	0	57

5.1.2 Geotechnical Properties

Of the 88 sediment sampling locations analyzed for chemistry, 16 locations were also analyzed for physical parameters to understand the geotechnical engineering properties of the site sediments. A total of 52 samples were collected and analyzed from 16 locations, targeting sediments in each Investigation Area (Table 5-1, attached). Field duplicate samples were also collected from KKR-21-003-G, KKR-21-045-G, MKE-21-076-G, and SMC-21-005-G. Geotechnical testing consisted of moisture content, Atterberg limits, specific gravity, and grain size analysis by ETA. Table 5-1 (attached) provides a summary of the geotechnical engineering properties. Of the 16 sediment locations sampled, 4 encountered depositional sediment overlying native clay, and 12 did not. The sediments overlying the native grey silty clay at locations MKE-21-065 and MKE-21-070-G were found to consist predominantly of fine-grained sand and silt (50% to 89%), correlating to the classification of silty sand, poorly graded sand, or silt with sand within the sediment core logs and are considered non-plastic. Whereas the sediment overlying the native grey clay at location SMC-21-005 consisted of 66% to 92% fines, correlating to the classification of silt in the sediment core logs in Appendix C. The sediment overlying the native layer at SMC-008 was not analyzed for physical parameters, due to an abundance of shells present.

5.1.3 Total Organic Carbon

A total of 283 samples at all 88 locations (including 19 field duplicates and five field replicates) were submitted for TOC analysis. TOC results are presented, along with the PAH results, in Table 5-4 (attached). Of the 283 samples analyzed, the average TOC was 5.7%. The percentage of TOC ranged from approximately 0.5% to 34%. Table 5-8 provides a summary of TOC averages by reach within KK River, Milwaukee Bay, and SMC.

As shown in Table 5-8, the average TOC in KK River (7%) is a factor of 2 greater than the TOC of Milwaukee Bay (4%). The average TOC in SMC is 5.3%, generally aligned with TOC concentrations within Milwaukee Bay. The highest average TOC throughout the Investigation Areas was within Reach 3 and attributable to high TOC in SkipperBud's Slip at locations KKR-21-054, KKR-21-056, and KKR-21-057.

Table 5-8
Summary of TOC at the Sediment Locations

Reach/Area	Number of Locations	Number of Samples	Average TOC (percent)
KK River			
Upstream Reach	21	25	3.9
Reach 1	24	60	5.8
Reach 2	3	11	8.2
Manholes and Diversion Structures	4	4	7.5
Reach 3	5	9	16.6
Reach 4	5	24	9.1
Entire KK River	**62**	**133**	**7.0**
Milwaukee Bay			
Nearshore and McKinley Marina	3	15	3.6
North and Summerfest Lagoon	10	50	4.1
South Adjacent to the Port of Milwaukee	3	24	3.8
Entire Milwaukee Bay	**16**	**89**	**4.0**
SMC			
SMC East	4	25	6.4
SMC Middle	5	27	4.8
SMC West	1	9	3.3
Entire SMC	**9**	**61**	**5.3**

Note:
The average TOC was computed as the arithmetic mean of all samples in the specified area.

5.1.4 Oil and Grease

Oil and grease were analyzed using EPA Method 9071B at four locations within KK River Reach 4 at the Greenfield Slip. A total of 18 samples were collected and analyzed from locations KKR-21-058 through KKR-21-061 (Figure 3-8). Concentrations ranged from a low of 147 mg/kg at location KKR-21-060 from 7 to 9 feet to a high of 6,760 mg/kg occurring at location KKR-21-061 from 7 to 9 feet (Table 5-2; attached). Oil and grease concentrations were highest in sediment cores collected from both ends of the Greenfield Slip (locations KKR-21-058 and KKR-21-061; Figure 3-8). Oil and grease concentrations were consistently above 2,500 mg/kg throughout the sediment core at location KKR-21-061 (located near the connection with the KK River), whereas oil and grease concentrations above 2,000 mg/kg were also observed in the sediment from location KKR-21-058 within the top 3 feet (located at the terminal end of the slip).

5.2 Analytical Results

To assess the degree of potential sediment contamination, analytical results were evaluated against the screening criteria listed in Section 4.3. The range of concentrations and exceedance frequency of the screening criteria by grouping (e.g., PEC, 3 x PEC, 5 x PEC) is tabulated for each chemical. Figures 5-1 through 5-12 also depict the observed concentrations for each depth interval at each location relative to the specific screening criteria.

These analytical results have been evaluated for trends both spatially and vertically. Spatially, the trends within the KK River and SMC are discussed by reach; trends in Milwaukee Bay are discussed by area, starting in the north at the Linnwood Water Treatment Plant and ending at Port Milwaukee. Vertically, concentration trends were assessed qualitatively by depth (e.g., concentrations highest at the surface, increasing/decreasing with depth), and the concentration of the bottom interval of a given core location was compared with the screening criteria to understand if the vertical extent of contamination was defined.

5.2.1 Metals

All 88 core locations within the KK River, Milwaukee Bay, and SMC Investigation Areas were sampled for arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc. A total of 283 samples, including five field replicates and 19 field duplicates, were collected and analyzed. The metals with the greatest number of samples above the respective PEC levels were lead, chromium, cadmium, mercury, and zinc. The results of each metal are discussed in Sections 5.2.1.1 through 5.2.1.8.

5.2.1.1 Arsenic

Arsenic concentrations by core location and depth can be found in Figures 5-1 through 5-12. The concentrations of arsenic within the KK River Investigation Area ranged from 1.3 to 39.2 mg/kg, the maximum concentration occurring at KKR-21-057 from 3 to 4.3 feet (Table 5-3, attached). Arsenic was rarely observed within the KK River above the PEC of 33 mg/kg. Only one sample (KKR-21-057 from 3 to 4.3 feet) exceeded the PEC for arsenic (Table 5-9). This sample was located at the deepest interval of sediment core in Reach 3 within SkipperBud's Slip (Figure 5-7).

Table 5-9
Arsenic Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Arsenic Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	1.3 – 4.8	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	BS	3 – 4.3	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	2 – 5	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
	SS	1.6 – 5.8	0 of 2 (0%)	0 of 2 (0%)	0 of 2 (0%)
	BS	3.5 – 8.8	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	SC	2.2 – 22.7	0 of 34 (0%)	0 of 34 (0%)	0 of 34 (0%)
2	SC	6.1 – 20.9	0 of 11 (0%)	0 of 11 (0%)	0 of 11 (0%)
3	SC	12 – 39.2	1 of 8 (13%)	0 of 8 (0%)	0 of 8 (0%)
4	SC	1.9 – 30.4	0 of 23 (0%)	0 of 23 (0%)	0 of 23 (0%)
Entire KK River	**--**	**1.3 – 39.2**	**1 of 122 (1%)**	**0 of 122 (0%)**	**0 of 122 (0%)**

Notes:
See Table 5-3 (attached) for individual arsenic results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Arsenic PEC = 33 mg/kg

Similar to KK River, arsenic concentrations within Milwaukee Bay were relatively low and ranged from 1.5 to 30 mg/kg. In fact, no samples within Milwaukee Bay exceeded the PEC for arsenic (Table 5-10 and Figures 5-9 through 5-11).

Table 5-10
Arsenic Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Area	Arsenic Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	2.5 – 12.6	0 of 14 (0%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	1.5 – 30	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
Summerfest Lagoon	2.6 – 21.3	0 of 24 (0%)	0 of 24 (0%)	0 of 24 (0%)
South Adjacent to the Port of Milwaukee	1.6 – 14.7	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	**1.5 – 30**	**0 of 80 (0%)**	**0 of 80 (0%)**	**0 of 80 (0%)**

Notes:
See Table 5-3 (attached) for individual arsenic results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Arsenic PEC = 33 mg/kg

Arsenic concentrations, although low, were highest within the SMC Investigation Area. Concentrations of arsenic ranged from 2 to 75.2 mg/kg (location SMC-21-005 from 6 to 6.7 feet). Within SMC, four samples at one location (SMC-21-004) of the East area and three samples within two locations (SMC-21-005 and SMC-21-006) in the Middle area exceeded the PEC for arsenic (Table 5-11 and Figure 5-12). In all three cores with arsenic PEC exceedances, concentrations were below the PEC at the bottom interval of the core.

Table 5-11
Arsenic Concentrations and PEC Exceedance Frequency within SMC

Area	Arsenic Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	2 – 39	4 of 23 (17%)	0 of 23 (0%)	0 of 23 (0%)
Middle	2.2 – 75.2	3 of 21 (14%)	0 of 21 (0%)	0 of 21 (0%)
West	2.3 – 6.3	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	5.2 – 7.8	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
Entire SMC	**2 – 75.2**	**7 of 57 (12%)**	**0 of 57 (0%)**	**0 of 57 (0%)**

Notes:
See Table 5-3 (attached) for individual arsenic results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Arsenic PEC = 33 mg/kg

5.2.1.2 Cadmium

The concentrations of cadmium within the KK River Investigation Area ranged from 0.094 to 30.2 mg/kg, with the maximum concentration occurring at KKR-21-057 from 3 to 4.3 feet (Table 5-3, attached). The PEC for cadmium (i.e., 5 mg/kg) was exceeded at 22 locations (20 sediment cores and 2 bank locations) in a total of 47 samples with exceedances occurring in Reaches 1 through 4 of the KK River (Table 5-12). Approximately one-half of the samples from sediment cores exceeded the PEC for cadmium (Table 5-12). These exceedances were dispersed throughout Reaches 1 through 4, with five samples at five separate locations exceeding the PEC by a factor of 3 and two samples at two locations exceeding the PEC by more than a factor of 5. Cadmium concentrations were below the PEC for all samples in the Upstream Reach.

In general, cadmium concentrations were either consistent throughout the core or increased with depth (Table 5-3, attached). Where they increased with depth, cadmium concentrations exceeded the PEC in the bottom sampling interval at 16 sediment cores.

Table 5-12
Cadmium Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Cadmium Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	0.094 – 2.9	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	BS	0.094 – 0.33	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	0.17 – 1.5	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
	SS	0.43 – 1.4	0 of 2 (0%)	0 of 2 (0%)	0 of 2 (0%)
	BS	0.5 – 6.6	2 of 18 (11%)	0 of 18 (0%)	0 of 18 (0%)
	SC	0.77 – 24.1	18 of 34 (53%)	2 of 34 (6%)	0 of 34 (0%)
2	SC	1.1 – 25.4	5 of 11 (45%)	2 of 11 (18%)	1 of 11 (9%)
3	SC	3.2 – 30.2	4 of 8 (50%)	0 of 8 (0%)	1 of 8 (13%)
4	SC	0.2 – 15.6	11 of 23 (48%)	1 of 23 (4%)	0 of 23 (0%)
Entire KK River	**--**	**0.094 – 30.2**	**40 of 122 (33%)**	**5 of 122 (4%)**	**2 of 122 (2%)**

Notes:
See Table 5-3 (attached) for individual cadmium results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Cadmium PEC = 5 mg/kg

Cadmium concentrations within the Milwaukee Bay exhibited a similar range as the KK River (i.e., 0.077 to 39.8 mg/kg; Table 5-3, attached). The PEC for cadmium was exceeded at 12 locations in a total of 21 samples (Table 5-13). There were no discernable vertical trends in cadmium concentrations within the bay; however, when present above the PEC, cadmium concentrations were generally highest at a subsurface sediment depth (Figures 5-9 through 5-11). Only one location (MKE-21-073 within the Quiet Water Basin of the Summerfest Lagoon) contained a sample with a cadmium concentration greater than the PEC (i.e., 39.8 mg/kg) in the bottom sampling interval.

Table 5-13
Cadmium Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Area	Cadmium Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	0.093 – 8.2	1 of 14 (7%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	0.087 – 23.7	3 of 21 (14%)	4 of 21 (19%)	0 of 21 (0%)
Summerfest Lagoon	0.077 – 39.8	5 of 24 (21%)	2 of 24 (8%)	1 of 24 (4%)
South Adjacent to the Port of Milwaukee	0.091 – 13.1	5 of 21 (24%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	**0.077 – 39.8**	**14 of 80 (18%)**	**6 of 80 (8%)**	**1 of 80 (1%)**

Notes:
See Table 5-3 (attached) for individual cadmium results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Cadmium PEC = 5 mg/kg

Cadmium was less prevalent in the areas sampled within the SMC (Figure 5-12). The PEC for cadmium was exceeded at three locations in a total of nine samples (Table 5-14). Where present, maximum cadmium concentrations were typically observed in the middle of a sediment core. Only one location (SMC-21-001) contained a sample with a cadmium concentration greater than the PEC in the bottom sampling interval.

Table 5-14
Cadmium Concentrations and PEC Exceedance Frequency within SMC

Area	Cadmium Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	0.23 – 14.7	7 of 23 (30%)	0 of 23 (0%)	0 of 23 (0%)
Middle	0.13 – 10.9	2 of 21 (10%)	0 of 21 (0%)	0 of 21 (0%)
West	0.098 – 1.3	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	0.47 – 2.3	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
Entire SMC	**0.098 – 14.7**	**9 of 57 (16%)**	**0 of 57 (0%)**	**0 of 57 (0%)**

Notes:
See Table 5-3 (attached) for individual cadmium results within the SMC.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Cadmium PEC = 5 mg/kg

5.2.1.3 Chromium

The concentrations of chromium within the KK River Investigation Area ranged from 5 to 1,790 mg/kg at location KKR-21-057, from 3 to 4.3 feet (Figure 5-7). The PEC for chromium

(110 mg/kg) was exceeded at 20 locations in a total of 45 samples. All samples in the Upstream Reach as well as samples within manholes or diversion structures, outside of CSOs, and along the banks exhibited chromium concentrations less than the PEC. However, more than one-third of all samples in Reaches 1, 2, and 3 and one-quarter of samples in Reach 4 exceeded the PEC for chromium (Table 5-15). Further, 11 samples at five locations exceeded the chromium PEC by a factor of 3, whereas seven samples at five locations exceeded the PEC by a factor of 5 (Table 5-15).

When present, chromium concentrations typically increased with depth (e.g., KKR-21-057) or exhibited a subsurface sediment maximum concentration (e.g., KKR-21-052). The chromium concentrations of the bottom sampling interval exceeded the PEC in a total of 15 cores, with the chromium concentration exceeding three times the PEC at three locations (KKR-21-051, KKR-21-058, KKR-21-061) and five times the PEC at four locations (KKR-21-053, KKR-21-056, KKR-21-057, and KKR-21-059).

Table 5-15
Chromium Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Chromium Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	5 – 63.8	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	BS	10.5 – 17.9	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	24.4 – 82.6	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
	SS	7.3 – 48.5	0 of 2 (0%)	0 of 2 (0%)	0 of 2 (0%)
	BS	16.4 – 97.5	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	SC	12.8 – 215	13 of 34 (38%)	0 of 34 (0%)	0 of 34 (0%)
2	SC	67.2 – 926	5 of 11 (45%)	2 of 11 (18%)	2 of 11 (18%)
3	SC	84.6 – 1,790	3 of 8 (38%)	0 of 8 (0%)	4 of 8 (50%)
4	SC	8 – 661	6 of 23 (26%)	9 of 23 (39%)	1 of 23 (4%)
Entire KK River	**--**	5 – 1,790	27 of 122 (22%)	11 of 122 (9%)	7 of 122 (6%)

Notes:
See Table 5-3 (attached) for individual chromium results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Chromium PEC = 110 mg/kg

Concentrations for chromium within Milwaukee Bay ranged from 6 to 1,270 mg/kg with the maximum concentration occurring at location MKE-21-73, from 1 to 3 feet (Figure 5-10). Chromium concentrations exceeded the PEC in 15 samples at nine locations for a total of 19% of the total samples (Table 5-16). The PEC for chromium was exceeded by a factor of 3 in nine samples at eight core locations and was exceeded by a factor of 5 in nine samples at six core locations (Figures 5-9

through 5-11). The bottom sampling interval exceeded the PEC for chromium at only one location MKE-21-073 (Figure 5-10).

Table 5-16
Chromium Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Area	Chromium Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	11.5 – 263	5 of 14 (36%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	6 – 965	5 of 21 (24%)	4 of 21 (19%)	4 of 21 (19%)
Summerfest Lagoon	9.2 – 1,270	2 of 24 (8%)	3 of 24 (13%)	4 of 24 (17%)
South Adjacent to the Port Milwaukee	6.5 – 572	3 of 21 (14%)	2 of 21 (10%)	1 of 21 (5%)
Entire Milwaukee Bay	**6 – 1,270**	**15 of 80 (19%)**	**9 of 80 (11%)**	**9 of 80 (11%)**

Notes:
See Table 5-3 (attached) for individual chromium results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Chromium PEC = 110 mg/kg

Chromium concentrations were highest in SMC, ranging from 7.7 to 2,290 mg/kg, with the maximum concentration at location SMC-21-006, from 1 to 2.5 feet (Figure 5-12). Chromium concentrations exceeded the PEC in 19 samples at seven locations (Table 5-17). The PEC for chromium was exceeded by a factor of 3 in seven samples at two core locations (SMC-21-004 and SMC-21-005) and was exceeded by a factor of 5 in three samples at two separate core locations (SMC-21-005 and SMC-21-006). All samples exceeding the PEC for chromium by 5 or more occurred within the Middle area near the Interstate 43 overpass (Figure 5-12). The chromium concentration in the bottom sampling interval exceeded the PEC (110 mg/kg) in three cores within the East area (SMC-21-001, SMC-21-002, and SMC-21-004; Figure 5-12) and one core near the Burnham Canal (SMC-21-010; Figure 5-12).

Table 5-17
Chromium Concentrations and PEC Exceedance Frequency within SMC

Area	Chromium Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	15 – 449	7 of 23 (30%)	5 of 23 (22%)	0 of 23 (0%)
Middle	7.7 – 2,290	1 of 21 (5%)	2 of 21 (10%)	3 of 21 (14%)
West	11.8 – 85.4	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	13.9 – 111	1 of 4 (25%)	0 of 4 (0%)	0 of 4 (0%)
Entire SMC	**7.7 – 2,290**	**9 of 57 (16%)**	**7 of 57 (12%)**	**3 of 57 (5%)**

Notes:
See Table 5-3 (attached) for individual chromium results within the SMC.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Chromium PEC = 110 mg/kg

5.2.1.4 Copper

The concentrations of copper within the KK River Investigation Area ranged from 7.8 to 572 mg/kg at location KKR-21-053, from 0 to 1 foot (Figure 5-7). The PEC for copper (150 mg/kg) was exceeded at 13 locations (including a manhole or diversion structure at KKM-21-004 and a bank location at KKR-21-025) in a total of 18 samples, occurring throughout the KK River Investigation Area. Of the samples that exceeded the PEC for copper, concentrations of three samples at three locations (KKM-21-004, KKR-21-053, and KKR-21-057) exceeded the PEC by a factor of 3 (Table 5-18). There were no occurrences where the PEC was exceeded by a factor of 5.

In general, the copper concentrations increased with depth; however, copper concentrations of the surface sediment samples exceeded the PEC at all locations in Reach 3 as well as KKR-21-053 and KKR-21-058 in Reaches 2 and 4, respectively. The bottom sampling interval exceeded the PEC for copper at nine core locations.

Table 5-18
Copper Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Copper Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	7.8 – 50.7	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	BS	12 – 20.2	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	25.6 – 530	0 of 4 (0%)	1 of 4 (25%)	0 of 4 (0%)
	SS	9.6 – 95.6	0 of 2 (0%)	0 of 2 (0%)	0 of 2 (0%)
	BS	21 – 251	1 of 18 (6%)	0 of 18 (0%)	0 of 18 (0%)
	SC	18 – 188	1 of 34 (3%)	0 of 34 (0%)	0 of 34 (0%)
2	SC	96.1 – 572	2 of 11 (18%)	1 of 11 (9%)	0 of 11 (0%)
3	SC	205 – 469	7 of 8 (88%)	1 of 8 (13%)	0 of 8 (0%)
4	SC	9 – 170	4 of 23 (17%)	0 of 23 (0%)	0 of 23 (0%)
Entire KK River	**--**	**7.8 – 572**	**15 of 122 (12%)**	**3 of 122 (2%)**	**0 of 122 (0%)**

Notes:
See Table 5-3 (attached) for individual copper results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Copper PEC = 150 mg/kg

Copper concentrations within Milwaukee Bay ranged from 3.9 to 163 mg/kg. The copper PEC was exceeded in two samples at two locations within the Quiet Water Basin of the Summerfest Lagoon (locations MKE-21-073 from 1 to 3 feet and MKE-21-075 from 1 to 3 feet; Table 5-19). All copper concentrations were below the PEC at the bottom sampling interval.

Table 5-19
Copper Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Area	Copper Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	8.8 – 60.1	0 of 14 (0%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	3.9 – 117	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
Summerfest Lagoon	9.1 – 163	2 of 24 (8%)	0 of 24 (0%)	0 of 24 (0%)
South Adjacent to the Port Milwaukee	4.8 – 81	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	**3.9 – 163**	**2 of 80 (3%)**	**0 of 80 (0%)**	**0 of 80 (0%)**

Notes:
See Table 5-3 (attached) for individual copper results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Copper PEC = 150 mg/kg

Similarly, copper concentrations within SMC ranged from 9.9 to 221 mg/kg (Table 5-20). The copper PEC was exceeded in 10 samples at five locations within the East, Middle, and Burnham Canal areas (Table 5-3, attached). Each of these samples with copper concentrations exceeding the PEC were located at the surface (SMC-21-005 and SMC-21-010) or in the middle of the core (SMC-21-001, SMC-21-004, and SMC-21-006). All bottom sampling intervals contained copper concentrations below the PEC.

Table 5-20
Copper Concentrations and PEC Exceedance Frequency within SMC

Area	Copper Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	14.3 – 221	5 of 23 (22%)	0 of 23 (0%)	0 of 23 (0%)
Middle	9.9 – 213	3 of 21 (14%)	0 of 21 (0%)	0 of 21 (0%)
West	11 – 47.9	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	40.3 – 172	2 of 4 (50%)	0 of 4 (0%)	0 of 4 (0%)
Entire SMC	**9.9 – 221**	**10 of 57 (18%)**	**0 of 57 (0%)**	**0 of 57 (0%)**

Notes:
See Table 5-3 (attached) for individual copper results within the SMC.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Copper PEC = 150 mg/kg

5.2.1.5 Lead

Lead concentrations within the KK River Investigation Area ranged from 6.9 to 1,210 mg/kg, with the maximum concentration detected at location KKR-21-051, from 3 to 5 feet (Figure 5-7). The PEC for lead (i.e., 130 mg/kg) was exceeded in 37 locations and nearly one-third of all samples within the KK River Investigation Area (Figures 5-1 through 5-8 and Table 5-21). Of the samples that exceeded the PEC for lead, there were 16 locations (27 samples) where the PEC for lead was exceeded by a factor of 3 and 11 locations (13 samples) where the PEC for lead was exceeded by a factor of 5.

Although lead concentrations generally increased with depth, there were no discernable vertical trends with the lead profiles and it was found throughout the KK River Investigation Area, including upstream of the South Chase Avenue Bridge (KKR-21-019 and KKR-21-020), within a manhole or diversion structure (KKM-21-004), and within each bank location in Reach 1. The bottom sampling interval exceeded the PEC for lead at 21 core locations.

Table 5-21
Lead Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Lead Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	8.2 – 158	2 of 18 (11%)	0 of 18 (0%)	0 of 18 (0%)
	BS	10.2 – 36.9	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	23.7 – 435	0 of 4 (0%)	1 of 4 (25%)	0 of 4 (0%)
	SS	18.6 – 123	0 of 2 (0%)	0 of 2 (0%)	0 of 2 (0%)
	BS	66.3 – 1,150	10 of 18 (56%)	1 of 18 (6%)	3 of 18 (17%)
	SC	25.7 – 842	8 of 34 (24%)	8 of 34 (24%)	11 of 34 (32%)
2	SC	127 – 1,210	1 of 11 (9%)	7 of 11 (64%)	2 of 11 (18%)
3	SC	166 – 653	4 of 8 (50%)	3 of 8 (38%)	1 of 8 (13%)
4	SC	6.9 – 604	13 of 23 (57%)	3 of 23 (13%)	0 of 23 (0%)
Entire KK River	**--**	**6.9 – 1,210**	**38 of 122 (31%)**	**27 of 122 (22%)**	**13 of 122 (11%)**

Notes:
See Table 5-3 (attached) for individual lead results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Lead PEC = 130 mg/kg

Milwaukee Bay lead concentrations in sediment were lower than the KK River, with the maximum concentration of 256 mg/kg at location MKE-21-068 from 5 to 6 feet (Figure 5-10). Lead concentrations of 20 samples at nine locations exceeded the PEC (Figures 5-9 through 5-11; Table 5-22). The lead concentration in the bottom interval exceeded the PEC at one location (MKE-21-73; Figure 5-10).

Table 5-22
Lead Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Area	Lead Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	7.9 – 144	1 of 14 (7%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	5.1 – 256	11 of 21 (52%)	0 of 21 (0%)	0 of 21 (0%)
Summerfest Lagoon	6.9 – 250	6 of 24 (25%)	0 of 24 (0%)	0 of 24 (0%)
South Adjacent to the Port Milwaukee	6.1 – 150	2 of 21 (10%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	**5.1 – 256**	**20 of 80 (25%)**	**0 of 80 (0%)**	**0 of 80 (0%)**

Notes:
See Table 5-3 (attached) for individual lead results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Lead PEC = 130 mg/kg

Lead concentrations in the SMC ranged from 5.8 to 861 mg/kg, with the maximum concentration occurring at location SMC-21-006 (Figure 5-12). Lead concentrations exceeded the PEC in 16 samples at eight locations within the East, Middle, and Burnham Canal areas of the SMC (Figure 5-12; Table 5-23). The PEC for lead was exceeded by a factor of 3 in five samples at three core locations (SMC-21-004, SMC-21-005, and SMC-21-010) and was exceeded by a factor of 5 in one sample (SMC-21-006). The lead concentration in the bottom interval exceeded the PEC at four locations (SMC-21-001, SMC-21-002, SMC-21-010, and SMC-21-011; Figure 5-12).

Table 5-23
Lead Concentrations and PEC Exceedance Frequency within SMC

Area	Lead Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	6.8 – 405	10 of 23 (43%)	2 of 23 (9%)	0 of 23 (0%)
Middle	5.8 – 861	3 of 21 (14%)	2 of 21 (10%)	1 of 21 (5%)
West	6 – 89.7	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	141 – 443	3 of 4 (75%)	1 of 4 (25%)	0 of 4 (0%)
Entire SMC	**5.8 – 861**	**16 of 57 (28%)**	**5 of 57 (9%)**	**1 of 57 (2%)**

Notes:
See Table 5-3 (attached) for individual lead results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Lead PEC = 130 mg/kg

5.2.1.6 Mercury

The mercury concentrations within the KK River Investigation Area ranged from not detected to 5.9 mg/kg, with the maximum concentration observed at location KKR-21-053, from 3 to 5 feet (Figure 5-7). The PEC for mercury (1.1 mg/kg) was exceeded at eight locations (including a bank location at KKR-21-044) in a total of 14 samples (Table 5-24). Of the samples that exceeded the PEC for mercury, one exceeded the PEC by a factor of 5 (KKR-21-053) and two exceeded the PEC by a factor of 3 (KKR-21-044 from 0.9 to 1.1 feet and KKR-21-051 from 5 to 7 feet).

Mercury concentrations generally increased with depth within the KK River. Mercury concentrations exceeded the PEC in the bottom sampling interval for six of the seven cores with mercury PEC exceedances (Figures 5-9 through 5-11).

Table 5-24
Mercury Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Mercury Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	ND (0.012) – 0.85	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	BS	ND (0.012) – 0.013	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	ND (0.012) – 0.53	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
	SS	0.025 – 0.073	0 of 2 (0%)	0 of 2 (0%)	0 of 2 (0%)
	BS	0.031 – 4.4	0 of 18 (0%)	1 of 18 (6%)	0 of 18 (0%)
	SC	0.02 – 1.4	1 of 34 (3%)	0 of 34 (0%)	0 of 34 (0%)
2	SC	0.17 – 5.9	5 of 11 (45%)	1 of 11 (9%)	1 of 11 (9%)
3	SC	0.13 – 1.7	1 of 8 (13%)	0 of 8 (0%)	0 of 8 (0%)
4	SC	0.018 – 1.9	4 of 23 (17%)	0 of 23 (0%)	0 of 23 (0%)
Entire KK River	**--**	**ND (0.012) – 5.9**	**11 of 122 (9%)**	**2 of 122 (2%)**	**1 of 122 (1%)**

Notes:
See Table 5-3 (attached) for individual mercury results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Mercury PEC = 1.1 mg/kg
ND (not detected) includes the detection limit in parentheses

Concentrations of mercury within Milwaukee Bay ranged from not detected to 4.1 mg/kg (Table 5-25). Thirteen samples at eight locations within Milwaukee Bay exceeded the mercury PEC of 1.1 mg/kg (Table 5-25). In all but one case, the samples with mercury concentrations exceeding the PEC were located in the middle of the cores. Thus, mercury concentrations of the bottom sampling interval were below the PEC except for location MKE-21-073 (Figure 5-10).

Table 5-25
Mercury Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Area	Mercury Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	ND (0.012) – 1.1	1 of 14 (7%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	ND (0.011) – 4.1	8 of 21 (38%)	1 of 21 (5%)	0 of 21 (0%)
Summerfest Lagoon	ND (0.012) – 2.1	3 of 24 (13%)	0 of 24 (0%)	0 of 24 (0%)
South Adjacent to the Port Milwaukee	ND (0.011) – 1.1	1 of 21 (5%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	**ND (0.011) – 4.1**	**13 of 80 (16%)**	**1 of 80 (1%)**	**0 of 80 (0%)**

Notes:
See Table 5-3 (attached) for individual mercury results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Mercury PEC = 1.1 mg/kg
ND (not detected) includes the detection limit in parentheses

Concentrations of mercury within SMC ranged from not detected to 18.9 mg/kg, with the maximum mercury concentration occurring at SMC-21-006 from 1 to 2.5 feet (Table 5-26). Nine samples at three locations in the East and Middle areas (SMC-21-004, SMC-21-005, and SMC-21-006) exceeded the PEC of 1.1 mg/kg. Of the samples that exceeded the PEC for mercury, concentrations of three samples in location SMC-21-004 exceeded the PEC by a factor of 3 and three samples in two locations (SMC-21-005 and SMC-21-006) exceeded the PEC by a factor of 5 or more (Table 5-26; Figure 5-12). The mercury concentration of the bottom sampling interval exceeded the PEC at one location SMC-21-004.

Table 5-26
Mercury Concentrations and PEC Exceedance Frequency within SMC

Area	Mercury Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	ND (0.018) – 5.3	3 of 23 (13%)	3 of 23 (13%)	0 of 23 (0%)
Middle	ND (0.012) – 18.9	0 of 21 (0%)	0 of 21 (0%)	3 of 21 (14%)
West	ND (0.012) – 0.05	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	ND (0.073) – 0.35	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
Entire SMC	**ND (0.012) – 18.9**	**3 of 57 (5%)**	**3 of 57 (5%)**	**3 of 57 (5%)**

Notes:
See Table 5-3 (attached) for individual mercury results within the SMC.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Mercury PEC = 1.1 mg/kg
ND (not detected) includes the detection limit in parentheses

5.2.1.7 Nickel

The concentrations of nickel within the KK River Investigation Area ranged from 5.6 to 79.5 mg/kg (Table 5-27). The PEC for nickel (49 mg/kg) was exceeded at three locations in a total of four samples. No discernable trends were present in nickel concentrations, because nickel concentrations both increased and decreased with depth.

Table 5-27
Nickel Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Nickel Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	5.8 – 22.7	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	BS	10.4 – 24.2	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	11.8 – 43.4	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
	SS	6.6 – 26.8	0 of 2 (0%)	0 of 2 (0%)	0 of 2 (0%)
	BS	11.8 – 36.8	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	SC	10.2 – 42.9	0 of 34 (0%)	0 of 34 (0%)	0 of 34 (0%)
2	SC	22.6 – 41.6	0 of 11 (0%)	0 of 11 (0%)	0 of 11 (0%)
3	SC	27 – 79.5	3 of 8 (38%)	0 of 8 (0%)	0 of 8 (0%)
4	SC	5.6 – 51.9	1 of 23 (4%)	0 of 23 (0%)	0 of 23 (0%)
Entire KK River	--	**5.6 – 79.5**	**4 of 122 (3%)**	**0 of 122 (0%)**	**0 of 122 (0%)**

Notes:
See Table 5-3 (attached) for individual nickel results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Nickel PEC = 49 mg/kg

Nickel concentrations within Milwaukee Bay were low and ranged from 4.3 to 54.2 mg/kg (Table 5-28). Only one sample at location MKE-21-073 from 1 to 3 feet slightly exceeded the PEC of 49 mg/kg. No locations exhibited PEC exceedances in the bottom core interval.

Table 5-28
Nickel Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Reach	Nickel Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	8.8 – 41	0 of 14 (0%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	4.3 – 45.3	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
Summerfest Lagoon	8.2 – 54.2	1 of 24 (4%)	0 of 24 (0%)	0 of 24 (0%)
South Adjacent to the Port Milwaukee	4.3 – 34	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	**4.3 – 54.2**	**1 of 80 (1%)**	**0 of 80 (0%)**	**0 of 80 (0%)**

Notes:
See Table 5-3 (attached) for individual nickel results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Nickel PEC = 49 mg/kg

Nickel concentrations within the SMC were generally low and ranged from 8.3 to 141 mg/kg (Table 5-29). Six samples at three locations (SMC-21-001, SMC-21-004, SMC-21-007) exceeded the nickel PEC. The nickel concentration of the bottom sampling interval exceeded the PEC at location SMC-21-001.

Table 5-29
Nickel Concentrations and PEC Exceedance Frequency within SMC

Reach	Nickel Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	8.3 – 141	5 of 23 (22%)	0 of 23 (0%)	0 of 23 (0%)
Middle	9.5 – 74.5	1 of 21 (5%)	0 of 21 (0%)	0 of 21 (0%)
West	11.9 – 22.5	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	15.9 – 24.8	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
Entire SMC	**8.3 – 141**	**6 of 57 (11%)**	**0 of 57 (0%)**	**0 of 57 (0%)**

Notes:
See Table 5-3 (attached) for individual nickel results within the SMC.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Nickel PEC = 49 mg/kg

5.2.1.8 Zinc

The concentrations of zinc within the KK River Investigation Area ranged from 33.4 to 1,630 mg/kg, with the maximum concentration observed at KKR-21-057, from 3 to 4.3 feet (Figure 5-7). A total of 59 samples exceeded the PEC for zinc (i.e., 460 mg/kg) at 28 locations, including a manhole or

diversion structure at KKM-21-004, several bank locations, and a surface sediment sample outside of a CSO (KKR-21-029). In fact, nearly one-half of the total samples exceeded the PEC for zinc. The zinc concentration of one sample at KKR-21-057 from 3 to 4.3 feet exceeded the PEC by a factor of 3. No samples exceeded the PEC by a factor of 5 (Table 5-30).

There are no discernable vertical patterns of zinc concentrations within the KK River. The zinc concentrations of the bottom sampling interval exceeded the PEC at 16 core locations.

Table 5-30
Zinc Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Zinc Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	33.4 – 341	0 of 18 (0%)	0 of 18 (0%)	0 of 18 (0%)
	BS	41.5 – 89.3	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	94.6 – 971	1 of 4 (25%)	0 of 4 (0%)	0 of 4 (0%)
	SS	86.6 – 585	1 of 2 (50%)	0 of 2 (0%)	0 of 2 (0%)
	BS	113 – 857	10 of 18 (56%)	0 of 18 (0%)	0 of 18 (0%)
	SC	123 – 1,150	19 of 34 (56%)	0 of 34 (0%)	0 of 34 (0%)
2	SC	346 – 1,230	9 of 11 (82%)	0 of 11 (0%)	0 of 11 (0%)
3	SC	622 – 1,630	7 of 8 (88%)	1 of 8 (13%)	0 of 8 (0%)
4	SC	41.3 – 848	11 of 23 (48%)	0 of 23 (0%)	0 of 23 (0%)
Entire KK River	**--**	**33.4 – 1,630**	**58 of 122 (48%)**	**1 of 122 (1%)**	**0 of 122 (0%)**

Notes:
See Table 5-3 (attached) for individual zinc results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Zinc PEC = 460 mg/kg

The zinc concentrations within Milwaukee Bay ranged from 27.2 to 998 mg/kg (Table 5-31). Eight samples from five locations in the outer harbor and Summerfest Lagoon exceeded the PEC for zinc (Figure 5-10). Zinc PEC exceedances occurred within the middle of each core except location MKE-21-073 where the zinc concentration of the bottom sampling interval was 810 mg/kg and above the PEC.

Table 5-31
Zinc Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Reach	Zinc Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	37.1 – 295	0 of 14 (0%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	38.2 – 666	5 of 21 (24%)	0 of 21 (0%)	0 of 21 (0%)
Summerfest Lagoon	27.2 – 998	3 of 24 (13%)	0 of 24 (0%)	0 of 24 (0%)
South Adjacent to the Port Milwaukee	27.9 – 422	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	**27.2 – 998**	**8 of 80 (10%)**	**0 of 80 (0%)**	**0 of 80 (0%)**

Notes:
See Table 5-3 (attached) for individual zinc results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Zinc PEC = 460 mg/kg

Similar to Milwaukee Bay, the zinc concentrations within the SMC were generally lower than observed in KK River and ranged from 34.7 to 741 mg/kg (Table 5-32). Four locations within the SMC contained a total of 12 samples with zinc concentrations that exceeded the PEC for zinc (Figure 5-12). The bottom sampling interval at one location, SMC-21-010 within the Burnham Canal, resulted in a zinc concentration that exceeded the PEC.

Table 5-32
Zinc Concentrations and PEC Exceedance Frequency within SMC

Reach	Zinc Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	49.9 – 741	4 of 23 (17%)	0 of 23 (0%)	0 of 23 (0%)
Middle	34.7 – 652	6 of 21 (29%)	0 of 21 (0%)	0 of 21 (0%)
West	39 – 143	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	143 – 560	2 of 4 (50%)	0 of 4 (0%)	0 of 4 (0%)
Entire SMC	**34.7 – 741**	**12 of 57 (21%)**	**0 of 57 (0%)**	**0 of 57 (0%)**

Notes:
See Table 5-3 (attached) for individual zinc results within the SMC.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Zinc PEC = 460 mg/kg

5.2.2 Total PAHs

The concentrations for total PAHs within the KK River Investigation Area ranged from not detected to 480 mg/kg at location KKR-21-026 from 1 to 1.7 feet (Table 5-33). Of the 122 samples analyzed for

total PAHs, 33 samples exceeded the PEC for total PAHs (i.e., 22.8 mg/kg), 16 samples exceeded the PEC by a factor of 3, and 48 samples exceeded by a factor of 5 (approximately 39% of the total samples). When separated by reach, more than 70% of the samples within Reaches 1 (sediment cores), 2, and 3 resulted in total PAH concentrations that exceeded the PEC by a factor of 5 (Table 5-33).

Unlike the metals that were rarely present in the Upstream Reach, nine surface sediment samples resulted in total PAH concentrations exceeding the PEC. Of these nine surface sediment samples, the total PAH concentration at location KKR-21-008, collected within the 43rd Street Ditch, exceeded the PEC by a factor of 5, and the total PAH concentration of the sample at location KKR-21-011, collected within the Wilson Park Creek, exceeded the PEC by a factor of 3. Although the total PAH concentrations of samples from the tributaries (i.e., KKR-21-008 and KKR-21-011) exceeded the PEC, the total PAH concentrations at the upstream and downstream sampling locations within the KK River (i.e., KKR-21-007, KKR-21-009, KKR-21-010, and KKR-21-012) resulted in values much lower than the PEC.

As noted in Section 3.1, sampling of sediment within select manholes or diversion structures, outside of CSOs, and along the banks was conducted to understand potential pathways of total PAHs exceeding five times the PEC to the KK River. Observations pertaining to these potential pathways in Reach 1 are summarized as follows (Figures 5-6A and 5-6B):

- The total PAH concentration of one manhole or diversion structure sediment sample at KKM-21-001 was observed at 73 mg/kg, which is more than three times the PEC of 22.8 mg/kg. Downstream, two manhole or diversion structure sediment samples (KKM-21-003 and KKM-21-004) resulted in total PAH concentrations that exceeded the PEC (37 mg/kg and 25 mg/kg, respectively).
- Recoverable sediment was collected at two locations outside of CSOs (KKR-21-029 and KKR-21-031). The total PAH concentration of KKR-21-029, 64 mg/kg, was nearly a factor of three times the PEC and the total PAH concentration of KKR-21-031, 22 mg/kg, was just below the PEC of 22.8 mg/kg.
- At least one sample from 8 of 11 bank locations exceeded the PEC for total PAHs:
  - Along the west bank upstream of South 1st Street, the upstream location (KKR-21-024) resulted in a maximum total PAH concentration within the core of 11 mg/kg, well below the PEC. Conversely, the total PAH concentration of KKR-21-025 and KKR-21-028 exceeded the PEC by more than a factor of 3 and nearly a factor of 3, respectively (Table 5-4, attached).
  - Immediately downstream of the East Lincoln Avenue Bridge, bank samples along the east side (KKR-21-032, KKR-21-036, and KKR-21-040) contained total PAH concentrations that exceed the PEC. Total PAH concentrations of bank samples along

the west side (KKR-21-033 and KKR-21-034) exceeded the PEC by a factor of 5 in one sample (KKR-21-033 from 0.4 to 1.2 feet) and the PEC by a factor of 3 in two samples (KKR-21-033 from 0 to 0.4 feet and KKR-21-034 from 0 to 1 feet).

- All 34 samples from the sediment cores exceeded the PEC, with total PAH concentrations of a majority of the samples exceeding the PEC by a factor of 5. The bottom sampling interval of every Reach 1 sediment core exceeded the PEC.

Similar to Reach 1 cores, all samples collected from both Reaches 2 and 3 exceeded the PEC, with total PAH concentrations exceeding the PEC by more than a factor of 5 for 73% of samples in Reach 2 and 75% of samples in Reach 3 (Table 5-33 and Figure 5-7). Within Reach 4, total PAH concentrations were highest at depth, particularly at locations KKR-21-061 and KKR-21-062 where total PAH concentrations exceeded the PEC by a factor of 5. The bottom sampling interval of three out of five locations within Reach 4 exceeded the PEC (Figure 5-8).

Table 5-33
Total PAH Concentrations and PEC Exceedance Frequency within KK River

Reach	Sample Type	Total PAH Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Upstream Reach	SS	0.17 – 140	7 of 18 (39%)	1 of 18 (6%)	1 of 18 (6%)
	BS	ND (0.081) – 4.6	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	5.1 – 73	2 of 4 (50%)	1 of 4 (25%)	0 of 4 (0%)
	SS	22 – 64	1 of 2 (50%)	0 of 2 (0%)	0 of 2 (0%)
	BS	2.8 – 180	9 of 18 (50%)	3 of 18 (17%)	1 of 18 (6%)
	SC	36 – 480	3 of 34 (9%)	3 of 34 (9%)	28 of 34 (82%)
2	SC	57 – 300	1 of 11 (9%)	2 of 11 (18%)	8 of 11 (73%)
3	SC	25 – 430	2 of 8 (25%)	0 of 8 (0%)	6 of 8 (75%)
4	SC	0.12 – 170	8 of 23 (35%)	6 of 23 (26%)	4 of 23 (17%)
Entire KK River	**--**	**ND (0.081) – 480**	**33 of 122 (27%)**	**16 of 122 (13%)**	**48 of 122 (39%)**

Notes:
See Table 5-4 (attached) for individual PAH results within the KK River.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Total PAHs PEC = 22.8 mg/kg
ND (not detected) includes the detection limit in parentheses

The total PAHs within Milwaukee Bay ranged from not detected to 100 mg/kg, with the maximum total PAHs observed at MKE-21-070, from 1.8 to 3.2 feet (Figure 5-10). Within Milwaukee Bay, the total PAH concentration of 18 samples from 10 locations exceeded the PEC of 22.8 mg/kg (Table 5-34), whereas four samples, from three locations (MKE-21-068, MKE-21-069, and MKE-21-070),

exceeded the PEC by a factor of 3. No samples within Milwaukee Bay exceeded the PEC by a factor of 5.

No discernable patterns were observed in total PAH concentrations. The bottom sampling interval at one location (MKE-21-073) resulted in a total PAH concentration that exceeded the PEC.

Table 5-34
Total PAH Concentrations and PEC Exceedance Frequency within Milwaukee Bay

Area	Total PAH Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
Nearshore and McKinley Marina	ND (0.080) – 20	0 of 14 (0%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	ND (0.075) – 80	7 of 21 (33%)	3 of 21 (14%)	0 of 21 (0%)
Summerfest Lagoon	ND (0.083) – 100	7 of 24 (29%)	1 of 24 (4%)	0 of 24 (0%)
South Adjacent to the Port Milwaukee	ND (0.074) – 34	4 of 21 (19%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	**ND (0.074) – 100**	**18 of 80 (23%)**	**4 of 80 (5%)**	**0 of 80 (0%)**

Notes:
See Table 5-4 (attached) for individual PAH results within the Milwaukee Bay.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Total PAHs PEC = 22.8 mg/kg
ND (not detected) includes the detection limit in parentheses

The total PAHs within the SMC ranged from not detected to 170 mg/kg, with the maximum total PAHs observed at SMC-21-011, from 1 to 2 feet (Table 5-35). Within the SMC, at least one sample within each core resulted in a total PAH concentration that exceeded the PEC, with the exception of SMC-21-007. Of the samples that exceeded the PEC for total PAHs, four exceeded the PEC by a factor of 5 in three locations (SMC-21-004, SMC-21-010, SMC-21-011) and seven exceeded the PEC by a factor of 3 in four locations (SMC-21-001, SMC-21-004, SMC-21-005, and SMC-21-010). The total PAH concentration of the bottom sampling interval was exceeded by the PEC in five cores (SMC-21-001, SMC-21-002, SMC-21-004, SMC-21-010, and SMC-21-011).

Table 5-35
Total PAH Concentrations and PEC Exceedance Frequency within SMC

Area	Total PAH Concentrations (mg/kg)	PEC Exceedance Frequency	3 x PEC Exceedance Frequency	5 x PEC Exceedance Frequency
East	0.12 – 150	12 of 23 (52%)	4 of 23 (17%)	2 of 23 (9%)
Middle	ND (0.076) – 110	5 of 21 (24%)	2 of 21 (10%)	0 of 21 (0%)
West	ND (0.078) – 23	1 of 9 (11%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	29 – 170	1 of 4 (25%)	1 of 4 (25%)	2 of 4 (50%)
Entire SMC	**ND (0.076) – 170**	**19 of 57 (33%)**	**7 of 57 (12%)**	**4 of 57 (7%)**

Notes:
See Table 5-4 (attached) for individual PAH results within the SMC.
For PEC exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
Total PAHs PEC = 22.8 mg/kg
ND (not detected) includes the detection limit in parentheses

5.2.3 Total PCBs

PCB Aroclors were analyzed at all 2021 sampling locations, whereas PCB congeners were analyzed at 10 locations, predominately in Reaches 1 and 3 of the KK River where total PCB Aroclor concentrations were measured at more than 50 mg/kg during previous investigations. Results of PCB Aroclors and PCB congeners are presented in Sections 5.2.3.1 and 5.2.3.2, respectively.

5.2.3.1 PCB Aroclors

The concentrations of total PCB Aroclors within the KK River Investigation Area ranged from not detected to 170 mg/kg (Table 5-36). Total PCB Aroclor concentrations greater than the 1 mg/kg screening value were observed in all reaches of the KK River.

The screening value of 1 mg/kg was exceeded in 15 locations in a total of 27 samples (22% of total samples), whereas the screening value of 5 mg/kg was exceeded in 13 samples in 11 locations, including a manhole or diversion structure (KKM-21-004) and a bank location (KKR-21-033; Table 5-36). Total PCB Aroclor concentrations greater than 50 mg/kg were identified at two locations within Reach 3 of the KK River—KKR-21-056 and KKR-21-057 (Figure 5-7).

Similar to total PAHs, sampling of sediment within select manholes or diversion structures, outside of CSOs, and along the banks was conducted to understand potential pathways of total PCBs exceeding

50 mg/kg to the KK River. Observations pertaining to these potential pathways in Reach 1 are as follows:

- Total PCB Aroclor concentrations of one manhole or diversion structure sediment sample at KKM-21-004 was observed at 5.6 mg/kg. The remaining three manhole or diversion structure sediment samples were below 1 mg/kg.
- Recoverable sediment was collected at two locations outside of CSOs (KKR-21-029 and KKR-21-031). The total PCB Aroclor concentrations of these samples were below 1 mg/kg.
- The total PCB Aroclor concentration of one sediment bank sample, KKR-21-033 (7.6 mg/kg), exceeded 5 mg/kg.
- Total PCB Aroclor concentrations for 14 samples from eight sediment core locations exceeded 1 mg/kg, whereas five samples from four sediment core locations exceeded 5 mg/kg. Specifically, total PCB Aroclor concentrations at four step-out locations around the 2020 sampling locations with total PCBs greater than 50 mg/kg ranged from 0.11 to 31 mg/kg, and all surface sediment concentrations were below 5 mg/kg.

Similar to Reach 1, total PCB Aroclor concentrations were analyzed at five locations within Reach 3 near two 2020 sampling locations (KKR-20-031 and KKR-20-032) where total PCB Aroclors exceeded 50 mg/kg. Within Reach 3, all but one sample resulted in total PCB Aroclor concentrations that exceed 1 mg/kg. Further, step-out locations KKR-21-056 and KKR-21-057 both contained samples exceeding 50 mg/kg, indicating a further expansion of the area with total PCBs greater than 50 mg/kg in this area.

Within Reaches 2 and 4 where further delineation sampling was conducted, total PCB Aroclor concentrations greater than 1 mg/kg were observed in seven out of eight cores. Total PCB Aroclor concentrations in Reach 2 barely exceeded 1 mg/kg with concentrations ranging from 1.4 to 1.5 mg/kg. Within Reach 4, total PCB Aroclor concentrations above 1 mg/kg were generally observed in the top 3 feet, with the highest total PCB Aroclor concentration of 15 mg/kg at KKR-21-059 observed from 3 to 4 feet.

Table 5-36
Total PCB Aroclor Concentrations and Screening Value Exceedance Frequency within KK River

Reach	Sample Type	Total PCB Aroclor Concentrations (mg/kg)	1 mg/kg Exceedance Frequency	5 mg/kg Exceedance Frequency	50 mg/kg Exceedance Frequency
Upstream Reach	SS	ND (0.0038) – 1.4	1 of 18 (6%)	0 of 18 (0%)	0 of 18 (0%)
	BS	ND (0.0036) – ND (0.0038)	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
1	MS	ND (0.0041) – 5.6	0 of 4 (0%)	1 of 4 (25%)	0 of 4 (0%)
	SS	0.24 – 0.28	0 of 2 (0%)	0 of 2 (0%)	0 of 2 (0%)
	BS	ND (0.0036) – 7.6	0 of 18 (0%)	1 of 18 (6%)	0 of 18 (0%)
	SC	0.11 – 31	14 of 34 (41%)	5 of 34 (15%)	0 of 34 (0%)
2	SC	ND (0.0054) – 1.5	3 of 11 (27%)	0 of 11 (0%)	0 of 11 (0%)
3	SC	0.13 – 170	0 of 8 (0%)	4 of 8 (50%)	3 of 8 (38%)
4	SC	ND (0.0050) – 15	9 of 23 (39%)	2 of 23 (9%)	0 of 23 (0%)
Entire KK River	**--**	**ND (0.0036) – 170**	**27 of 122 (22%)**	**13 of 122 (11%)**	**3 of 122 (2%)**

Notes:
See Table 5-5 (attached) for individual PCB Aroclor results within the KK River.
Total PCB Aroclor concentrations were screened against concentrations of 1 mg/kg, 5 mg/kg, and 50 mg/kg.
For screening criteria exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
ND (not detected) includes the detection limit in parentheses

Total PCB Aroclor concentrations within Milwaukee Bay were much less than the KK River, ranging from not detected to 2 mg/kg, with the highest concentration observed at MKE-21-073, from 1 to 3 feet (Figure 5-10). Within the outer harbor and Summerfest Lagoon, a total of three samples at three separate locations exceeded 1 mg/kg (Table 5-37), and all values above 1 mg/kg occurred within the 1- to 3-foot sampling interval.

Table 5-37
Total PCB Aroclor Concentrations and Screening Value Exceedance Frequency within Milwaukee Bay

Areas	Total PCB Aroclor Concentrations (mg/kg)	1 mg/kg Exceedance Frequency	5 mg/kg Exceedance Frequency	50 mg/kg Exceedance Frequency
Nearshore and McKinley Marina	ND (0.0035) – 0.47	0 of 14 (0%)	0 of 14 (0%)	0 of 14 (0%)
Outer Harbor North	ND (0.0033) – 1.2	2 of 21 (10%)	0 of 21 (0%)	0 of 21 (0%)
Summerfest Lagoon	ND (0.0036) – 2	1 of 24 (4%)	0 of 24 (0%)	0 of 24 (0%)
South Adjacent to the Port Milwaukee	ND (0.0033) – 0.73	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
Entire Milwaukee Bay	ND (0.0033) – 2	3 of 80 (4%)	0 of 80 (0%)	0 of 80 (0%)

Notes:
See Table 5-5 (attached) for individual PCB Aroclor results within the Milwaukee Bay.
Total PCB Aroclor concentrations were screened against concentrations of 1 mg/kg, 5 mg/kg, and 50 mg/kg.
For screening criteria exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
ND (not detected) includes the detection limit in parentheses

Total PCB Aroclor concentrations within the SMC were similar to Milwaukee Bay and much lower than the KK River. They ranged from not detected to 2.4 mg/kg (Figure 5-12). Within the SMC, one sample, SMC-21-002, from 4 to 4.9 feet exceeded 1 mg/kg; all other total PCB Aroclor concentrations were below 1 mg/kg (Table 5-38).

Table 5-38
Total PCB Aroclor Concentrations and Screening Value Exceedance Frequency within SMC

Areas	Total PCB Aroclor Concentrations (mg/kg)	1 mg/kg Exceedance Frequency	5 mg/kg Exceedance Frequency	50 mg/kg Exceedance Frequency
East	ND (0.0050) – 2.4	1 of 23 (4%)	0 of 23 (0%)	0 of 23 (0%)
Middle	ND (0.0033) – 0.97	0 of 21 (0%)	0 of 21 (0%)	0 of 21 (0%)
West	ND (0.0035) – 0.54	0 of 9 (0%)	0 of 9 (0%)	0 of 9 (0%)
Burnham Canal	ND (0.0037) – 0.15	0 of 4 (0%)	0 of 4 (0%)	0 of 4 (0%)
Entire SMC	ND (0.0033) – 2.4	1 of 57 (2%)	0 of 57 (0%)	0 of 57 (0%)

Notes:
See Table 5-5 (attached) for individual PCB Aroclor results within the SMC.
Total PCB Aroclor concentrations were screened against concentrations of 1 mg/kg, 5 mg/kg, and 50 mg/kg.
For screening criteria exceedance frequency, the value in parentheses is the frequency exceedance percentage. Field duplicates and field replicates were not included in the exceedance frequencies.
ND (not detected) includes the detection limit in parentheses

5.2.3.2 PCB Congeners

A total of 24 samples (including one field duplicate sample) from 10 locations within the KK River were selected to be analyzed using EPA Method 1668C for PCB congeners. These locations were co-located with analyses of metals, PAHs, and PCB Aroclors. Figures 5-13 through 5-15 present both total PCB congener and total PCB Aroclor concentrations. Of the 10 locations, one location was in the KK River Upstream Reach, whereas the other nine locations were placed adjacent to 2020 sampling locations with PCB concentrations greater than 50 mg/kg in KK River Reaches 1 and 3. The concentrations of total PCB congeners within the KK River Investigation Area ranged from less than 1.1 to 450 mg/kg (Table 5-6, attached). The total PCB congener concentration of KKR-21-020 located in the Upstream Reach was 1.1 mg/kg. All remaining samples that were collected to further define areas where PCB concentrations were greater than 50 mg/kg exceeded 5 mg/kg.

Within Reach 1, three locations (KKR-21-035, KKR-21-037, and KKR-21-039) were collected near 2020 sampling location KKR-20-008 where a surface sediment sample of PCBs exceeded 50 mg/kg. Total PCB congener results of KKR-21-037, located upstream of KKR-20-008, ranged from 13 mg/kg (within the bottom sampling interval) to 43 mg/kg at 3 to 5 feet (Table 5-6, attached). All samples resulted in total PCB congeners less than 50 mg/kg. However, total PCB congener concentrations within the top two intervals exceeded 50 mg/kg at KKR-21-035, which was adjacent to KKR-20-008 and KKR-21-039, which was downstream of KKR-21-008. In both locations, total PCB congener concentrations were less than 50 mg/kg within the bottom sampling interval. Total PCB congeners were also analyzed at location KKR-21-046 toward the downstream boundary of Reach 1. All total PCB congener concentrations at KKR-21-046 exceeded 5 mg/kg with a maximum concentration of 36 mg/kg within the surface sediment sample (0 to 1.3 feet).

Within Reach 3, total PCB congener concentrations were analyzed at five locations near two 2020 sampling locations (KKR-20-031 and KKR-20-032) where total PCB Aroclors exceeded 50 mg/kg. Of the nine samples analyzed, six total PCB congener concentrations were greater than 50 mg/kg. Step-out locations KKR-21-056, KKR-21-057, and KKR-21-055A contained samples exceeding 50 mg/kg, corroborating an expansion of the area with total PCBs greater than 50 mg/kg that was observed based on the total PCB Aroclor results. Total PCB congener results at location KKR-21-054 provided a surface sediment sample (0.6 to 0.9 foot) of 26 mg/kg, bounding the eastern extent of sediments with PCB concentrations greater than 50 mg/kg. However, due to the heavy vegetation within SkipperBud's Slip, only a surface sediment sample through direct push was able to be collected.

6 Conclusions

6.1 Nature and Extent of Contamination

This Tech Memo presents the assessment of sediment data collected in 2021 within the KK River, Milwaukee Bay, and SMC as part of a supplemental investigation. Based on the data collected during this investigation, concentrations of PAHs, PCBs, and metals exceeded the screening criteria in a number of locations in each of the three Investigation Areas. Findings of each Investigation Area specific to the data from the 2021 supplemental investigation are provided in this section.

6.1.1 KK River Investigation Area Findings

6.1.1.1 KK River Upstream Reach

- Sampling was conducted at 18 surface sediment sampling locations and three bank locations in the KK River Upstream Reach.
- Most samples in the Upstream Reach exhibited concentrations less than the screening criteria, and much less than concentrations observed in KK River Reaches 1 through 4 (Figures 5-1 through 5-5). The exceptions were nine locations where the total PAH concentration exceeded the PEC, two of which also exceeded the lead PEC and had total PCB Aroclor or total PCB congener results greater than 1 mg/kg. Due to the low levels of PAHs PCBs, and metals found in the Upstream Reach compared to KK River Reach 1, it is unlikely that the Upstream Reach is an existing source of these contaminants to KK River Reaches 1 through 4.

6.1.1.2 KK River Reach 1

- In addition to further delineating metals, total PAH, and total PCB concentrations within Reach 1, 2021 sampling included collection of sediment samples within select manholes or diversion structures, outside of CSOs, and along the banks to understand potential pathways of sediment to the KK River:
  - Bank sediment was collected at 11 locations within Reach 1. Metals and total PAHs were present in most bank locations at concentrations greater than their respective PECs. The following two bank locations had notable concentrations of total PCB Aroclors (KKR-21-033) and mercury (KKR-21-044):
    - At location KKR-21-033 on the west bank near the East Lincoln Avenue Bridge, total PCB Aroclor concentrations were observed at 7.6 mg/kg.
    - At location KKR-21-044 along the east bank within the downstream portion of Reach 1, the mercury concentration was greater than three times the PEC (i.e., 4.4 mg/kg).
  - Sediments were recovered from four of five manholes or diversion structures located within Reach 1. The total PAH PEC was exceeded in most manhole or diversion structure

locations (KKM-21-001, KKM-21-003, and KKM-21-004). One location near the East Lincoln Avenue Bridge (KKM-21-004) also contained sediment with copper, lead, and zinc concentrations that exceeded their respective PECs as well as a total PCB Aroclor concentration of 5.6 mg/kg.

- Sediments could only be recovered from two of the planned locations outside of the CSOs, of which only one location (KKR-21-029) contained sediment concentrations exceeding the total PAH and zinc PECs.
- Samples from 11 sediment cores were collected in Reach 1 to further delineate the presence of metals, PAHs, and PCBs (Figures 5-6A and 5-6B):
    - Spatially, metals, total PAHs, and total PCB Aroclors occurred throughout Reach 1 at concentrations above the screening levels. Total PCB congeners were also analyzed at four locations placed adjacent to a 2020 sampling location with PCB concentrations greater than 50 mg/kg (KKR-20-008). Total PCB congener concentrations in the top two intervals of step-out locations to the east and downstream of KKR-20-008 were also greater than 50 mg/kg (Figure 5-14A).
    - Vertically, concentrations of metals, total PAHs, and total PCB Aroclors generally increased with depth. Despite advancing more than 6 feet to refusal in several locations, native material was not recovered. Further, the bottom sampling interval of each sediment core (e.g., advanced to refusal with no native material observed) exceeded the screening criteria for one or more chemicals.

6.1.1.3 KK River Reach 2

- Three sediment locations were targeted in a previously inaccessible area of the KK River Reach 2 during the 2021 sampling program.
- Metals and total PAHs occurred throughout the cores with mercury, in particular, increasing with depth to concentrations of greater than three times the PEC in the bottom sampling interval of two cores. Vertical trends of total PAH concentrations greater than five times the PEC at 1 foot below the sediment surface were similar to nearby locations from the 2020 sampling where sand cover was not encountered (e.g., KKR-20-024 and KKR-20-023). Total PCB Aroclor concentrations were also greater than 1 mg/kg at mid-depth of two cores (KKR-21-051 and KKR-21-052; Figure 5-7).

6.1.1.4 KK River Reach 3

- The 2021 sampling program targeted step-out locations in SkipperBud's Slip within Reach 3.
- Metals (cadmium, chromium, copper, lead, and zinc), total PAHs, total PCB Aroclors, and total PCB congeners were prevalent within Reach 3 step-out locations. Similar to the 2020 sampling results, a majority of the samples exceeded the screening criteria for one or more chemicals (Figure 5-7).

- Total PCB concentrations were greater than 50 mg/kg for five of eight samples collected in 2021 based on either total PCB Aroclor or total PCB congener results (Figure 5-15). Figure 6-1 presents total PCB Aroclor concentrations from samples collected during 2019, 2020, and 2021 investigations. Spatial and vertical observations include the following:
  - Spatially, the sediments with total PCBs greater than 50 mg/kg were delineated to the east (i.e., the total PCB concentration of the surface sediment sample at location KKR-21-054 was less than 50 mg/kg); however, the western boundary of total PCB concentrations greater than 50 mg/kg was not fully delineated with 2021 sampling. However, when including 2019 results, the total PCB Aroclor concentrations are less than 50 mg/kg at all depths for SD003.
  - Vertically, the sediments collected in 2021 with total PCBs greater than 50 mg/kg did not exceed 3 feet below sediment surface in the western sample (KKR-21-057) and 1 foot below sediment surface in the eastern sample (KKR-21-054). Within SkipperBud's Slip, total PCB Aroclor concentrations exceeded 50 mg/kg in the bottom interval of two locations (SD002 collected in 2019 and KKR-21-056 collected in 2021).

6.1.1.5 KK River Reach 4

- The 2021 sampling program in Reach 4 of the KK River targeted the Greenfield Slip and an area along the western shoreline near a CSO.
- Metals (cadmium, chromium, and lead), total PAHs, and total PCB Aroclors were found above the screening levels in all five locations (Figure 5-8). In particular, total PAH concentrations were more than five times the PEC at depths 1 to 3 feet below sediment surface in KKR-21-062 and 5 to 10 feet below sediment surface in KKR-21-061.
- No distinguishable vertical trends were evident and the vertical extent of COCs exceeding screening levels was not fully delineated at three locations (KKR-21-058, KKR-21-059, KKR-21-061; Figure 5-8).

6.1.2 Milwaukee Bay Investigation Area Findings

- The 2021 sampling program targeted 16 locations in McKinley Marina, Summerfest Lagoon, the outer harbor, and areas near Port Milwaukee.
- Cadmium, chromium, lead, and total PAHs were observed at concentrations above their respective PECs at nearly all locations (Figures 5-9 through 5-11). Mercury concentrations also exceeded the PEC and total PCB Aroclor concentrations were greater than 1 mg/kg in the outer harbor north of the entrance channel and the Summerfest Lagoon (MKE-21-073) at depths greater than 1 foot below sediment surface (Figure 5-10).
- Native material was encountered at 9 out of 16 locations within Milwaukee Bay. Sediment concentrations within the native material were below the screening levels for all chemicals analyzed.

- The vertical extent of COCs exceeding the screening levels was fully delineated in all cores except MKE-21-073, one of the locations where native material was not encountered.

6.1.3 SMC Investigation Area Findings

- The 2021 sampling program in SMC included 11 locations (sediment cores were collected at 10 locations; 1 location was abandoned) in targeted areas with data gaps from previous sampling events.
- Native material was encountered at 2 out of 10 locations within the SMC (SMC-21-005 and SMC-21-008; Figure 5-12). Sediment concentrations within the native material were below the screening levels for all chemicals analyzed.
- Four locations were collected within the boundary of the FNC (SMC-21-001 through SMC-21-004). At each of these locations, the authorized depth occurred within the top 2 feet of sediment collection (Figure 5-12).
- When comparing the metal concentrations to the PEC, they tend to be equal to or less than the PEC within the near-surface sediments, with higher metal concentrations exceeding the PEC at depths above the native clay layer (where present). In particular, chromium, lead, and zinc concentrations most frequently exceeded their respective PECs with more than 20% of the samples exceeding the PEC.
- Total PAHs were observed throughout the SMC Investigation Area, with concentrations five times greater than the PEC value found from 2.5 to 4 feet below sediment surface at SMC-21-004 and 1 foot below sediment surface at the two locations within the Burnham Canal (SMC-21-010 and SMC-21-010; Figure 5-12).
- Total PCB Aroclor concentrations greater than 1 mg/kg were found at only one location (SMC-21-002 from 4 to 4.9 feet; Figure 5-12).
- The vertical extent of COCs exceeding screening levels was not fully delineated at five locations (Figure 5-12).

6.2 Recommendations

Based on these findings, the following recommendations are provided.

6.2.1 KK River Recommendations

- KK River Upstream Reach
  - Total PAH concentrations were observed at concentrations three and five times greater than the PEC within the tributaries to the KK River Upstream Reach at Wilson Park Creek and the 43rd Street Ditch, respectively. Due to these concentrations exceeding three and five times the PEC, additional investigations to delineate the extent of total PAHs are warranted in these tributaries.

- KK River Reach 1
  - Sediment near the western bank downstream of West Lincoln Avenue contained lead and total PAH concentrations five times greater than the PEC and total PCB Aroclor concentrations greater than 5 mg/kg. Additionally, sediment near the eastern bank at location KKR-21-044 contained mercury concentrations more than three times greater than the PEC. Additional sampling upstream and downstream of these locations is recommended.
  - Total PCB congener results (KKR-21-035 and KKR-21-039) identified additional areas east and downstream of KKR-20-008 where PCB concentrations exceeded 50 mg/kg in the top 3 feet of sediment. Based on these results the following activities are recommended:
    - Perform a desktop review of potential sources in the area based on composition of PCB congeners.
    - Perform additional sediment sampling downstream of KKR-21-039 to determine the downstream extent of total PCB concentrations that exceed 50 mg/kg.
- KK River Reach 2
  - Chromium, lead, mercury, and total PAHs concentrations exceeded the PEC by a factor of 5 in one or more of the three cores collected in Reach 2. Additional sampling to further define the vertical extent of these COCs is recommended.
- KK River Reach 3
  - The 2021 sediment sampling results indicated total PAH concentrations exceeding the PEC by a factor of 5 and total PCB concentrations (either total PCB Aroclors or total PCB congeners) exceeding 50 mg/kg. Further sediment sampling to assess the western extent of total PCB concentrations greater than 50 mg/kg and a desktop analysis of the PCB congener composition is recommended.
- KK River Reach 4
  - The vertical extent of COCs within the Greenfield Slip was not delineated due to woody debris encountered during sediment coring at the western end. Additional sampling may be warranted to define the vertical extent of COCs in this area, particularly if this area is targeted for habitat restoration and planned improvements to the sheetpile wall on the western side of the Slip.

6.2.2 Milwaukee Bay Recommendations

- Few sampling locations exhibited concentrations of PAHs and metals above their respective PECs in samples within McKinley Marina, in the outer harbor south of the entrance channel, and adjacent to Port Milwaukee (Figures 5-9 and 5-11). As such, no further sampling or assessment is recommended.

- Within the Summerfest Lagoon and outer harbor north of the entrance channel, metals (chromium, lead, mercury, and zinc) and total PAH concentrations exceeded the PEC, whereas total PCB Aroclor concentrations were greater than 1 mg/kg. However, these concentrations were typically found below 1 foot. Because of this vertical location (i.e., below the bioavailable zone), no further assessment is recommended.

6.2.3 SMC Recommendations

- The vertical extent of COCs exceeding the screening levels was not achieved at locations SMC-21-001, SMC-21-022, and SMC-21-004. However, because the sampled elevation extended more than 3 feet beyond the authorized depth of the FNC, no further sampling is recommended.
- Metals (chromium, copper, lead, and zinc) and total PAH concentrations exceeded the PEC in both cores collected within the Burnham Canal and the vertical extent of COCs was not defined. Additional sampling is recommended in this area; however, access to the waterway will need to be considered due to the inoperable railway bridge, which will be replaced as a part of the Muskego Yard Freight Rail Bypass Project in the coming years.

7 References

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Tables (attached)

Table 3-1
Kinnickinnic River – 2021 Sediment Sampling Summary

Sampling Area and Reach	Location ID	Northing[1]	Easting[1]	Collection Date	Field Bulk Density (lb/ft^3)	Water Depth (feet)	Mudline Elevation[2] (feet)	Core Penetration Depth (feet)	Recovered Sediment Core Length (feet)	% Recovery[3]	Core Refusal Elevation (feet)	Depth to Native Material Below Mudline (feet)	Native Material Elevation[4] (feet)	Collection Method[5]	Type of Sediment Sample[6]	Laboratory Analysis Summary											
																PCB Aroclors	PCB Congeners	Total Organic Carbon	PAHs	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn)	Mercury, Total	Oil and Grease	Percent Moisture	Grain Size (sieve, hydrometer)	Specific Gravity	Atterberg Limits	Moisture Content
Upstream Kinnickinnic River	KKR-21-001	369847.6	2507006.0	8/11/2021	NA	1	675.4	0.3	0.3	100%	675.1	NE	NE	Ponar Grab	SS	•		•	•	•	•		•				
	KKR-21-002	369918.3	2506984.7	8/13/2021	NA	0.2	690.4	0.1	0.1	100%	690.3	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-003	369945.8	2507044.4	8/11/2021	NA	0.7	684.1	0.3	0.3	100%	683.8	NE	NE	Ponar Grab	SS	•		•	•	•	•		•	•	•	•	•
	KKR-21-004	370787.5	2508178.7	8/11/2021	NA	0.5	679.4	1.3	1.3	100%	678.1	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-005	370205.9	2508622.7	8/11/2021	NA	0	NA	0.7	0.5	71.4%	NA	0.00	NA	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-006	370805.4	2509240.3	8/11/2021	NA	0	652.1	0.5	0.4	80%	651.6	0.00	652.11	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-007	370926.2	2512451.4	8/10/2021	NA	1.5	NA	0.3	0.3	100%	NA	NE	NE	Ponar Grab	SS	•		•	•	•	•		•	•	•	•	•
	KKR-21-008	371701.9	2512517.2	8/10/2021	NA	0.75	631.9	0.3	0.3	100%	631.6	NE	NE	Ponar Grab	SS	•		•	•	•	•		•				
	KKR-21-009	370858.9	2512708.1	8/10/2021	NA	0.5	631.9	0.3	0.3	100%	631.6	NE	NE	Ponar Grab	SS	•		•	•	•	•		•				
	KKR-21-010	367691.0	2516090.1	8/12/2021	NA	0.1	624.7	0.1	0.1	100%	624.6	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-011	367624.5	2516318.3	8/12/2021	NA	0.1	625.6	0.2	0.2	100%	625.4	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-012	367916.8	2516303.7	8/12/2021	NA	0.2	623.4	0.2	0.2	100%	623.2	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•	•	•	•	•
	KKR-21-013	368079.6	2517936.2	8/13/2021	NA	0.75	NA	0.1	0.1	100%	NA	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-014	368136.1	2520083.9	8/12/2021	NA	0.25	631.6	0.25	0.25	100%	631.3	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-015	369031.4	2520976.8	8/12/2021	NA	0.25	613.9	0.25	0.25	100%	613.6	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-016	370298.5	2521083.8	8/12/2021	NA	0.2	602.3	0.2	0.2	100%	602.1	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-017	370137.6	2524911.0	8/13/2021	NA	0.2	580.4	0.1	0.1	100%	580.3	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-018	369829.9	2525324.9	8/12/2021	NA	0.7	582.6	0.3	0.3	100%	582.3	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-019	369889.8	2526511.7	8/13/2021	NA	0.25	580.3	0.1	0.1	100%	580.2	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				
	KKR-21-020	370000.9	2526657.5	8/13/2021	NA	0.25	580.7	0.1	0.1	100%	580.6	NE	NE	Ponar Grab/Spoon Grab	SS	•	•	•	•	•	•		•	•	•	•	•
	KKR-21-021	370265.1	2526851.8	8/13/2021	NA	0.25	580.7	0.1	0.1	100%	580.6	NE	NE	Ponar Grab/Spoon Grab	SS	•		•	•	•	•		•				

Table 3-1
Kinnickinnic River – 2021 Sediment Sampling Summary

Sampling Area and Reach	Location ID	Northing[1]	Easting[1]	Collection Date	Field Bulk Density (lb/ft^3)	Water Depth (feet)	Mudline Elevation[2] (feet)	Core Penetration Depth (feet)	Recovered Sediment Core Length (feet)	% Recovery[3]	Core Refusal Elevation (feet)	Depth to Native Material Below Mudline (feet)	Native Material Elevation[4] (feet)	Collection Method[5]	Type of Sediment Sample[6]	Laboratory Analysis Summary											
																PCB Aroclors	PCB Congeners	Total Organic Carbon	PAHs	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn)	Mercury, Total	Oil and Grease	Percent Moisture	Grain Size (sieve, hydrometer)	Specific Gravity	Atterberg Limits	Moisture Content
Kinnickinnic River Reach 1	KKR-21-022	370384.7	2526956.5	8/5/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SS												
	KKR-21-023	370481.6	2526950.4	8/5/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SS												
	KKR-21-024	372095.7	2527292.6	8/6/2021	NA	0	580.4	1.3	1.3	100%	579.1	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-025	372250.9	2527267.9	8/6/2021	NA	0	581.1	1	1	100%	580.1	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-026	372205.9	2527222.5	8/6/2021	98.1	7	573.5	7.5	1.7	22.7%	566.0	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	KKR-21-027	372247.6	2527193.6	8/5/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SC												
	KKR-21-028	372295.2	2527227.4	8/6/2021	NA	0	581.0	0.9	0.8	88.9%	580.1	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-029	372411.7	2527087.0	8/10/2021	NA	4.5	576.4	0.3	0.3	100%	576.1	NE	NE	Ponar Grab	SS	•		•	•	•	•		•				
	KKR-21-030	372510.8	2527020.1	8/10/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SS												
	KKR-21-031	372503.4	2526896.8	8/10/2021	NA	12.6	568.7	0.3	0.3	100%	568.4	NE	NE	Ponar Grab	SS	•		•	•	•	•		•				
	KKR-21-032[7]	372578.2	2527014.9	8/10/2021	NA	1	579.7	2.1	2	95.2%	577.6	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•	•	•	•	•
	KKR-21-033[7]	372570.6	2526874.4	8/10/2021	NA	2	581.0	1.7	1.2	70.6%	579.3	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-034	372673.9	2526780.0	8/7/2021	NA	0	581.0	1.2	1.2	100%	579.8	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-035	372666.5	2526936.4	8/6/2021	86.7	3.7	578.0	7.8	7.8	100%	570.2	NE	NE	Vibracore	SC	•	•	•	•	•	•		•				
	KKR-21-036[7]	372633.7	2526965.6	8/10/2021	NA	1.3	579.5	1.2	1.2	100%	578.3	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-037	372611.3	2526949.6	8/6/2021	86.7	7.6	573.0	7.5	6.5	86.7%	565.5	NE	NE	Vibracore	SC	•	•	•	•	•	•		•				
	KKR-21-038	372629.2	2526912.5	8/6/2021	91.6	9.7	571.3	7.5	4.9	65.3%	563.8	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	KKR-21-039	372679.8	2526924.7	8/6/2021	95.9	5.7	576.0	5	3	60%	571.0	NE	NE	Vibracore	SC	•	•	•	•	•	•		•	•	•	•	•
	KKR-21-040[7]	372710.8	2526934.7	8/10/2021	NA	1	580.6	1.8	1.8	100%	578.8	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•	•	•	•	•
	KKR-21-041	372837.7	2526798.4	8/6/2021	106.0	7.7	573.1	3	2.3	76.7%	570.1	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	KKR-21-042	372860.4	2526903.1	8/7/2021	NA	0	580.7	0.9	0.9	100%	579.8	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-043	372910.1	2526771.0	8/6/2021	94.9	7.7	573.2	7.5	5.9	78.7%	565.7	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	KKR-21-044	373050.4	2526775.0	8/7/2021	NA	0	591.4	1.1	1.1	100%	590.3	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•				
	KKR-21-045	373145.0	2526701.2	8/7/2021	NA	0	587.2	1.3	1.3	100%	585.9	NE	NE	Bank Sediment via Push Core	BS	•		•	•	•	•		•	•	•	•	•
	KKR-21-046	373151.5	2526617.5	8/6/2021	98.6	8.5	572.5	5.4	4	74.1%	567.1	NE	NE	Vibracore	SC	•	•	•	•	•	•		•				
	KKR-21-047	373218.9	2526578.7	8/6/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SC												
	KKR-21-048	373323.5	2526492.3	8/7/2021	105.8	9.8	571.0	2.5	1.8	72%	568.5	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	KKR-21-049	373385.5	2526447.4	8/7/2021	94.5	9.5	571.2	6	4.4	73.3%	565.2	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	KKR-21-050	373610.8	2526508.4	8/7/2021	89.1	2.2	579.7	7.5	6.8	90.7%	572.2	NE	NE	Vibracore	SC	•		•	•	•	•		•				
Kinnickinnic River Reach 2	KKR-21-051	374389.8	2527801.2	8/5/2021	79.6	2.7	603.5	7.5	7.5	100%	596.0	NE	NE	Vibracore	SC	•		•	•	•	•		•	•	•	•	•
	KKR-21-052	374427.7	2527832.1	8/5/2021	82.0	2.4	580.7	7.5	7.3	97.3%	573.2	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	KKR-21-053	374403.1	2527853.7	8/5/2021	78.7	3.2	580.9	7.5	5.4	72%	573.4	NE	NE	Vibracore	SC	•		•	•	•	•		•				
Kinnickinnic River Reach 3	KKR-21-054	375213.0	2529140.9	8/9/2021	NA	1.5	579.3	0.9	0.9	100%	578.4	NE	NE	Direct Push	SC	•	•	•	•	•	•		•				
	KKR-21-055	375229.7	2529033.0	8/8/2021	74.1	4	577.2	1	0.85	85%	576.2	NE	NE	Vibracore	SC	•	•	•	•	•	•		•				
	KKR-21-055A	375215.3	2529108.8	8/9/2021	NA	2.3	577.3	1.5	1.25	83.3%	575.8	NE	NE	Vibracore	SC	•	•	•	•	•	•		•				
	KKR-21-056	375239.3	2528983.0	8/8/2021	79.7	4	578.3	4.3	2.9	67.4%	574.0	NE	NE	Vibracore	SC	•	•	•	•	•	•		•				
	KKR-21-057	375242.3	2528957.0	8/8/2021	67.5	4.3	577.3	5	4.3	86%	572.3	NE	NE	Vibracore	SC	•	•	•	•	•	•		•				

Table 3-1
Kinnickinnic River – 2021 Sediment Sampling Summary

Sampling Area and Reach	Location ID	Northing[1]	Easting[1]	Collection Date	Field Bulk Density (lb/ft^3)	Water Depth (feet)	Mudline Elevation[2] (feet)	Core Penetration Depth (feet)	Recovered Sediment Core Length (feet)	% Recovery[3]	Core Refusal Elevation (feet)	Depth to Native Material Below Mudline (feet)	Native Material Elevation[4] (feet)	Collection Method[5]	Type of Sediment Sample[6]	Laboratory Analysis Summary											
																PCB Aroclors	PCB Congeners	Total Organic Carbon	PAHs	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn)	Mercury, Total	Oil and Grease	Percent Moisture	Grain Size (sieve, hydrometer)	Specific Gravity	Atterberg Limits	Moisture Content
Kinnickinnic River Reach 4	KKR-21-058	378021.9	2528124.3	8/19/2021	NA	13.8	566.9	9.8	4.2	42.9%	557.1	NE	NE	Vibracore	SC	•		•	•	•	•	•	•				
	KKR-21-059	378024.3	2528242.5	8/19/2021	83.1	15.3	565.3	5.5	4	72.7%	559.8	NE	NE	Vibracore	SC	•		•	•	•	•	•	•				
	KKR-21-060	378072.9	2528567.9	8/19/2021	91.4	15.8	564.9	9.8	10	100%	555.1	NE	NE	Vibracore	SC	•		•	•	•	•	•	•				
	KKR-21-061	378062.4	2529147.5	8/19/2021	86.0	17.8	562.8	9.8	10	100%	553.0	NE	NE	Vibracore	SC	•		•	•	•	•	•	•				
	KKR-21-062	380656.0	2528949.1	8/19/2021	96.8	12.8	567.7	7.2	7.4	100%	560.5	NE	NE	Vibracore	SC	•		•	•	•	•		•				
Kinnickinnic River Reach 1 – Manholes/ Diversion Structures	KKM-21-001	370304.7	2526976.0	8/16/2021	NA	0.00	NA	0.10	0.10	100%	NA	NE	NE	Manhole Spoon Grab	MS	•		•	•	•	•		•	•	•	•	•
	KKM-21-002	370491.7	2526933.7	8/16/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MS												
	KKM-21-003	372423.7	2527124	8/16/2021	NA	0.20	NA	0.10	0.10	100%	NA	NE	NE	Manhole Ponar Grab	MS	•		•	•	•	•		•				
	KKM-21-004	372513.6	2527119	8/16/2021	NA	0.20	NA	0.10	0.10	100%	NA	NE	NE	Manhole Ponar Grab	MS	•		•	•	•	•		•				
	KKM-21-005	372502.8	2526861	8/16/2021	NA	0.20	NA	0.10	0.10	100%	NA	NE	NE	Manhole Spoon Grab	MS	•		•	•	•	•		•				

Table 3-1
Kinnickinnic River – 2021 Sediment Sampling Summary

Notes:
1. Horizontal Datum: Wisconsin State Plane, South Zone, North American Datum of 1983, U.S. Feet
2. Vertical Datum: International Great Lakes Datum of 1985. Mudline elevations for surface sediment and bank sediment samples collected upstream of Reach 1 were measured using a hand-held GPS. Remaining mudline elevations were based on the 2020 bathymetric survey results, with the exception of locations KKR-21-017, KKR-21-019, KKR-21-020, KKR-21-021, and KKR-21-031. These locations were outside of the survey limits and mudline elevations were estimated using a nearby temporary gauging station installed within Reach 1 of the KK River.
3. For select cores, the recovered sediment length was greater than the core penetration length due to expansion of clay at bottom of the core following removal. Percent recovery was set to 100% to note that the full core length was collected.
4. Native material has previously been defined as a silty clay (Arcadis 2016).
5. Six methods of sediment collection were implemented during the 2021 program: Ponar grab, spoon grab, bank sediment via push core, manhole, sediment core via vibracore, and sediment core via direct push.
6. Sediment samples include: surface sediment (SS), bank sediment (BS), manhole or diversion structure sediment (MS), and sediment core (SC).
7. Four locations (KKR-21-032, KKR-21-033, KKR-21-036, and KKR-21-040) were relocated to river's edge as close to the bank as was viable by vessel due to heavy vegetation along the bank.

Abbreviations:
As, Cd, Cr, Cu, Pb, Ni, Zn: arsenic, cadmium, chromium, copper, lead, nickel, zinc
KK River: Kinnickinnic River
lb/ft^3: pounds per cubic foot
NA: not applicable
NE: not encountered; the native material as described in Arcadis 2016 was not encountered
PAH: polycyclic aromatic hydrocarbon
PCB: polychlorinated biphenyl

Table 3-2
Milwaukee Bay – 2021 Sediment Sampling Summary

Sampling Area and Reach	Location ID	Northing[1]	Easting[1]	Collection Date	Field Bulk Density (lb/ft^3)	Water Depth (feet)	Mudline Elevation[2] (feet)	Core Penetration Depth (feet)	Recovered Sediment Core Length (feet)	% Recovery[3]	Core Refusal Elevation (feet)	Depth to Native Material Below Mudline (feet)	Native Material Elevation[4] (feet)	Collection Method[5]	Type of Sediment Sample[6]	Laboratory Analysis Summary											
																PCB Aroclors	PCB Congeners	Total Organic Carbon	PAHs	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn)	Mercury, Total	Oil and Grease	Percent Moisture	Grain Size (sieve, hydrometer)	Specific Gravity	Atterberg Limits	Moisture Content
Milwaukee Bay Nearshore and McKinley Marina	MKE-21-063	388745.6	2533869.3	8/18/2021	109.8	18.6	562.0	6.2	7.2	100%	555.8	6.6	555.4	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-064	389202.1	2534573.8	8/18/2021	98.1	19.3	561.0	7.3	6.4	87.7%	553.7	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-065	389432.5	2533739.7	8/18/2021	137.1	16.1	564.7	8.9	12	100%	555.8	5.0	559.7	Vibracore	SC	•		•	•	•	•		•	•	•	•	•
Milwaukee Bay North and Summerfest Lagoon	MKE-21-066	385891.4	2534011.0	8/18/2021	97.9	25.1	555.5	9	8.7	96.7%	546.5	8.2	547.3	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-067	384294.4	2533814.4	8/17/2021	96.6	25.1	555.6	10.2	9.7	95.1%	545.4	7.7	547.9	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-068	382690.7	2533597.0	8/17/2021	97.6	26.9	554.0	7.3	7.2	98.6%	546.7	6.0	548.0	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-069	381855.9	2533796.0	8/17/2021	101.1	29.7	551.3	6.6	7.2	100%	544.7	5.6	545.7	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-070	384638.0	2530856.1	8/19/2021	62.2	16.9	563.3	7.9	8.5	100%	555.4	7.5	555.8	Vibracore	SC	•		•	•	•	•		•	•	•	•	•
	MKE-21-071	384806.9	2531118.2	8/18/2021	112.9	21.3	559.6	5.3	5.5	100%	554.3	4.8	554.8	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-072	384810.3	2531369.8	8/18/2021	104.6	22.1	558.8	5.2	4.4	84.6%	553.6	3.5	555.3	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-073	382227.9	2530801.5	8/8/2021	88.9	21.6	559.6	6.25	5.1	81.6%	553.3	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-074	382227.6	2530868.5	8/8/2021	95.9	21.1	560.0	5.4	4.3	79.6%	554.6	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-075	382187.5	2530891.5	8/8/2021	96.1	22.1	559.5	5.5	5	90.9%	554.0	NE	NE	Vibracore	SC	•		•	•	•	•		•				
Milwaukee Bay South Adjacent to the Port of Milwaukee	MKE-21-076-A[7]	379963.9	2533746.5	8/16/2021	114.5	32	548.9	13	5.4	41.5%	535.9	NE	NE	Vibracore	SC												
	MKE-21-076-B	379963.9	2533746.5	8/16/2021	115.0	32	548.9	5.1	4.4	86.3%	543.8	NE	NE	Vibracore	SC	•		•	•	•	•		•	•	•	•	•
	MKE-21-077	378511.6	2531308.5	8/17/2021	129.1	32	549.0	14.2	14.2	100%	534.8	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	MKE-21-078	375394.2	2535043.7	8/17/2021	122.2	32.5	548.4	14	15.7	100%	534.4	NE	NE	Vibracore	SC	•		•	•	•	•		•				

Table 3-2
Milwaukee Bay – 2021 Sediment Sampling Summary

Notes:
1. Horizontal Datum: Wisconsin State Plane, South Zone, North American Datum of 1983, U.S. Feet
2. Vertical Datum: International Great Lakes Datum of 1985. Mudline elevations were based on the 2020 bathymetric survey results.
3. For select cores, the recovered sediment length was greater than the core penetration length due to expansion of clay at bottom of the core following removal. Percent recovery was set to 100% to note that the full core length was collected.
4. Native material has previously been defined as a silty clay (Arcadis 2016).
5. Six methods of sediment collection were implemented during the 2021 program: Ponar grab, spoon grab, bank sediment via push core, manhole, sediment core via vibracore, and sediment core via direct push.
6. Sediment samples include: surface sediment (SS), bank sediment (BS), manhole or diversion structure sediment (MS), and sediment core (SC).
7. Two cores were collected at location MKE-21-076 (A and B). Sufficient volume was achieved using one core.

Abbreviations:
As, Cd, Cr, Cu, Pb, Ni, Zn: arsenic, cadmium, chromium, copper, lead, nickel, zinc
lb/ft^3: pounds per cubic foot
NA: not applicable
NE: not encountered; the native material as described in Arcadis 2016 was not encountered
PAH: polycyclic aromatic hydrocarbon
PCB: polychlorinated biphenyl

Table 3-3
South Menomonee Canal – 2021 Sediment Sampling Summary

Sampling Area and Reach	Location ID	Northing[1]	Easting[1]	Collection Date	Field Bulk Density (lb/ft^3)	Water Depth (feet)	Mudline Elevation[2] (feet)	Core Penetration Depth (feet)	Recovered Sediment Core Length (feet)	% Recovery[3]	Core Refusal Elevation (feet)	Depth to Native Material Below Mudline (feet)	Native Material Elevation[4] (feet)	Collection Method[5]	Type of Sediment Sample[6]	Laboratory Analysis Summary											
																PCB Aroclors	PCB Congeners	Total Organic Carbon	PAHs	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn)	Mercury, Total	Oil and Grease	Percent Moisture	Grain Size (sieve, hydrometer)	Specific Gravity	Atterberg Limits	Moisture Content
East	SMC-21-001	383275.33	2525806.44	8/20/2021	86.8	21.8	556.5	10	8.3	83%	548.2	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	SMC-21-002	382927.09	2525808.46	8/20/2021	93.4	23.3	557.1	6.2	4.9	79%	552.2	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	SMC-21-003	382857.98	2525874.81	8/20/2021	88.1	23	557.5	10	9.4	94%	548.1	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	SMC-21-004	382350.52	2525847.57	8/20/2021	87.4	16.4	558.1	10	8.8	88%	549.3	NE	NE	Vibracore	SC	•		•	•	•	•		•	•	•	•	•
	SMC-21-009	382767.41	2525781.69	8/20/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA												
Middle	SMC-21-005	381824.94	2524362.71	8/20/2021	113.8	20.7	559.4	19.5	20	100%	539.4	6.7	552.7	Vibracore	SC	•		•	•	•	•		•	•	•	•	•
	SMC-21-006	381603.52	2524242.2	8/20/2021	121.1	15.8	564.7	11	12.8	100%	551.9	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	SMC-21-007	381668.02	2524082.85	8/20/2021	116.8	13.7	567.1	8.5	7.8	91.8%	559.3	NE	NE	Vibracore	SC	•		•	•	•	•		•				
	SMC-21-010	381235.069	2524093.765	8/11/2021	74.1	26.1	580.7	2	1.6	80%	579.1	NE	NE	Direct Push	SC	•		•	•	•	•		•				
	SMC-21-011	381193.638	2524155.245	8/11/2021	102.6	0	580.2	2	2	100%	578.2	NE	NE	Direct Push	SC	•		•	•	•	•		•				
West	SMC-21-008	381646.19	2523750.43	8/20/2021	116.8	1	554.7	12.2	13.6	100%	541.1	1.5	553.2	Vibracore	SC	•		•	•	•	•		•	•	•	•	•

Table 3-3
South Menomonee Canal – 2021 Sediment Sampling Summary

Notes:

1. Horizontal Datum: Wisconsin State Plane, South Zone, North American Datum of 1983, U.S. Feet
2. Vertical Datum: International Great Lakes Datum of 1985. Mudline elevations were based on the 2020 bathymetric survey results, with the exception of locations SMC-21-0210 and SMC-21-011. These locations were outside of the survey limits and mudline elevations were estimated using a nearby temporary gauging station installed at the Milwaukee Metropolitan Sewerage District facility dock.
3. For select cores, the recovered sediment length was greater than the core penetration length due to expansion of clay at bottom of the core following removal. Percent recovery was set to 100% to note that the full core length was collected.
4. Native material has previously been defined as a silty clay (CH2M 2019).
5. Six methods of sediment collection were implemented during the 2021 program: Ponar grab, spoon grab, bank sediment via push core, manhole, sediment core via vibracore, and sediment core via direct push.
6. Sediment samples include: surface sediment (SS), bank sediment (BS), manhole or diversion structure sediment (MS), and sediment core (SC).

Abbreviations:

As, Cd, Cr, Cu, Pb, Ni, Zn: arsenic, cadmium, chromium, copper, lead, nickel, zinc

lb/ft^3: pounds per cubic foot

NA: not applicable

NE: not encountered; the native material as described in CH2M 2019 was not encountered

PAH: polycyclic aromatic hydrocarbon

PCB: polychlorinated biphenyl

Table 5-1
Physical Summary

Location ID	Sample ID	Date	Depth Interval (ft bss)	Gravel (percent)	Coarse Sand (percent)	Medium Sand (percent)	Fine Sand (percent)	Silt (percent)	Clay (percent)	Percent Passing 3 inches (3-inch sieve) (percent)	Percent Passing 2 inches (2-inch sieve) (percent)	Percent Passing 1.5 inches (1.5-inch sieve) (percent)	Percent Passing 1 inch (1-inch sieve) (percent)	Percent Passing 0.75 inch (3/4-inch sieve) (percent)	Percent Passing 0.375 inch (3/8-inch sieve) (percent)
Upstream Kinnickinnic River															
KKR-21-003-G	KKR-21-003-G-210811	8/11/2021	0 - 0.3	3.7	5	42.5	37.5	7.8	3.5	100	100	100	100	100	98.3
KKR-21-003-G	FD-202108111530	8/11/2021	0 - 0.3	5.1	4.6	39.7	35.1	11.3	4.2	100	100	100	100	100	100
KKR-21-007-G	KKR-21-007-G-210811	8/11/2021	0 - 0.3	29.8	20	17.6	13.5	15.3	3.8	100	100	100	100	100	83.6
KKR-21-012-G	KKR-21-012-G-210812	8/12/2021	0 - 0.2	0.10 U	0.10 U	14.3	80.5	3.7	1.5	100	100	100	100	100	100
KKR-21-020-G	KKR-21-020-G-210813	8/13/2021	0 - 0.1	75.8	3.7	4.8	10	1.9	3.8	100	100	100	100	69.2	43.7
Kinnickinnic River – Reach 1															
KKM-21-001-G	KKM-21-001-G-210816	8/16/2021	0 - 0.1	34.7	13.9	25.8	17.9	6.5	1.3	100	100	100	100	100	87
KKR-21-032-G	KKR-21-032-G-0.7-02-210810	8/10/2021	0.7 - 2	0.10 U	0.10 U	2.6	6.7	63.8	26.9	100	100	100	100	100	100
KKR-21-039-G	KKR-21-039-G-0.4-1.7-210807	8/7/2021	0.4 - 1.7	0.10 U	0.10 U	2.3	19.9	49.5	28.3	100	100	100	100	100	100
KKR-21-039-G	KKR-21-039-G-1.7-03-210807	8/7/2021	1.7 - 3	0.10 U	0.10 U	1.9	19.1	49.4	29.6	100	100	100	100	100	100
KKR-21-040-G	KKR-21-040-G-0.9-1.8-210810	8/10/2021	0.9 - 1.8	0.10 U	0.4	6.6	20.2	53.2	19.6	100	100	100	100	100	100
KKR-21-045-G	KKR-21-045-G-00-1.3-210808	8/8/2021	0 - 1.3	31.1	11.2	14.2	19.1	15.5	9	100	100	100	100	100	83.4
KKR-21-045-G	FD-202108081120	8/8/2021	0 - 1.3	34.3	11.4	13.6	20.2	12	8.5	100	100	100	100	85.7	76.9
Kinnickinnic River – Reach 2															
KKR-21-051-G	KKR-21-051-G-00-01-210805	8/5/2021	0 - 1	0.10 U	0.7	4.1	21.5	48.6	25.1	100	100	100	100	100	100
KKR-21-051-G	KKR-21-051-G-01-03-210805	8/5/2021	1 - 3	0.10 U	0.4	2.8	6.1	52.7	38	100	100	100	100	100	100
KKR-21-051-G	KKR-21-051-G-03-05-210805	8/5/2021	3 - 5	0.10 U	0.5	2.6	5.2	47.4	44.3	100	100	100	100	100	100
KKR-21-051-G	KKR-21-051-G-05-07-210805	8/5/2021	5 - 7	0.10 U	1.1	4.1	8.9	48.6	37.3	100	100	100	100	100	100
Milwaukee Bay – Nearshore and McKinley Marina															
MKE-21-065-G	MKE-21-065-G-00-01-210818	8/18/2021	0 - 1	0.10 U	0.10 U	1.8	36.3	51	10.9	100	100	100	100	100	100
MKE-21-065-G	MKE-21-065-G-01-03-210818	8/18/2021	1 - 3	0.10 U	0.10 U	0.5	29.3	55	15.2	100	100	100	100	100	100
MKE-21-065-G	MKE-21-065-G-03-05-210818	8/18/2021	3 - 5	1.8	2.2	7.6	13.9	35.4	39.1	100	100	100	100	100	100
MKE-21-065-G	*MKE-21-065-G-05-07-210818*	8/18/2021	5 - 7	0.10 U	2.3	6.1	10.8	42.1	38.7	100	100	100	100	100	100
Milwaukee Bay – North and Summerfest Lagoon															
MKE-21-070-G	MKE-21-070-G-00-1.2-210819	8/19/2021	0 - 1.2	4	2	3.3	61.9	19.3	9.5	100	100	100	100	100	100
MKE-21-070-G	MKE-21-070-G-1.8-3.2-210819	8/19/2021	1.8 - 3.2	0.7	1.2	2.9	42.2	41.6	11.4	100	100	100	100	100	100
MKE-21-070-G	MKE-21-070-G-3.2-5.2-210819	8/19/2021	3.2 - 5.2	0.10 U	0.10 U	2.3	28.3	46.9	22.5	100	100	100	100	100	100
MKE-21-070-G	MKE-21-070-G-5.2-6.2-210819	8/19/2021	5.2 - 6.2	1.2	0.4	1.6	24.3	48.7	23.8	100	100	100	100	100	100
MKE-21-070-G	MKE-21-070-G-6.2-7.5-210819	8/19/2021	6.2 - 7.5	0.1	0.2	1.7	59.1	29.5	9.4	100	100	100	100	100	100
MKE-21-070-G	*MKE-21-070-G-7.5-8.5-210819*	8/19/2021	7.5 - 8.5	0.10 U	0.10 U	0.5	6.1	50.4	43	100	100	100	100	100	100
Milwaukee Bay – South Adjacent to the Port of Milwaukee															
MKE-21-076-G	MKE-21-076-G-00-01-210817	8/17/2021	0 - 1	0.10 U	0.3	1.1	29.1	53.5	16	100	100	100	100	100	100
MKE-21-076-G	MKE-21-076-G-01-2.3-210817	8/17/2021	1 - 2.3	0.10 U	0.1 J	1.1	28	54	16.8	100	100	100	100	100	100
MKE-21-076-G	FD-202108170820	8/17/2021	1 - 2.3	0.10 U	0.4 J	1.5	31.3	49.8	17	100	100	100	100	100	100
MKE-21-076-G	MKE-21-076-G-2.3-3.3-210817	8/17/2021	2.3 - 3.3	9.5	8	19.2	48.1	12.8	2.4	100	100	100	100	100	95
MKE-21-076-G	MKE-21-076-G-3.3-4.4-210817	8/17/2021	3.3 - 4.4	0.10 U	0.10 U	0.2	0.3	76.1	23.4	100	100	100	100	100	100
South Menomonee Canal – East															
SMC-21-004-G	SMC-21-004-G-00-01-210821	8/21/2021	0 - 1	3.5	1.5	5	14.3	56.2	19.5	100	100	100	100	100	100
SMC-21-004-G	SMC-21-004-G-01-2.5-210821	8/21/2021	1 - 2.5	0.10 U	1.2	4.8	15.6	54.1	24.3	100	100	100	100	100	100
SMC-21-004-G	SMC-21-004-G-2.5-04-210821	8/21/2021	2.5 - 4	0.10 U	0.7	3.1	16	68.7	11.5	100	100	100	100	100	100
SMC-21-004-G	SMC-21-004-G-04-06-210821	8/21/2021	4 - 6	0.10 U	2.4	2.6	13.4	64.4	17.2	100	100	100	100	100	100
SMC-21-004-G	SMC-21-004-G-06-08-210821	8/21/2021	6 - 8	0.10 U	0.7	2.9	16.5	48.4	31.5	100	100	100	100	100	100
SMC-21-004-G	SMC-21-004-G-08-8.8-210821	8/21/2021	8 - 8.8	0.10 U	0.5	2.3	11.7	53.7	31.8	100	100	100	100	100	100

Table 5-1
Physical Summary

Location ID	Sample ID	Date	Depth Interval (ft bss)	Gravel (percent)	Coarse Sand (percent)	Medium Sand (percent)	Fine Sand (percent)	Silt (percent)	Clay (percent)	Percent Passing 3 inches (3-inch sieve) (percent)	Percent Passing 2 inches (2-inch sieve) (percent)	Percent Passing 1.5 inches (1.5-inch sieve) (percent)	Percent Passing 1 inch (1-inch sieve) (percent)	Percent Passing 0.75 inch (3/4-inch sieve) (percent)	Percent Passing 0.375 inch (3/8-inch sieve) (percent)
South Menomonee Canal – Middle															
SMC-21-005-G	SMC-21-005-G-00-01-210820	8/20/2021	0 - 1	1.4	0.5	1	5.1	61	31	100	100	100	100	100	100
SMC-21-005-G	SMC-21-005-G-01-2.5-210820	8/20/2021	1 - 2.5	6.9	3.3	7.7	18.9	43.1	20.1	100	100	100	100	100	100
SMC-21-005-G	SMC-21-005-G-2.5-04-210820	8/20/2021	2.5 - 4	6.1	3.4	4.8	19.7	29.9	36.1	100	100	100	100	100	100
SMC-21-005-G	SMC-21-005-G-04-06-210820	8/20/2021	4 - 6	0.10 U	1.2	4.9	21.3	42.8	29.8	100	100	100	100	100	100
SMC-21-005-G	*SMC-21-005-G-6.7-8.7-210820*	8/20/2021	6.7 - 8.7	0.10 U	0.10 U	2.1	3.8	39.3	54.8	100	100	100	100	100	100
SMC-21-005-G	*SMC-21-005-G-8.7-10.7-210820*	8/20/2021	8.7 - 10.7	0.10 U	0.10 U	0.9	2.8	55	41.3	100	100	100	100	100	100
SMC-21-005-G	*SMC-21-005-G-10.7-12.7-210820*	8/20/2021	10.7 - 12.7	0.10 U	0.10 U	1.7	2.9	49.1	46.3	100	100	100	100	100	100
SMC-21-005-G	*FD-202108201505*	8/20/2021	10.7 - 12.7	0.10 U	0.10 U	1.9	3.3	48.5	46.3	100	100	100	100	100	100
South Menomonee Canal – West															
SMC-21-008-G	SMC-21-008-G-1.5-2.5-210821	8/21/2021	1.5 - 2.5	0.10 U	0.10 U	1.8	3.6	33.7	60.9	100	100	100	100	100	100
SMC-21-008-G	*SMC-21-008-G-2.5-04-210821*	8/21/2021	2.5 - 4	0.10 U	0.10 U	1.1	2.7	34.8	61.4	100	100	100	100	100	100
SMC-21-008-G	*SMC-21-008-G-04-06-210821*	8/21/2021	4 - 6	0.10 U	0.10 U	0.7	1.4	38.2	59.7	100	100	100	100	100	100
SMC-21-008-G	*SMC-21-008-G-06-08-210821*	8/21/2021	6 - 8	0.10 U	0.10 U	0.7	1.3	47.1	50.9	100	100	100	100	100	100
SMC-21-008-G	*SMC-21-008-G-08-10-210821*	8/21/2021	8 - 10	0.10 U	0.4	2.2	8.1	51.1	38.2	100	100	100	100	100	100
SMC-21-008-G	*SMC-21-008-G-10.6-12.6-210821*	8/21/2021	10.6 - 12.6	0.10 U	0.10 U	1.9	28.1	39.8	30.2	100	100	100	100	100	100
SMC-21-008-G	*SMC-21-008-G-12.6-13.6-210821*	8/21/2021	12.6 - 13.6	0.10 U	0.10 U	1.5	33.7	44.7	20.1	100	100	100	100	100	100

Note:
1. Sample intervals defined as native material based on visual observations are shown in italics.

Abbreviations:
FD: field duplicate sample
ft bss: feet below sediment surface
U: Compound analyzed for but not detected above detection limit

Table 5-1
Physical Summary

Location ID	Sample ID	Date	Percent Passing 4,750 microns (Sieve #4) (percent)	Percent Passing 2,000 microns (Sieve #10) (percent)	Percent Passing 850 microns (Sieve #20) (percent)	Percent Passing 425 microns (Sieve #40) (percent)	Percent Passing 250 microns (Sieve #60) (percent)	Percent Passing 180 microns (Sieve #80) (percent)	Percent Passing 150 microns (Sieve #100) (percent)	Percent Passing 75 microns (Sieve #200) (percent)	Percent Passing (Hydrometer 1) (percent)	Percent Passing (Hydrometer 2) (percent)	Percent Passing (Hydrometer 3) (percent)
Upstream Kinnickinnic River													
KKR-21-003-G	KKR-21-003-G-210811	8/11/2021	96.3	91.3	77.3	48.8	24.9	17.4	14.7	11.3	6.9	5.7	4.8
KKR-21-003-G	FD-202108111530	8/11/2021	94.9	90.3	77.7	50.6	28.5	21.5	18.8	15.5	8.2	6.4	6
KKR-21-007-G	KKR-21-007-G-210811	8/11/2021	70.2	50.2	39.4	32.6	25.6	22.8	21.4	19.1	8.6	7.3	5.6
KKR-21-012-G	KKR-21-012-G-210812	8/12/2021	100	100	99.5	85.7	29.1	10.3	6.8	5.2	2.5	2	2
KKR-21-020-G	KKR-21-020-G-210813	8/13/2021	24.2	20.5	18.9	15.7	11.8	9.6	8.3	5.7	7.8	6.7	6
Kinnickinnic River – Reach 1													
KKM-21-001-G	KKM-21-001-G-210816	8/16/2021	65.3	51.4	39.4	25.6	18	14.3	11.5	7.7	2.9	2.5	1.7
KKR-21-032-G	KKR-21-032-G-0.7-02-210810	8/10/2021	100	100	99	97.4	96.2	95.3	94.4	90.7	69.3	48.9	39.5
KKR-21-039-G	KKR-21-039-G-0.4-1.7-210807	8/7/2021	100	100	99.2	97.7	95.3	92	89.1	77.8	52.1	47.7	40.2
KKR-21-039-G	KKR-21-039-G-1.7-03-210807	8/7/2021	100	100	99.5	98.1	96.3	93.4	90.4	79	56.2	49.2	40.8
KKR-21-040-G	KKR-21-040-G-0.9-1.8-210810	8/10/2021	100	99.6	95.4	93	89	84.9	82	72.8	44.9	37.5	28.6
KKR-21-045-G	KKR-21-045-G-00-1.3-210808	8/8/2021	68.9	57.7	50.7	43.5	36.1	32	29.6	24.4	17.8	15	12.8
KKR-21-045-G	FD-202108081120	8/8/2021	65.7	54.3	47.5	40.7	33	28.3	25.8	20.5	15.7	13.1	11.8
Kinnickinnic River – Reach 2													
KKR-21-051-G	KKR-21-051-G-00-01-210805	8/5/2021	100	99.3	97.4	95.2	91.9	87.5	83.7	73.7	60	50	37.1
KKR-21-051-G	KKR-21-051-G-01-03-210805	8/5/2021	100	99.6	98.6	96.8	95.6	94.8	94	90.7	79.7	64.9	51.4
KKR-21-051-G	KKR-21-051-G-03-05-210805	8/5/2021	100	99.5	98.4	96.9	95.4	94.2	93.5	91.7	74.2	67.7	56
KKR-21-051-G	KKR-21-051-G-05-07-210805	8/5/2021	100	98.9	97.1	94.8	92.9	91.5	90.4	85.9	77.3	62.5	52.1
Milwaukee Bay – Nearshore and McKinley Marina													
MKE-21-065-G	MKE-21-065-G-00-01-210818	8/18/2021	100	100	99.2	98.2	96.7	95.2	93.1	61.9	29.5	25.9	18.8
MKE-21-065-G	MKE-21-065-G-01-03-210818	8/18/2021	100	100	99.8	99.5	98.5	96.9	94.5	70.2	40.9	37.1	26.5
MKE-21-065-G	MKE-21-065-G-03-05-210818	8/18/2021	98.2	96	92.3	88.4	83.5	80.8	79.3	74.5	64.6	57.3	50
MKE-21-065-G	*MKE-21-065-G-05-07-210818*	8/18/2021	100	97.7	94.7	91.6	87.8	85.6	84.2	80.8	70.8	63.1	51.5
Milwaukee Bay – North and Summerfest Lagoon													
MKE-21-070-G	MKE-21-070-G-00-1.2-210819	8/19/2021	96	94	92.6	90.7	86.3	82.4	78.4	28.8	26.1	20.6	14.5
MKE-21-070-G	MKE-21-070-G-1.8-3.2-210819	8/19/2021	99.3	98.1	97.2	95.2	91.4	88.5	86	53	28.3	19.6	14.5
MKE-21-070-G	MKE-21-070-G-3.2-5.2-210819	8/19/2021	100	100	98.9	97.7	95.4	93.1	91	69.4	56.7	46.3	34.4
MKE-21-070-G	MKE-21-070-G-5.2-6.2-210819	8/19/2021	98.8	98.4	97.6	96.8	94.6	91.7	89.3	72.5	53.6	41.2	32.5
MKE-21-070-G	MKE-21-070-G-6.2-7.5-210819	8/19/2021	99.9	99.7	99.1	98	92.9	86	81.1	38.9	21.9	18.1	13.2
MKE-21-070-G	*MKE-21-070-G-7.5-8.5-210819*	8/19/2021	100	100	99.9	99.5	98.2	97.1	96.1	93.4	66.5	59.6	52.7
Milwaukee Bay – South Adjacent to the Port of Milwaukee													
MKE-21-076-G	MKE-21-076-G-00-01-210817	8/17/2021	100	99.7	99	98.6	96.5	93.2	89.7	69.5	40.2	33.7	27.1
MKE-21-076-G	MKE-21-076-G-01-2.3-210817	8/17/2021	100	99.9	99.4	98.8	97.3	95.1	92.5	70.8	46.9	36.5	28.2
MKE-21-076-G	FD-202108170820	8/17/2021	100	99.6	98.9	98.1	96	93	89.9	66.8	40.4	31	24.5
MKE-21-076-G	MKE-21-076-G-2.3-3.3-210817	8/17/2021	90.5	82.5	74.5	63.3	45.4	36.9	32.6	15.2	5.6	4.2	3.3
MKE-21-076-G	MKE-21-076-G-3.3-4.4-210817	8/17/2021	100	100	99.8	99.8	99.8	99.8	99.8	99.5	76.3	60.8	42.8
South Menomonee Canal – East													
SMC-21-004-G	SMC-21-004-G-00-01-210821	8/21/2021	96.5	95	92.9	90	85.6	82.7	81	75.7	63.1	56.3	33.1
SMC-21-004-G	SMC-21-004-G-01-2.5-210821	8/21/2021	100	98.8	96.5	94	90.3	87.3	85.1	78.4	72.2	60.2	49.9
SMC-21-004-G	SMC-21-004-G-2.5-04-210821	8/21/2021	100	99.3	98.1	96.2	93	90.3	88	80.2	69.3	61.1	33.5
SMC-21-004-G	SMC-21-004-G-04-06-210821	8/21/2021	100	97.6	96.7	95	92.4	90.1	88.3	81.6	70.5	57.2	27.2
SMC-21-004-G	SMC-21-004-G-06-08-210821	8/21/2021	100	99.3	98.2	96.4	93.1	90	87	79.9	59.1	49.9	48.1
SMC-21-004-G	SMC-21-004-G-08-8.8-210821	8/21/2021	100	99.5	98.1	97.2	95.1	92.7	91.1	85.5	66.2	60.2	45.3

Table 5-1
Physical Summary

Location ID	Sample ID	Date	Percent Passing 4,750 microns (Sieve #4) (percent)	Percent Passing 2,000 microns (Sieve #10) (percent)	Percent Passing 850 microns (Sieve #20) (percent)	Percent Passing 425 microns (Sieve #40) (percent)	Percent Passing 250 microns (Sieve #60) (percent)	Percent Passing 180 microns (Sieve #80) (percent)	Percent Passing 150 microns (Sieve #100) (percent)	Percent Passing 75 microns (Sieve #200) (percent)	Percent Passing (Hydrometer 1) (percent)	Percent Passing (Hydrometer 2) (percent)	Percent Passing (Hydrometer 3) (percent)
South Menomonee Canal – Middle													
SMC-21-005-G	SMC-21-005-G-00-01-210820	8/20/2021	98.6	98.1	97.6	97.1	96.1	95.2	94.3	92	66.3	60.1	47.9
SMC-21-005-G	SMC-21-005-G-01-2.5-210820	8/20/2021	93.1	89.8	86.4	82.1	72.3	68.3	66.9	63.2	43.5	36.8	29.3
SMC-21-005-G	SMC-21-005-G-2.5-04-210820	8/20/2021	93.9	90.5	88.5	85.7	77.1	72.1	70.4	66	61.1	55.7	48.6
SMC-21-005-G	SMC-21-005-G-04-06-210820	8/20/2021	100	98.8	97.2	93.9	86.4	82.1	79.6	72.6	60.8	53.1	42.2
SMC-21-005-G	*SMC-21-005-G-6.7-8.7-210820*	8/20/2021	100	100	98.5	97.9	96.7	95.7	95.3	94.1	85.9	80	70.3
SMC-21-005-G	*SMC-21-005-G-8.7-10.7-210820*	8/20/2021	100	100	99.6	99.1	98.4	97.8	97.2	96.3	71.7	64.5	57.4
SMC-21-005-G	*SMC-21-005-G-10.7-12.7-210820*	8/20/2021	100	100	98.8	98.3	97.4	96.6	96.3	95.4	79.6	68.5	59
SMC-21-005-G	*FD-202108201505*	8/20/2021	100	100	98.7	98.1	97.1	96.2	95.9	94.8	74.6	69.3	60.4
South Menomonee Canal – West													
SMC-21-008-G	SMC-21-008-G-1.5-2.5-210821	8/21/2021	100	100	99.1	98.2	96.8	96.2	95.7	94.6	83.6	79.8	76
SMC-21-008-G	*SMC-21-008-G-2.5-04-210821*	8/21/2021	100	100	99	98.9	98.3	97.6	97.3	96.2	86.4	79.3	73.9
SMC-21-008-G	*SMC-21-008-G-04-06-210821*	8/21/2021	100	100	99.3	99.3	99.1	98.7	98.5	97.9	83.1	81.7	70.7
SMC-21-008-G	*SMC-21-008-G-06-08-210821*	8/21/2021	100	100	99.6	99.3	99	98.9	98.7	98	82.7	77.7	67.6
SMC-21-008-G	*SMC-21-008-G-08-10-210821*	8/21/2021	100	99.6	98.2	97.4	96	94.3	93.2	89.3	73.3	67.9	54.4
SMC-21-008-G	*SMC-21-008-G-10.6-12.6-210821*	8/21/2021	100	100	98.9	98.1	94.1	87.7	83.1	70	53.1	45.1	39.3
SMC-21-008-G	*SMC-21-008-G-12.6-13.6-210821*	8/21/2021	100	100	99.6	98.5	92	84.4	79.2	64.8	41.6	32.4	26.3

Note:
1. Sample intervals defined as native material based on visual observations are shown in italics.

Abbreviations:
FD: field duplicate sample
ft bss: feet below sediment surface
U: Compound analyzed for but not detected above detection limit

Table 5-1
Physical Summary

Location ID	Sample ID	Date	Percent Passing (Hydrometer 4) (percent)	Percent Passing (Hydrometer 5) (percent)	Percent Passing (Hydrometer 6) (percent)	Percent Passing (Hydrometer 7) (percent)
Upstream Kinnickinnic River						
KKR-21-003-G	KKR-21-003-G-210811	8/11/2021	3.9	3.5	3.1	1.8
KKR-21-003-G	FD-202108111530	8/11/2021	5.1	4.2	3.3	1.9
KKR-21-007-G	KKR-21-007-G-210811	8/11/2021	4.5	3.8	3.2	1.8
KKR-21-012-G	KKR-21-012-G-210812	8/12/2021	2	1.5	1.1	0.6
KKR-21-020-G	KKR-21-020-G-210813	8/13/2021	4.9	3.8	3	2.3
Kinnickinnic River – Reach 1						
KKM-21-001-G	KKM-21-001-G-210816	8/16/2021	1.7	1.3	0.9	0.5
KKR-21-032-G	KKR-21-032-G-0.7-02-210810	8/10/2021	33.2	26.9	20.7	12.8
KKR-21-039-G	KKR-21-039-G-0.4-1.7-210807	8/7/2021	32.6	28.3	21.8	15.3
KKR-21-039-G	KKR-21-039-G-1.7-03-210807	8/7/2021	33.8	29.6	22.6	18.4
KKR-21-040-G	KKR-21-040-G-0.9-1.8-210810	8/10/2021	22.6	19.6	13.7	9.2
KKR-21-045-G	KKR-21-045-G-00-1.3-210808	8/8/2021	10.1	9	6.7	4.5
KKR-21-045-G	FD-202108081120	8/8/2021	9.8	8.5	6.6	4.6
Kinnickinnic River – Reach 2						
KKR-21-051-G	KKR-21-051-G-00-01-210805	8/5/2021	31.1	25.1	18.1	15.1
KKR-21-051-G	KKR-21-051-G-01-03-210805	8/5/2021	44.7	38	27.2	21.8
KKR-21-051-G	KKR-21-051-G-03-05-210805	8/5/2021	49.5	44.3	31.4	23.6
KKR-21-051-G	KKR-21-051-G-05-07-210805	8/5/2021	43.2	37.3	26.9	21
Milwaukee Bay – Nearshore and McKinley Marina						
MKE-21-065-G	MKE-21-065-G-00-01-210818	8/18/2021	14.5	10.9	7.3	5.1
MKE-21-065-G	MKE-21-065-G-01-03-210818	8/18/2021	19.6	15.2	11.4	8.3
MKE-21-065-G	MKE-21-065-G-03-05-210818	8/18/2021	43.9	39.1	29.4	22.1
MKE-21-065-G	*MKE-21-065-G-05-07-210818*	8/18/2021	43.8	38.7	29.7	22
Milwaukee Bay – North and Summerfest Lagoon						
MKE-21-070-G	MKE-21-070-G-00-1.2-210819	8/19/2021	12.3	9.5	7.3	5.1
MKE-21-070-G	MKE-21-070-G-1.8-3.2-210819	8/19/2021	12.7	11.4	7.6	5.8
MKE-21-070-G	MKE-21-070-G-3.2-5.2-210819	8/19/2021	29.9	22.5	16.6	10.6
MKE-21-070-G	MKE-21-070-G-5.2-6.2-210819	8/19/2021	27.5	23.8	17.6	12.6
MKE-21-070-G	MKE-21-070-G-6.2-7.5-210819	8/19/2021	11	9.4	7.2	5
MKE-21-070-G	*MKE-21-070-G-7.5-8.5-210819*	8/19/2021	48.5	43	36.1	26.4
Milwaukee Bay – South Adjacent to the Port of Milwaukee						
MKE-21-076-G	MKE-21-076-G-00-01-210817	8/17/2021	22.5	16	13.2	9.3
MKE-21-076-G	MKE-21-076-G-01-2.3-210817	8/17/2021	22	16.8	13.7	9.3
MKE-21-076-G	FD-202108170820	8/17/2021	20.7	17	11.4	7.5
MKE-21-076-G	MKE-21-076-G-2.3-3.3-210817	8/17/2021	2.8	2.4	1.9	1.8
MKE-21-076-G	MKE-21-076-G-3.3-4.4-210817	8/17/2021	32.4	23.4	18.3	14.2
South Menomonee Canal – East						
SMC-21-004-G	SMC-21-004-G-00-01-210821	8/21/2021	25	19.5	16.3	12.2
SMC-21-004-G	SMC-21-004-G-01-2.5-210821	8/21/2021	29.4	24.3	17.4	14
SMC-21-004-G	SMC-21-004-G-2.5-04-210821	8/21/2021	14.2	11.5	8.3	6.9
SMC-21-004-G	SMC-21-004-G-04-06-210821	8/21/2021	20.5	17.2	13.3	10
SMC-21-004-G	SMC-21-004-G-06-08-210821	8/21/2021	38.9	31.5	22.4	15
SMC-21-004-G	SMC-21-004-G-08-8.8-210821	8/21/2021	39.3	31.8	23.9	16.4

Table 5-1
Physical Summary

Location ID	Sample ID	Date	Percent Passing (Hydrometer 4) (percent)	Percent Passing (Hydrometer 5) (percent)	Percent Passing (Hydrometer 6) (percent)	Percent Passing (Hydrometer 7) (percent)
South Menomonee Canal – Middle						
SMC-21-005-G	SMC-21-005-G-00-01-210820	8/20/2021	38.6	31	21.8	15.6
SMC-21-005-G	SMC-21-005-G-01-2.5-210820	8/20/2021	24.3	20.1	15.1	11
SMC-21-005-G	SMC-21-005-G-2.5-04-210820	8/20/2021	43.2	36.1	27.1	18.2
SMC-21-005-G	SMC-21-005-G-04-06-210820	8/20/2021	36	29.8	23.6	17.3
SMC-21-005-G	*SMC-21-005-G-6.7-8.7-210820*	8/20/2021	62.5	54.8	43.1	33.4
SMC-21-005-G	*SMC-21-005-G-8.7-10.7-210820*	8/20/2021	48.5	41.3	32.4	23.5
SMC-21-005-G	*SMC-21-005-G-10.7-12.7-210820*	8/20/2021	54.2	46.3	35.2	25.7
SMC-21-005-G	*FD-202108201505*	8/20/2021	53.4	46.3	35.7	26.8
South Menomonee Canal – West						
SMC-21-008-G	SMC-21-008-G-1.5-2.5-210821	8/21/2021	68.5	60.9	49	33.9
SMC-21-008-G	*SMC-21-008-G-2.5-04-210821*	8/21/2021	68.6	61.4	50.1	34
SMC-21-008-G	*SMC-21-008-G-04-06-210821*	8/21/2021	66.6	59.7	48.2	34.4
SMC-21-008-G	*SMC-21-008-G-06-08-210821*	8/21/2021	60.9	50.9	40.2	28.5
SMC-21-008-G	*SMC-21-008-G-08-10-210821*	8/21/2021	46.3	38.2	25.6	18.9
SMC-21-008-G	*SMC-21-008-G-10.6-12.6-210821*	8/21/2021	34.7	30.2	22.9	17.2
SMC-21-008-G	*SMC-21-008-G-12.6-13.6-210821*	8/21/2021	23.2	20.1	16.1	11.5

Note:
1. Sample intervals defined as native material based on visual observations are shown in italics.

Abbreviations:
FD: field duplicate sample
ft bss: feet below sediment surface
U: Compound analyzed for but not detected above detection limit

Table 5-2
Analytical Results for Oil and Grease

Location ID	Sample ID	Date	Depth Interval (ft bss)	Oil and Grease (HEM) (mg/kg)
Kinnickinnic River – Reach 4				
KKR-21-058	KKR-21-058-00-01-210819	8/19/2021	0 - 1	**2,190**
KKR-21-058	KKR-21-058-01-03-210819	8/19/2021	1 - 3	**2,010**
KKR-21-058	KKR-21-058-03-4.2-210819	8/19/2021	3 - 4.2	**563**
KKR-21-059	KKR-21-059-00-01-210820	8/20/2021	0 - 1	**775 J-**
KKR-21-059	KKR-21-059-01-03-210820	8/20/2021	1 - 3	**1,080 J-**
KKR-21-059	KKR-21-059-03-04-210820	8/20/2021	3 - 4	**1,430 J-**
KKR-21-060	KKR-21-060-00-01-210820	8/20/2021	0 - 1	**505 J-**
KKR-21-060	KKR-21-060-01-03-210820	8/20/2021	1 - 3	**601 J-**
KKR-21-060	FD-202108200805	8/20/2021	1 - 3	**2,340 J-**
KKR-21-060	KKR-21-060-03-05-210820	8/20/2021	3 - 5	**249 J-**
KKR-21-060	KKR-21-060-05-07-210820	8/20/2021	5 - 7	**241 J-**
KKR-21-060	KKR-21-060-07-09-210820	8/20/2021	7 - 9	**147 J-**
KKR-21-060	KKR-21-060-09-10-210820	8/20/2021	9 - 10	**166 J**
KKR-21-061	KKR-21-061-00-01-210820	8/20/2021	0 - 1	**2,900**
KKR-21-061	KKR-21-061-01-03-210820	8/20/2021	1 - 3	**4,790**
KKR-21-061	KKR-21-061-03-05-210820	8/20/2021	3 - 5	**5,470**
KKR-21-061	KKR-21-061-05-07-210820	8/20/2021	5 - 7	**3,810**
KKR-21-061	KKR-21-061-07-09-210820	8/20/2021	7 - 9	**6,760**
KKR-21-061	KKR-21-061-09-10-210820	8/20/2021	9 - 10	**3,470**

Note:
Bold: detected result

Abbreviations:
FD: field duplicate sample
ft bss: feet below sediment surface
HEM: n-hexane extractable material
J: indicates an estimated value
mg/kg: milligrams per kilogram

Table 5-3
Analytical Results for Metals

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
					7440-38-2	7440-43-9	7440-47-3	7440-50-8	7439-92-1	7439-97-6	7440-02-0	7440-66-6
				PEC	33	5	110	150	130	1.1	49	460
				3 x PEC	99	15	330	450	390	3.3	147	1380
				5 x PEC	165	25	550	750	650	5.5	245	2300
Upstream Kinnickinnic River												
KKR-21-001	KKR-21-001-210811	8/11/2021	0 - 0.3		**4.7**	**0.094**	**16.4 J**	**18.6**	**10.1**	0.013 U	**21.8**	**41.5**
KKR-21-002	KKR-21-002-210813	8/13/2021	0 - 0.1		**2**	**0.16**	**10**	**13**	**20.9**	0.014 U	**7.4**	**54.6**
KKR-21-003	KKR-21-003-210811	8/11/2021	0 - 0.3		**3.7**	**0.16**	**13.8 J**	**19**	**18.0 J**	0.014 U	**11.7**	**83.3 J**
KKR-21-004	KKR-21-004-00-0.6-210811	8/12/2021	0 - 0.6		**3**	**0.33**	**10.5 J**	**12**	**36.9 J**	0.012 U	**10.4**	**89.3**
KKR-21-004	KKR-21-004-0.6-1.3-210811	8/12/2021	0.6 - 1.3		**3.3**	**0.25**	**14.6 J**	**15.9**	**35.3 J**	0.013 U	**12.7**	**69.2 J**
KKR-21-005	KKR-21-005-00-0.5-210812	8/12/2021	0 - 0.5		**3.7**	**0.094**	**17.9 J**	**20.2**	**10.2 J**	0.012 U	**24.2**	**41.5 J**
KKR-21-006	KKR-21-006-00-0.4-210812	8/12/2021	0 - 0.4		**4.3**	**0.12**	**15.5 J**	**16.7**	**10.6**	0.013 U	**18.8**	**42.2 J**
KKR-21-007	FD-202108110815	8/11/2021	0 - 0.3		**3.7**	**0.1**	**8.2 J**	**11.1**	**15.3 J**	0.013 U	**9.7**	**37.0 J**
KKR-21-007	KKR-21-007-210811	8/11/2021	0 - 0.3		**3.5**	**0.11**	**8.9 J**	**10.6**	**13.9 J**	0.014 U	**10**	**33.4 J**
KKR-21-008	KKR-21-008-210811	8/11/2021	0 - 0.3		**2.5**	**0.34**	**20.6 J**	**25.5**	**45.1 J**	**0.015 J**	**11.7**	**148 J**
KKR-21-009	KKR-21-009-210811	8/11/2021	0 - 0.3		**1.8**	**0.15**	**8.7 J**	**15**	**15.2 J**	0.013 U	**7.9**	**56.2 J**
KKR-21-010	KKR-21-010-00-0.1-210812	8/12/2021	0 - 0.1		**2.9**	**0.29**	**5.0 J**	**11.2**	**8.2**	0.014 U	**7.7**	**80.3**
KKR-21-010	FD-202108121455	8/12/2021	0 - 0.1		**2.5**	**0.28**	**4.4 J**	**9.9**	**7.6 J**	0.014 U	**6.8**	**75.9 J**
KKR-21-011	KKR-21-011-00-0.2-210812	8/12/2021	0 - 0.2		**1.3**	**0.29**	**63.8 J**	**19.8**	**58.8 J**	0.016 U	**7.6**	**138.0 J**
KKR-21-012	KKR-21-012-00-0.2-210812	8/12/2021	0 - 0.2		**1.3**	**0.14**	**12.9 J**	**7.8**	**12.4 J**	0.013 U	**5.8**	**52.7 J**
KKR-21-013	KKR-21-013-00-0.1-210813	8/13/2021	0 - 0.1		**3.4**	**0.17**	**13.9**	**13.1**	**14.5**	0.012 U	**13.7**	**86.1**
KKR-21-014	KKR-21-014-00-0.25-210812	8/12/2021	0 - 0.25		**2.3**	**0.86**	**16.0 J**	**24.3**	**77.1 J**	0.014 U	**7.6**	**225.0 J**
KKR-21-015	KKR-21-015-00-0.25-210812	8/12/2021	0 - 0.25		**1.7**	**0.12**	**7.50 J**	**11.8**	**12.0 J**	0.012 U	**6.1**	**63.9 J**
KKR-21-016	KKR-21-016-00-0.2-210812	8/12/2021	0 - 0.2		**1.8**	**0.21**	**33.1 J**	**14.4**	**97.8 J**	0.016 U	**7.3**	**94.9 J**
KKR-21-016	FD-202108121430	8/12/2021	0 - 0.2		**1.9**	**0.21**	**13.3 J**	**19.1**	**20.5 J**	0.016 U	**8.1**	**128. J**
KKR-21-017	KKR-21-017-00-0.1-210813	8/13/2021	0 - 0.1		**3.4**	**0.42**	**35**	**44.7**	**59**	**0.032 J**	**16**	**294**
KKR-21-018	KKR-21-018-00-0.3-210812	8/12/2021	0 - 0.3		**2.2**	**0.54**	**23.7 J**	**21.3**	**12.9 J**	0.013 U	**10.7**	**186. J**
KKR-21-019	KKR-21-019-210813	8/13/2021	0 - 0.1		**3.5**	**1.3**	**33.2**	**50**	**146**	**0.85**	**16.7**	**320**
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1		**4.8**	**2.9**	**40**	**50.7**	**158**	**0.26**	**17.1**	**341**
KKR-21-021	KKR-21-021-210813	8/13/2021	0 - 0.1		**2.5**	**0.43**	**37.1**	**33.4**	**50.8**	**0.063**	**22.7**	**155**
Kinnickinnic River – Reach 1												
KKR-21-024	KKR-21-024-00-0.5-210806	8/6/2021	0 - 0.5		**5.7**	**1.6**	**31.9**	**49.1**	**181**	**0.11**	**19.2**	**247**
KKR-21-024	KKR-21-024-0.5-1.25-210806	8/6/2021	0.5 - 1.25		**3.9**	**0.77**	**18.2**	**21**	**66.3**	**0.052**	**15.1**	**116**
KKR-21-025	KKR-21-025-00-01-210806	8/6/2021	0 - 1		**5.8**	**2.8**	**61.9**	**251**	**1,150**	**0.28**	**27.6**	**506**
KKR-21-026	KKR-21-026-0.2-01-210806	8/6/2021	0.2 - 1		**7.9**	**9.8**	**92.9**	**91**	**419**	**0.31**	**26.2**	**574**
KKR-21-026	KKR-21-026-01-1.7-210806	8/6/2021	1 - 1.7		**8**	**10.8**	**116**	**95.5**	**564**	**0.28**	**28.1**	**703**
KKR-21-028	KKR-21-028-00-0.8-210806	8/6/2021	0 - 0.8		**6.1**	**1.1**	**30.7**	**44.1**	**199**	**0.11**	**18.1**	**167**
KKR-21-028	FD-202108061200	8/6/2021	0 - 0.8		**5.1**	**1.3**	**26.4**	**45.7**	**193**	**0.11**	**16.6**	**183**
KKR-21-029	KKR-21-029-210810	8/10/2021	0 - 0.3		**5.8**	**1.4**	**48.5**	**95.6**	**123**	**0.073 J+**	**26.8**	**585**
KKR-21-031	KKR-21-031-210810	8/10/2021	0 - 0.3		**1.6**	**0.43**	**7.3**	**9.6**	**18.6**	**0.025 J**	**6.6**	**86.6**
KKR-21-032	KKR-21-032-00-0.7-210810	8/10/2021	0 - 0.7		**8.8**	**6.6**	**97.5**	**122**	**774**	**0.36 J**	**36.8**	**857**
KKR-21-032	KKR-21-032-0.7-02-210810	8/10/2021	0.7 - 2		**5.2**	**1.3**	**44.1**	**83.7**	**106**	**0.12 J**	**24.8**	**463**
KKR-21-033	KKR-21-033-00-0.4-210810	8/10/2021	0 - 0.4		**4.1**	**1.2**	**35**	**59.1**	**140**	**0.13 J**	**18.8**	**335**
KKR-21-033	KKR-21-033-0.4-1.2-210810	8/10/2021	0.4 - 1.2		**7**	**5.1**	**80.9**	**81.8**	**870**	**0.42 J**	**26.5**	**828**
KKR-21-033	FR-202108101135	8/10/2021	0.4 - 1.2		**7.4**	**4.1**	**67.7**	**77.4**	**639**	**0.41 J**	**25.5**	**653**
KKR-21-034	KKR-21-034-00-1.0-210808	8/8/2021	0 - 1		**6.5**	**3.7**	**94.2**	**79.2**	**615**	**0.21 J+**	**27.4**	**510**
KKR-21-034	KKR-21-034-01-1.2-210808	8/8/2021	1 - 1.2		**3.5**	**1.6**	**33.7**	**26**	**176**	**0.065 J+**	**15.5**	**143**

Table 5-3
Analytical Results for Metals

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Arsenic (mg/kg) 7440-38-2 33 99 165	Cadmium (mg/kg) 7440-43-9 5 15 25	Chromium (mg/kg) 7440-47-3 110 330 550	Copper (mg/kg) 7440-50-8 150 450 750	Lead (mg/kg) 7439-92-1 130 390 650	Mercury (mg/kg) 7439-97-6 1.1 3.3 5.5	Nickel (mg/kg) 7440-02-0 49 147 245	Zinc (mg/kg) 7440-66-6 460 1380 2300
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1		10.4	7.6	124	104	771	0.97	30.1	612
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3		8.6	4.9	75.1	80.2	519	0.4 J+	29.9	398
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5		16.2	12.2	151	114	598	0.54 J+	38	709
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8		14.8	10.3	215	128	475	0.58 J+	39.2	817
KKR-21-036	KKR-21-036-00-0.8-210810	8/10/2021	0 - 0.8		5.1	2	48.9	99	159	0.16 J	30.6	499
KKR-21-036	KKR-21-036-0.8-1.2-210810	8/10/2021	0.8 - 1.2		5.4	1.8	47.9	101	216	0.25 J	29.3	467
KKR-21-036	FD-202108101200	8/10/2021	0.8 - 1.2		5	1.9	46.5	99.2	213	0.25 J	29.2	453
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1		9.1	11.3	89.8	97.2	571	0.66 J+	29.8	579
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3		11.8	14.2	109	113	720	1.4 J+	34.3	740
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5		22.7	12	151	128	756	0.83 J+	42.4	771
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5		13.7	10	148	122	514	0.49 J+	40	619
KKR-21-038	KKR-21-038-00-01-210807	8/7/2021	0 - 1		10.6	16.7	117	122	617	0.61 J+	36.4	707
KKR-21-038	KKR-21-038-01-03-210807	8/7/2021	1 - 3		2.6 J	2.0 J	19.7 J	20.9 J	68.7 J	0.041 J	10.8 J	123 J
KKR-21-038	FD-202108071010	8/7/2021	1 - 3		10.5 J	18.6 J	125.0 J	122.0 J	652 J	0.62 J	37.6 J	766 J
KKR-21-038	KKR-21-038-03-4.9-210807	8/7/2021	3 - 4.9		13.6	10.2	93.1 J	124.0 J	842	0.63 J+	42.9	728
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4		4.5	2.6	51.0 J	80.6 J	243	0.38 J+	21.4	358
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7		9.5	6.6	123.0 J	107.0 J	740	0.95 J+	30.6	535
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3		7.2	3.9	59.3 J	65.2 J	335	0.33 J+	26.1	302
KKR-21-040	KKR-21-040-00-0.9-210810	8/10/2021	0 - 0.9		5.8	2.6	54.2	117	254	0.23 J	34.2	548
KKR-21-040	KKR-21-040-0.9-1.8-210810	8/10/2021	0.9 - 1.8		5.1	1.4	45	85.6	116	0.11 J	26.1	463
KKR-21-041	KKR-21-041-00-1.3-210807	8/7/2021	0 - 1.3		2.2	1	15.8 J	33.5 J	82.7	0.045 J+	11	160
KKR-21-041	KKR-21-041-1.3-2.3-210807	8/7/2021	1.3 - 2.3		5.3	2.8	32.8 J	44.9 J	258	0.18 J+	20.1	216
KKR-21-042	KKR-21-042-00-0.9-210808	8/8/2021	0 - 0.9		7.3	0.57	17.4 J	32.2 J	258	0.031 J+	29.6	182
KKR-21-042	FR-202108081210	8/8/2021	0 - 0.9		7.3	0.37	18.3	25.2	71.9	0.028	28.9	105
KKR-21-043	KKR-21-043-00-01-210807	8/7/2021	0 - 1		3.2	1.2	17.9	81.9 J	38.1 J	0.036 J+	13.9	153
KKR-21-043	KKR-21-043-01-03-210807	8/7/2021	1 - 3		5.3	6	39.8	49.6 J	222.0 J	0.21 J+	19.5	332
KKR-21-043	KKR-21-043-03-05-210807	8/7/2021	3 - 5		14.2	9.1	136	116.0 J	509.0 J	0.52 J+	37.8	704
KKR-21-043	KKR-21-043-05-5.9-210807	8/7/2021	5 - 5.9		18.7	10.8	157	120.0 J	459.0 J	0.58 J+	40.4	764
KKR-21-044	KKR-21-044-0.2-0.9-210808	8/8/2021	0.2 - 0.9		7.7	0.5	16.4	24.1 J	122.0 J	0.075 J+	28	113
KKR-21-044	KKR-21-044-0.9-1.1-210808	8/8/2021	0.9 - 1.1		7.4	2.9	48.3 J	93.7 J	347	4.4 J+	34.4	641
KKR-21-045	KKR-21-045-00-1.3-210808	8/8/2021	0 - 1.3		5.6	1.2	17.5	36.3 J	134.0 J	0.39 J+	11.8	179
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3		3.3	1.5	17.4	22.0 J	88.4 J	0.45 J+	11.7	243
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8		7.1	4.2	51.2	58.9 J	270.0 J	0.49 J+	24	324
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4		8.6	8	67	84.5	407	0.33	29.2	526
KKR-21-048	KKR-21-048-00-01-210808	8/8/2021	0 - 1		2.4	0.77	25.8	25.7	36.1	0.021	11.1	186
KKR-21-048	KKR-21-048-01-1.8-210808	8/8/2021	1 - 1.8		2.4	1.4	12.8	18	25.7	0.02	10.2	128
KKR-21-049	KKR-21-049-00-0.8-210808	8/8/2021	0 - 0.8		2.4	1.6	20	27.6	74.5	0.047	13	258
KKR-21-049	KKR-21-049-0.8-03-210808	8/8/2021	0.8 - 3		15.4	9.9	143	112	435	0.64	37.8	781
KKR-21-049	KKR-21-049-03-4.4-210808	8/8/2021	3 - 4.4		15.9	24.1	191	188	362	0.61	39	1,150
KKR-21-049	FD-202108080940	8/8/2021	3 - 4.4		16.4	21.9	237	186	353	0.8	43	1,100
KKR-21-050	KKR-21-050-00-01-210808	8/8/2021	0 - 1		6.1	1.7	46.1	82.7	138	0.15	24.7	436
KKR-21-050	KKR-21-050-01-03-210808	8/8/2021	1 - 3		8.5	8.3	125	134	829	0.46	37.6	1,070
KKR-21-050	KKR-21-050-03-05-210808	8/8/2021	3 - 5		10.2	6.7	103	88.9	651	0.66	31.2	630
KKR-21-050	KKR-21-050-05-6.8-210808	8/8/2021	5 - 6.8		8.4	4.1	62.8	68.1	382	0.35	27.3	382
KKM-21-001	KKM-21-001-210816	8/16/2021	0 - 0.1		2.1	0.24	50.1	37.8	63.2	0.13	12	131
KKM-21-003	KKM-21-003-210816	8/16/2021	0 - 0.1		3.9	1.1	33	66	88.7	0.072	19.4	289

Table 5-3
Analytical Results for Metals

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Arsenic (mg/kg) 7440-38-2 33 99 165	Cadmium (mg/kg) 7440-43-9 5 15 25	Chromium (mg/kg) 7440-47-3 110 330 550	Copper (mg/kg) 7440-50-8 150 450 750	Lead (mg/kg) 7439-92-1 130 390 650	Mercury (mg/kg) 7439-97-6 1.1 3.3 5.5	Nickel (mg/kg) 7440-02-0 49 147 245	Zinc (mg/kg) 7440-66-6 460 1380 2300
KKM-21-004	KKM-21-004-210816	8/16/2021	0 - 0.1		**5**	**1.5**	**82.6**	**530**	**435**	**0.53**	**43.4**	**971**
KKM-21-005	KKM-21-005-210816	8/16/2021	0 - 0.1		**2**	**0.17**	**24.4**	**25.6**	**23.7**	0.012 U	**11.8**	**94.6**
Kinnickinnic River – Reach 2												
KKR-21-051	KKR-21-051-00-01-210805	8/5/2021	0 - 1		**9.1**	**5.3**	**88.6 J**	**118**	**470**	**0.34**	**38.9**	**732**
KKR-21-051	KKR-21-051-01-03-210805	8/5/2021	1 - 3		**13**	**11.7**	**926.0 J**	**122**	**1,210**	**0.45**	**41.6**	**1,230**
KKR-21-051	KKR-21-051-03-05-210805	8/5/2021	3 - 5		**18.5**	**18.8**	**209.0 J**	**147**	**494**	**1.4**	**36**	**929**
KKR-21-051	KKR-21-051-05-07-210805	8/5/2021	5 - 7		**16.7**	**5.7**	**538.0 J**	**212**	**509**	**4.1**	**35.3**	**1,040**
KKR-21-052	KKR-21-052-00-01-210805	8/5/2021	0 - 1		**6.1**	**1.6**	**67.2 J**	**96.1**	**127**	**0.17**	**26.6**	**426**
KKR-21-052	KKR-21-052-01-03-210805	8/5/2021	1 - 3		**10.4**	**15.4**	**510.0 J**	**99.8**	**977**	**0.52**	**32.8**	**995**
KKR-21-052	KKR-21-052-03-05-210805	8/5/2021	3 - 5		**13.9**	**4.3**	**239.0 J**	**122**	**470**	**1.7**	**32.1**	**559**
KKR-21-052	KKR-21-052-05-07-210805	8/5/2021	5 - 7		**9.7**	**1.1**	**205.0 J**	**128**	**213**	**2**	**22.6**	**346**
KKR-21-053	KKR-21-053-00-01-210805	8/5/2021	0 - 1		**20.9**	**25.4**	**207.0 J**	**572**	**504**	**1.2**	**36.9**	**1,130**
KKR-21-053	KKR-21-053-01-03-210805	8/5/2021	1 - 3		**15.3**	**5.9**	**226.0 J**	**136**	**590**	**1.4**	**34.6**	**651**
KKR-21-053	KKR-21-053-03-05-210805	8/5/2021	3 - 5		**17.5**	**5.9**	**688.0 J**	**264**	**590**	**5.9**	**37.1**	**1,130**
Kinnickinnic River – Reach 3												
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9		**12.2**	**3.2**	**84.6**	**248**	**201**	**0.13**	**27**	**682**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25		**20.4**	**7.3**	**132**	**205**	**247**	**0.27 J**	**34.3**	**743**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85		**12**	**3.5**	**166**	**258**	**166**	**0.14**	**36.9**	**622**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1		**17.3**	**4.1**	**180**	**233**	**223**	**0.36**	**36.8**	**826**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9		**16.1**	**7.7**	**694**	**346**	**494**	**0.63**	**67.4**	**991**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9		**19**	**9.5**	**710**	**408**	**592**	**0.59**	**80.3**	**1,150**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1		**16.5**	**7.6**	**552**	**299**	**467**	**0.58**	**58.5**	**956**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3		**25.3**	**10**	**736**	**469**	**593**	**0.88**	**79.5**	**1,160**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3		**39.2**	**30.2**	**1,790**	**367**	**653**	**1.7**	**33.7**	**1,630**
Kinnickinnic River – Reach 4												
KKR-21-058	KKR-21-058-00-01-210819	8/19/2021	0 - 1		**14.6**	**10.5**	**409**	**157**	**458.0 J**	**0.63**	**45.2**	**650**
KKR-21-058	KKR-21-058-01-03-210819	8/19/2021	1 - 3		**30.4**	**15.6**	**451**	**170**	**437.0 J**	**0.87**	**47.1**	**848**
KKR-21-058	KKR-21-058-03-4.2-210819	8/19/2021	3 - 4.2		**26.5**	**13.7**	**361**	**142**	**375.0 J**	**1.7**	**47.8**	**748**
KKR-21-059	KKR-21-059-00-01-210820	8/20/2021	0 - 1		**11.1**	**4.5**	**217. J**	**134**	**214**	**0.47**	**34**	**500**
KKR-21-059	KKR-21-059-01-03-210820	8/20/2021	1 - 3		**12.4**	**8.1**	**422 J**	**137**	**359**	**0.65**	**36.8**	**567**
KKR-21-059	KKR-21-059-03-04-210820	8/20/2021	3 - 4		**18.5**	**13.3**	**661 J**	**170**	**604**	**0.71**	**51.9**	**796**
KKR-21-060	KKR-21-060-00-01-210820	8/20/2021	0 - 1		**10.5**	**4.4**	**239 J**	**97.8**	**335**	**0.44**	**30.3**	**428**
KKR-21-060	KKR-21-060-01-03-210820	8/20/2021	1 - 3		**24.3**	**11.2**	**257 J**	**101**	**316.0 J**	**0.81**	**29.7**	**582**
KKR-21-060	FD-202108200805	8/20/2021	1 - 3		**26.9**	**8.6**	**215 J**	**80.8**	**185.0 J**	**0.87**	**26**	**460**
KKR-21-060	KKR-21-060-03-05-210820	8/20/2021	3 - 5		**28.7**	**1**	**52.4 J**	**57.8**	**114**	**0.92**	**22.6**	**222**
KKR-21-060	KKR-21-060-05-07-210820	8/20/2021	5 - 7		**12.5**	**0.64**	**36.6 J**	**44.4**	**124**	**0.38**	**18.1**	**217**
KKR-21-060	KKR-21-060-07-09-210820	8/20/2021	7 - 9		**3.5**	**0.34**	**14.8 J**	**170**	**54.8**	**0.2**	**11**	**170**
KKR-21-060	KKR-21-060-09-10-210820	8/20/2021	9 - 10		**2.4**	**0.27**	**18.7 J**	**16.1**	**6.9**	**0.018 J**	**15.7**	**60.1**
KKR-21-061	KKR-21-061-00-01-210820	8/20/2021	0 - 1		**6.4**	**3.3**	**192 J**	**67.7**	**138**	**0.33 J**	**21.7**	**297**
KKR-21-061	KKR-21-061-01-03-210820	8/20/2021	1 - 3		**9.3**	**6**	**439 J**	**93**	**285**	**0.5**	**32.3**	**447**
KKR-21-061	KKR-21-061-03-05-210820	8/20/2021	3 - 5		**11.3**	**10.3**	**477 J**	**100**	**383**	**0.9**	**40.1**	**577**
KKR-21-061	KKR-21-061-05-07-210820	8/20/2021	5 - 7		**14.9**	**9.7**	**358 J**	**114**	**293**	**1.1**	**44.5**	**579**
KKR-21-061	KKR-21-061-07-09-210820	8/20/2021	7 - 9		**22.7**	**12.8**	**469 J**	**137**	**343**	**1.9**	**42.7**	**704**
KKR-21-061	KKR-21-061-09-10-210820	8/20/2021	9 - 10		**22.3**	**11.5**	**384 J**	**138**	**335**	**1.8**	**45.5**	**665**

Table 5-3
Analytical Results for Metals

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Arsenic (mg/kg) 7440-38-2 33 99 165	Cadmium (mg/kg) 7440-43-9 5 15 25	Chromium (mg/kg) 7440-47-3 110 330 550	Copper (mg/kg) 7440-50-8 150 450 750	Lead (mg/kg) 7439-92-1 130 390 650	Mercury (mg/kg) 7439-97-6 1.1 3.3 5.5	Nickel (mg/kg) 7440-02-0 49 147 245	Zinc (mg/kg) 7440-66-6 460 1380 2300
KKR-21-062	KKR-21-062-00-01-210820	8/20/2021	0 - 1		**10**	**4.5**	**189 J**	**106**	**149**	**0.45**	**20.5**	**264**
KKR-21-062	KKR-21-062-01-03-210820	8/20/2021	1 - 3		**9.5**	**5.3**	**188 J**	**91.8**	**215**	**0.68**	**25.9**	**324**
KKR-21-062	KKR-21-062-03-05-210820	8/20/2021	3 - 5		**6.6**	**1.2**	**38.8 J**	**43.0 J**	**93.3 J**	**0.23**	**14**	**130**
KKR-21-062	KKR-21-062-05-07-210820	8/20/2021	5 - 7		**2.7**	**0.49**	**16.8 J**	**13.0 J**	**42.3 J**	**0.07**	**9.1**	**164**
KKR-21-062	KKR-21-062-07-7.4-210820	8/20/2021	7 - 7.4		**1.9**	**0.2**	**8.0 J**	**9.0 J**	**25.7 J**	**0.033 J**	**5.6**	**41.3**
Milwaukee Bay – Nearshore and McKinley Marina												
MKE-21-063	MKE-21-063-00-01-210818	8/18/2021	0 - 1		**6.4**	**2.6**	**172 J**	**40.9**	**82.4**	**0.2**	**20.2**	**188 J**
MKE-21-063	MKE-21-063-01-2.3-210818	8/18/2021	1 - 2.3		**7**	**4.9**	**196 J**	**40.9**	**81**	**0.32**	**24.3**	**219 J**
MKE-21-063	MKE-21-063-2.3-2.6-210818	8/18/2021	2.3 - 2.6		**4**	**1.7**	**57.2 J**	**16.1**	**33.5**	**0.22**	**11.4**	**115 J**
MKE-21-063	MKE-21-063-2.6-4.6-210818	8/18/2021	2.6 - 4.6		**4.4**	**0.74**	**61.6 J**	**19.3**	**66.8**	**0.33**	**9.3**	**101 J**
MKE-21-063	FD-202108181355	8/18/2021	2.6 - 4.6		**5**	**0.44**	**63.1 J**	**25**	**55.8**	**0.33**	**10.9**	**87.1 J**
MKE-21-063	MKE-21-063-4.6-6.6-210818	8/18/2021	4.6 - 6.6		**2.5**	**0.16**	**11.5 J**	**11.7**	**8.4**	**0.047**	**8.8**	**37.1 J**
MKE-21-063	*MKE-21-063-6.6-7.2-210818*	8/18/2021	6.6 - 7.2		**5.8**	**0.093**	**21.2 J**	**19.1**	**12.1**	0.012 U	**22.4**	**49.9 J**
MKE-21-064	MKE-21-064-00-01-210818	8/18/2021	0 - 1		**5.1**	**2.6**	**114 J**	**31.6**	**60.1**	**0.21**	**17.7**	**156 J**
MKE-21-064	MKE-21-064-01-03-210818	8/18/2021	1 - 3		**10.7**	**8.2**	**263 J**	**47.7**	**86.4**	**0.68**	**27.1**	**295 J**
MKE-21-064	MKE-21-064-03-05-210818	8/18/2021	3 - 5		**12.3**	**1.4**	**260**	**60.1**	**144**	**1.1**	**18.9**	**220**
MKE-21-064	MKE-21-064-05-6.4-210818	8/18/2021	5 - 6.4		**5.7**	**0.3**	**72.7**	**26.6**	**43.1**	**0.43**	**14.5**	**82.8**
MKE-21-065	MKE-21-065-00-01-210818	8/18/2021	0 - 1		**5.8**	**0.86**	**80.1**	**23.3**	**56**	**0.31**	**11.3**	**102**
MKE-21-065	MKE-21-065-01-03-210818	8/18/2021	1 - 3		**2.6**	**0.17**	**13.5**	**8.8**	**7.9**	**0.025**	**9.1**	**46**
MKE-21-065	MKE-21-065-03-05-210818	8/18/2021	3 - 5		**4.1**	**0.11**	**25.8**	**18.4**	**9.2**	0.012 U	**23.4**	**61.9**
MKE-21-065	*MKE-21-065-05-07-210818*	8/18/2021	5 - 7		**12.6**	**0.43**	**31.1**	**35.8**	**21.6**	0.02 U	**41**	**135**
Milwaukee Bay – North and Summerfest Lagoon												
MKE-21-066	MKE-21-066-00-01-210819	8/19/2021	0 - 1		**4.8**	**1.1**	**58.9**	**31.3**	**40.8 J**	**0.12**	**16**	**133**
MKE-21-066	MKE-21-066-01-03-210819	8/19/2021	1 - 3		**12**	**13.5**	**503**	**71.6**	**159 J**	**0.87 J**	**31.4**	**432**
MKE-21-066	FD-202108190930	8/19/2021	1 - 3		**8.6**	**9.3**	**439**	**60.3**	**141 J**	**0.5 J**	**26.5**	**326**
MKE-21-066	MKE-21-066-03-05-210819	8/19/2021	3 - 5		**14.4**	**4.5**	**278**	**67.3**	**139 J**	**1.7**	**23.4**	**321**
MKE-21-066	MKE-21-066-05-07-210819	8/19/2021	5 - 7		**9.1**	**0.58**	**222**	**41.4**	**85.2 J**	**0.78**	**15.6**	**136**
MKE-21-066	MKE-21-066-07-8.2-210819	8/19/2021	7 - 8.2		**1.5**	**0.12**	**6**	**3.9**	**5.1 J**	0.013 U	**4.3**	**38.2**
MKE-21-066	FR-202108190945	8/19/2021	7 - 8.2		**1.5**	**0.14**	**5.6**	**3.8**	**5.3 J**	**0.032**	**4**	**34.9**
MKE-21-066	*MKE-21-066-8.2-8.7-210819*	8/19/2021	8.2 - 8.7		**3.4**	**0.18**	**12.7**	**14.3**	**7.2 J**	0.011 U	**14.7**	**45.1**
MKE-21-067	MKE-21-067-00-01-210818	8/18/2021	0 - 1		**5.8**	**1.9**	**128**	**44.4**	**59.4**	**0.17**	**19.2**	**180**
MKE-21-067	MKE-21-067-01-03-210818	8/18/2021	1 - 3		**14.1**	**21.7**	**965**	**113**	**221**	**1.5**	**42.2**	**657**
MKE-21-067	MKE-21-067-03-05-210818	8/18/2021	3 - 5		**30**	**12.8**	**591**	**105**	**213**	**2**	**38.3**	**558**
MKE-21-067	MKE-21-067-05-7.5-210818	8/18/2021	5 - 7.5		**14.9**	**0.92**	**470**	**62.6**	**152**	**1.5**	**20.4**	**229**
MKE-21-067	*MKE-21-067-7.7-9.7-210818*	8/18/2021	7.7 - 9.7		**3.7**	**0.087**	**25.2**	**14.9**	**8.7**	0.013 U	**24.6**	**45.7**
MKE-21-068	MKE-21-068-00-01-210818	8/18/2021	0 - 1		**3.7**	**1.2**	**75.9**	**30.2**	**51.7**	**0.13**	**12.5**	**134**
MKE-21-068	MKE-21-068-01-03-210818	8/18/2021	1 - 3		**19.5**	**23.7**	**787**	**117**	**229**	**2.3**	**45.3**	**666**
MKE-21-068	FD-202108180910	8/18/2021	1 - 3		**20**	**23.8**	**743**	**115**	**226**	**2.1**	**45.7**	**664**
MKE-21-068	MKE-21-068-03-05-210818	8/18/2021	3 - 5		**25.3**	**15.8**	**701**	**116**	**230**	**2**	**40**	**563**
MKE-21-068	MKE-21-068-05-06-210818	8/18/2021	5 - 6		**18.1**	**1.6**	**351**	**99.3**	**256**	**4.1**	**22**	**419**
MKE-21-068	*MKE-21-068-06-7.2-210818*	8/18/2021	6 - 7.2		**8.7**	**0.5**	**34.4**	**30.7**	**17.6**	0.023 U	**33.6**	**150**

Table 5-3
Analytical Results for Metals

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Arsenic (mg/kg) 7440-38-2 33 99 165	Cadmium (mg/kg) 7440-43-9 5 15 25	Chromium (mg/kg) 7440-47-3 110 330 550	Copper (mg/kg) 7440-50-8 150 450 750	Lead (mg/kg) 7439-92-1 130 390 650	Mercury (mg/kg) 7439-97-6 1.1 3.3 5.5	Nickel (mg/kg) 7440-02-0 49 147 245	Zinc (mg/kg) 7440-66-6 460 1380 2300
MKE-21-069	MKE-21-069-00-01-210817	8/17/2021	0 - 1		8	7.6	302	56.2	150 J	0.63	24.8	294
MKE-21-069	MKE-21-069-01-03-210817	8/17/2021	1 - 3		20.4	18	530	103	204 J	2.3	39.4	534
MKE-21-069	MKE-21-069-03-4.8-210817	8/17/2021	3 - 4.8		18.2	3	324	95.6	244 J	3	21.3	433
MKE-21-069	MKE-21-069-4.8-5.6-210817	8/17/2021	4.8 - 5.6		4	0.099	12.9	14.6	8.4 J	0.021	12.1	39.5
MKE-21-069	*MKE-21-069-5.6-7.2-210817*	8/17/2021	5.6 - 7.2		3.2	0.2	17.4	14.8	8.2	0.011 U	16.2	54.5
MKE-21-069	*FD-202108171320*	8/17/2021	5.6 - 7.2		3.6	0.13	12.9	14	11.6 J	0.012 U	14.8	43.3
MKE-21-070	MKE-21-070-00-1.2-210819	8/19/2021	0 - 1.2		3.1	0.71	31.8	16	44.3 J	0.12	8.2	84.9
MKE-21-070	MKE-21-070-1.2-1.8-210819	8/19/2021	1.2 - 1.8		3.4	0.98	45.6	23.9	47.7 J	0.14	9.5	114
MKE-21-070	MKE-21-070-1.8-3.2-210819	8/19/2021	1.8 - 3.2		5.9	3.5	169	44.5	142.0 J	0.31	17.6	219
MKE-21-070	MKE-21-070-3.2-5.2-210819	8/19/2021	3.2 - 5.2		11.3	15.7	557	78.5	136.0 J	1.1	32.1	499
MKE-21-070	MKE-21-070-5.2-6.2-210819	8/19/2021	5.2 - 6.2		11.7	10.8	526	69.9	131.0 J	0.88	25.6	453
MKE-21-070	MKE-21-070-6.2-7.5-210819	8/19/2021	6.2 - 7.5		5	2.2	76.8	21.4	44.1 J	0.2	12.3	132
MKE-21-070	*MKE-21-070-7.5-8.5-210819*	8/19/2021	7.5 - 8.5		3	0.12	23.1	20.4	8.5 J	0.012 U	22.7	41.3
MKE-21-071	MKE-21-071-00-01-210819	8/19/2021	0 - 1		4.4	1.7	78.5	32.6	55.9 J	0.19	13.4	138
MKE-21-071	MKE-21-071-01-03-210819	8/19/2021	1 - 3		9.5	10.8	556	76.2	203.0 J	0.46	33	371
MKE-21-071	MKE-21-071-03-4.8-210819	8/19/2021	3 - 4.8		3.7	0.12	9.2 J	10.4	6.9	0.012 U	11.3	27.2
MKE-21-071	*MKE-21-071-4.8-5.5-210819*	8/19/2021	4.8 - 5.5		3	0.077	21.3 J	19.1	8.3	0.012 U	22.5	36.5
MKE-21-072	MKE-21-072-00-01-210819	8/19/2021	0 - 1		3	1.3	54.7 J	20.9	36.6	0.12	9.8	94.4
MKE-21-072	MKE-21-072-01-03-210819	8/19/2021	1 - 3		6.8	5	298.0 J	52	106	0.34	21.5	253
MKE-21-072	FD-202108191215	8/19/2021	1 - 3		7	7.8	377.0 J	58.1	131	0.4	23.2	292
MKE-21-072	MKE-21-072-03-3.5-210819	8/19/2021	3 - 3.5		6.1	2.5	84.2 J	24.4	29.9	0.13	25.5	105
MKE-21-072	*MKE-21-072-3.5-4.4-210819*	8/19/2021	3.5 - 4.4		4.3	1.7	59.2 J	19	22.7	0.054	16.8	86.2
MKE-21-073	MKE-21-073-00-01-210809	8/9/2021	0 - 1		4.5	1.7	86.2	38.4	67.4	0.14	14.8	187
MKE-21-073	MKE-21-073-01-03-210809	8/9/2021	1 - 3		20.2	39.8	1,270	163	250	2.1	54.2	998
MKE-21-073	MKE-21-073-03-5.1-210809	8/9/2021	3 - 5.1		21.3	24	973	116	212	1.9	37.2	810
MKE-21-074	MKE-21-074-00-01-210809	8/9/2021	0 - 1		3.8	2	93.3	33.7	56	0.18	13	155
MKE-21-074	MKE-21-074-01-2.7-210809	8/9/2021	1 - 2.7		10.9	11.5	492	67.8	126	0.86	25.2	398
MKE-21-074	MKE-21-074-2.7-4.3-210809	8/9/2021	2.7 - 4.3		2.7	0.29	15	9.1	7.3	0.013 U	10	40.4
MKE-21-075	MKE-21-075-00-01-210809	8/9/2021	0 - 1		4.4	1.2	63.1	33.5	57.3	0.12	14.9	171
MKE-21-075	MKE-21-075-01-03-210809	8/9/2021	1 - 3		8.9	9.8	373	163	114	0.71	22.1	339
MKE-21-075	MKE-21-075-03-05-210809	8/9/2021	3 - 5		2.6	1	15	17	8.9	0.013 U	8.5	42.1
Milwaukee Bay – South Adjacent to the Port Milwaukee												
MKE-21-076	MKE-21-076-00-01-210817	8/17/2021	0 - 1		5.2	5.3	255	47.5	97.4 J	0.31	20.3	224
MKE-21-076	FD-202108170815	8/17/2021	0 - 1		5.1	5.3	261	46.5	101.0 J	0.26	19.7	221
MKE-21-076	MKE-21-076-01-2.3-210817	8/17/2021	1 - 2.3		8.5	8.8	317	50.4	94.7 J	0.66	22.3	273
MKE-21-076	MKE-21-076-2.3-3.3-210817	8/17/2021	2.3 - 3.3		1.6	0.16	8.4	4.8	6.7 J	0.04	4.3	33.9
MKE-21-076	MKE-21-076-3.3-4.4-210817	8/17/2021	3.3 - 4.4		4.0 J	0.12	19.6	17.3	8.5 J	0.013 U	21.3	42.1
MKE-21-076	FR-202108170830	8/17/2021	3.3 - 4.4		19.5 J	0.13	26.8	21.9	9.9 J	0.013 U	29.1	55.1
MKE-21-077	MKE-21-077-00-01-210817	8/17/2021	0 - 1		10	13.1	572	81	150.0 J	0.99	34	422
MKE-21-077	MKE-21-077-01-03-210817	8/17/2021	1 - 3		3.1	1.5	69.2	19.6	25.4 J	0.14	9.7	68.4
MKE-21-077	MKE-21-077-11-13-210817	8/17/2021	11 - 13		2.2	0.15	19.9	15.1	8.0 J	0.015 U	19.3	44.9
MKE-21-077	MKE-21-077-13-14.2-210817	8/17/2021	13 - 14.2		2.7	0.11	20	15.8	8.0 J	0.013 U	19.7	41.8
MKE-21-077	MKE-21-077-03-05-210817	8/17/2021	3 - 5		1.7	0.091	6.5	6.2	8.6 J	0.012 J	5.3	27.9
MKE-21-077	MKE-21-077-05-07-210817	8/17/2021	5 - 7		2.1	0.14	14.7	12.9	6.6 J	0.014 U	15.3	38.6
MKE-21-077	MKE-21-077-07-09-210817	8/17/2021	7 - 9		1.8	0.16	13.4	12	6.1 J	0.014 U	14	41.8
MKE-21-077	MKE-21-077-09-11-210817	8/17/2021	9 - 11		1.8	0.19	13.7	12	6.3 J	0.017 U	14.3	45

Table 5-3
Analytical Results for Metals

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Arsenic (mg/kg) 7440-38-2 33 99 165	Cadmium (mg/kg) 7440-43-9 5 15 25	Chromium (mg/kg) 7440-47-3 110 330 550	Copper (mg/kg) 7440-50-8 150 450 750	Lead (mg/kg) 7439-92-1 130 390 650	Mercury (mg/kg) 7439-97-6 1.1 3.3 5.5	Nickel (mg/kg) 7440-02-0 49 147 245	Zinc (mg/kg) 7440-66-6 460 1380 2300
MKE-21-078	MKE-21-078-00-01-210817	8/17/2021	0 - 1		6.3	4.7	218	34.8	71.6	0.35 J	20.2	191
MKE-21-078	MKE-21-078-01-03-210817	8/17/2021	1 - 3		13.1	11.9	475	68.3	130	1.1 J	33.2	413
MKE-21-078	MKE-21-078-10.7-12.7-210817	8/17/2021	10.7 - 12.7		3.8	0.17	11.3	12.4	7.5	0.012 U	12.8	56.5
MKE-21-078	MKE-21-078-12.7-14.7-210817	8/17/2021	12.7 - 14.7		3.8	0.13	10.9	12.3	7.7	0.012 U	12.3	44.6
MKE-21-078	MKE-21-078-14.7-15.7-210817	8/17/2021	14.7 - 15.7		3.7	0.22	9	11.5	6.8	0.012 U	10.3	103
MKE-21-078	MKE-21-078-03-05-210817	8/17/2021	3 - 5		14.7	7.9	352	64.5	110	0.78 J	32.7	329
MKE-21-078	FD-202108171430	8/17/2021	3 - 5		14.8	7.5	336	64.6	107	0.82 J	32.6	323
MKE-21-078	MKE-21-078-05-07-210817	8/17/2021	5 - 7		7.9	0.95	48.9	25.9	27.3	0.15 J	15.2	135
MKE-21-078	MKE-21-078-07-8.7-210817	8/17/2021	7 - 8.7		4.8	0.25	13.4	21.3	12	0.013 J	13	61
MKE-21-078	MKE-21-078-8.7-10.7-210817	8/17/2021	8.7 - 10.7		5	0.16	11.7	15.5	10.5	0.011 U	13.6	55.3
South Menomonee Canal – East												
SMC-21-001	SMC-21-001-00-01-210821	8/21/2021	0 - 1		6.9	1.3	46.8 J	71.1 J	70.5 J	0.16 J	24.7	369
SMC-21-001	SMC-21-001-01-2.5-210821	8/21/2021	1 - 2.5		7.3	1.7	58.2 J	103.0 J	110.0 J	0.20 J	26.3	383
SMC-21-001	FD-202108210755	8/21/2021	1 - 2.5		7.1	1.7	56.4 J	97.3 J	109.0 J	0.21 J	24.8	364
SMC-21-001	SMC-21-001-2.5-04-210821	8/21/2021	2.5 - 4		8.4	3.9	154.0 J	160.0 J	205.0 J	0.39 J	24.5	401
SMC-21-001	SMC-21-001-04-06-210821	8/21/2021	4 - 6		12.5	5.6	207.0 J	120.0 J	270.0 J	0.84 J	36.4	401
SMC-21-001	SMC-21-001-06-08-210821	8/21/2021	6 - 8		19.3	12.1	232.0 J	150.0 J	336.0 J	0.62 J	51.5	430
SMC-21-001	SMC-21-001-08-8.3-210821	8/21/2021	8 - 8.3		19.2	10.3	223.0 J	139.0 J	329.0 J	0.72 J	51.3	430
SMC-21-002	SMC-21-002-00-01-210821	8/21/2021	0 - 1		7.7	1.6	55.2 J	97.4 J	88.3 J	0.19 J	27	424
SMC-21-002	SMC-21-002-01-2.5-210821	8/21/2021	1 - 2.5		4.8	1.7	57.6 J	77.9	93.9 J	0.18 J	15.1	234
SMC-21-002	FD-202108211055	8/21/2021	1 - 2.5		4.7	1.7	54.3 J	76.6 J	91.4 J	0.25 J	14.8	235
SMC-21-002	SMC-21-002-2.5-04-210821	8/21/2021	2.5 - 4		2.6	1	48.3 J	33.2	58.7 J	0.097	8.3	124
SMC-21-002	SMC-21-002-04-4.9-210821	8/21/2021	4 - 4.9		5.8	3.3	195.0 J	66.5	156.0 J	0.37 J	18	226
SMC-21-003	SMC-21-003-00-01-210821	8/21/2021	0 - 1		6.8	1.1	43.0 J	65.7	64.2 J	0.15 J	26.5	351
SMC-21-003	SMC-21-003-01-2.5-210821	8/21/2021	1 - 2.5		7.6	1.6	58.9 J	126	95.8 J	0.21 J	26.9	433
SMC-21-003	SMC-21-003-2.5-04-210821	8/21/2021	2.5 - 4		7.7	2.4	72.8	131	137	0.27	25.8	405
SMC-21-003	SMC-21-003-04-5.1-210821	8/21/2021	4 - 5.1		7.3	3.2	118.0 J	108	169.0 J	0.38 J	23.2	360
SMC-21-003	SMC-21-003-5.1-7.1-210821	8/21/2021	5.1 - 7.1		6.1	0.38	74.6	22.4	31.6	0.17	14.4	100
SMC-21-003	SMC-21-003-7.1-9.1-210821	8/21/2021	7.1 - 9.1		2.2	0.23	15	14.3	6.8	0.018 U	15.4	49.9
SMC-21-003	SMC-21-003-9.1-9.4-210821	8/21/2021	9.1 - 9.4		2	0.23	16	15.5	7.2	0.02 U	17	50.9
SMC-21-004	SMC-21-004-00-01-210821	8/21/2021	0 - 1		37.4	9.5	331	109	277	3.4	45.1	521
SMC-21-004	SMC-21-004-01-2.5-210821	8/21/2021	1 - 2.5		35.8	11.9	350	163	314	2.5	89.7	601
SMC-21-004	SMC-21-004-2.5-04-210821	8/21/2021	2.5 - 4		39	13.6	449	199	394	3	121	729
SMC-21-004	SMC-21-004-04-06-210821	8/21/2021	4 - 6		39	14.7	430	221	405	2	141	741
SMC-21-004	SMC-21-004-06-08-210821	8/21/2021	6 - 8		26.5	3.7	370	106	209	3.8	46	453
SMC-21-004	SMC-21-004-08-8.8-210821	8/21/2021	8 - 8.8		20.6	2.3	275	61.1	121	5.3	24.9	325
South Menomonee Canal – Middle												
SMC-21-005	SMC-21-005-00-01-210820	8/20/2021	0 - 1		8.2	2.2	72.9	213	124	0.36	26.7	553
SMC-21-005	SMC-21-005-01-2.5-210820	8/20/2021	1 - 2.5		10	4.7	209	142	208	0.48	28.5	388
SMC-21-005	SMC-21-005-2.5-04-210820	8/20/2021	2.5 - 4		14	10.9	445	161	411	0.91	45.6	558
SMC-21-005	SMC-21-005-04-06-210820	8/20/2021	4 - 6		22.5	5.9	431	116	391	1	37.9	473
SMC-21-005	SMC-21-005-06-6.7-210820	8/20/2021	6 - 6.7		75.2	4.3	703	136	350	6.4	36.2	554
SMC-21-005	*SMC-21-005-6.7-8.7-210820*	8/20/2021	6.7 - 8.7		3	0.35	25.8	18.2	14.6	0.046	20.2	66.7
SMC-21-005	*SMC-21-005-8.7-10.7-210820*	8/20/2021	8.7 - 10.7		2.2	0.22	18.5	16	9.6	0.023 J	19.2	60.8
SMC-21-005	*SMC-21-005-10.7-12.7-210820*	8/20/2021	10.7 - 12.7		2.2	0.2	18.7	16.2	9.7	0.023 J	21.3	61.8
SMC-21-005	*FR-202108201505*	8/20/2021	10.7 - 12.7		2.1	0.22	18.7	17.8	10.5	0.02 J	21.8	66.2

Table 5-3
Analytical Results for Metals

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Arsenic (mg/kg) 7440-38-2 33 99 165	Cadmium (mg/kg) 7440-43-9 5 15 25	Chromium (mg/kg) 7440-47-3 110 330 550	Copper (mg/kg) 7440-50-8 150 450 750	Lead (mg/kg) 7439-92-1 130 390 650	Mercury (mg/kg) 7439-97-6 1.1 3.3 5.5	Nickel (mg/kg) 7440-02-0 49 147 245	Zinc (mg/kg) 7440-66-6 460 1380 2300
SMC-21-006	SMC-21-006-0.1-01-210821	8/21/2021	0.1 - 1		**52**	**2.1**	**1,120.00**	**199**	**861**	**13.5**	**32.6**	**627**
SMC-21-006	SMC-21-006-01-2.5-210821	8/21/2021	1 - 2.5		**73.6**	**2.2**	**2,290.00**	**145**	**374**	**18.9**	**35.6**	**652**
SMC-21-006	SMC-21-006-03-04-210821	8/21/2021	3 - 4		**3.6**	**0.24**	**16.6**	**11.4**	**7.3**	**0.06**	**10.8**	**64.2**
SMC-21-006	SMC-21-006-04-06-210821	8/21/2021	4 - 6		**3.4**	**0.14**	**9.2**	**10.6**	**5.8**	0.012 U	**11.5**	**54.8**
SMC-21-006	SMC-21-006-06-08-210821	8/21/2021	6 - 8		**3.2**	**0.18**	**7.7**	**11.6**	**6.5**	0.012 U	**9.5**	**52.5 J**
SMC-21-006	SMC-21-006-08-10-210821	8/21/2021	8 - 10		**3.8**	**0.18**	**10.2**	**11.2**	**6.6**	0.012 U	**12.2**	**54.5 J**
SMC-21-006	SMC-21-006-10-12-210821	8/21/2021	10 - 12		**3.1**	**0.15**	**10.5**	**11.9**	**6.7**	0.012 U	**12.6**	**47.9 J**
SMC-21-006	SMC-21-006-12-12.8-210821	8/21/2021	12 - 12.8		**3.4**	**0.16**	**10.8**	**13.1**	**10.4**	0.012 U	**12.8**	**48.5 J**
SMC-21-007	SMC-21-007-00-01-210821	8/21/2021	0 - 1		**2.9**	**0.3**	**11.9**	**18.6**	**10.8**	**0.033**	**74.5**	**64.2 J**
SMC-21-007	SMC-21-007-01-2.5-210821	8/21/2021	1 - 2.5		**2.9**	**0.29**	**11.3**	**16.9**	**8.9**	**0.037**	**14.1**	**55.7 J**
SMC-21-007	FD-202108211310	8/21/2021	1 - 2.5		**2.7**	**0.27**	**10.7**	**17.1**	**9.5**	**0.039**	**13.2**	**55.7 J**
SMC-21-007	SMC-21-007-2.5-04-210821	8/21/2021	2.5 - 4		**2.9**	**0.29**	**12**	**16.6**	**9.1**	**0.024 J**	**14.4**	**61.0 J**
SMC-21-007	SMC-21-007-04-06-210821	8/21/2021	4 - 6		**3.8**	**0.19**	**13.4**	**12.8**	**7.6**	**0.021 J**	**15.2**	**52.0 J**
SMC-21-007	SMC-21-007-06-7.8-210821	8/21/2021	6 - 7.8		**2.6**	**0.13**	**9.6**	**9.9**	**6**	0.014 U	**11.1**	**34.7 J**
South Menomonee Canal – West												
SMC-21-008	SMC-21-008-01-1.5-210821	8/21/2021	1 - 1.5		**6.3**	**1.3**	**85.4**	**47.9**	**89.7**	0.014 U	**11.9**	**143.0 J**
SMC-21-008	*SMC-21-008-1.5-2.5-210821*	8/21/2021	1.5 - 2.5		**3.3**	**0.37**	**31.5 J**	**19.7**	**14.9**	**0.05**	**22.5**	**75.5**
SMC-21-008	*SMC-21-008-2.5-04-210821*	8/21/2021	2.5 - 4		**2.7**	**0.26**	**25.9 J**	**18**	**10.9**	**0.035**	**22.3**	**70**
SMC-21-008	*SMC-21-008-04-06-210821*	8/21/2021	4 - 6		**2.6**	**0.22**	**24.3 J**	**17.2**	**9.7**	**0.022 J**	**22.2**	**66.5**
SMC-21-008	*SMC-21-008-06-08-210821*	8/21/2021	6 - 8		**2.3**	**0.22**	**23.1 J**	**17.3**	**9.9**	**0.023 J**	**21.6**	**69**
SMC-21-008	*SMC-21-008-08-10-210821*	8/21/2021	8 - 10		**3.2**	**0.19**	**15.2 J**	**13.8**	**7.6**	**0.017 J**	**15.2**	**51.1**
SMC-21-008	*SMC-21-008-10-10.6-210821*	8/21/2021	10 - 10.6		**6.2**	**0.13**	**16.0 J**	**14.5**	**7.6**	0.013 U	**16.1**	**48.8**
SMC-21-008	*SMC-21-008-10.6-12.6-210821*	8/21/2021	10.6 - 12.6		**5.6**	**0.13**	**14.1 J**	**13.4**	**7.2**	**0.013 J**	**14.5**	**45.9**
SMC-21-008	*SMC-21-008-12.6-13.6-210821*	8/21/2021	12.6 - 13.6		**3.8**	**0.098**	**11.8 J**	**11**	**6**	**0.012 J**	**12.2**	**39**
South Menomonee Canal – Entrance to Burnham Canal												
SMC-21-010	SMC-21-010-00-01-210811	8/11/2021	0 - 1		**7.5**	**2**	**75.7**	**152.0 J**	**181.0 J+**	**0.35 J-**	**24.8**	**560**
SMC-21-010	SMC-21-010-01-1.6-210811	8/11/2021	1 - 1.6		**7.8**	**2.3**	**111**	**172.0 J**	**443.0 J+**	**0.33 J-**	**23.4**	**544**
SMC-21-011	SMC-21-011-00-01-210811	8/11/2021	0 - 1		**7.3**	**1.2**	**28.2**	**47.5 J**	**165.0 J+**	**0.073 J-**	**20.8**	**188**
SMC-21-011	SMC-21-011-01-02-210811	8/11/2021	1 - 2		**5.2**	**0.47**	**13.9**	**40.3 J**	**141**	**0.091 J-**	**15.9**	**143**

Table 5-3
Analytical Results for Metals

Notes:
1. Validated results were screened against the PEC, 3 x PEC, and 5 x PEC. PEC were provided in DNR 2003.
2. DNR (Wisconsin Department of Natural Resources), 2003. *Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application* . Publication No. WT-732.
3. Sample intervals defined as native materials based on visual observations are shown in italics.

Screening Criteria:
Detected concentration is greater than PEC screening level
Detected concentration is greater than 3 x PEC screening level
Detected concentration is greater than 5 x PEC screening level
Bold: detected result

Abbreviations:
CAS: Chemical Abstracts System
DNR: Wisconsin Department of Natural Resources
FD: field duplicate sample
FR: field replicate sample
ft bss: feet below sediment surface
J: indicates an estimated value
J-: indicates an estimated value with a potentially low bias
J+: indicates an estimated value with a potentially high bias
mg/kg: milligrams per kilogram
PEC: probable effects concentration
U: indicates the compound analyzed for but not detected above detection limit
UJ: indicates the compound or analyte analyzed for but not detected and the specified limit reported is estimated

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	TOC (percent)	2-Methylnaphthalene (mg/kg) 91-57-6 0.201 0.603 1.005	Acenaphthene (mg/kg) 83-32-9 0.089 0.267 0.445	Acenaphthylene (mg/kg) 208-96-8 0.128 0.384 0.64	Anthracene (mg/kg) 120-12-7 0.845 2.535 4.225	Benzo(a)anthracene (mg/kg) 56-55-3 1.05 3.15 5.25	Benzo(a)pyrene (mg/kg) 50-32-8 1.45 4.35 7.25	Benzo(b)fluoranthene (mg/kg) 205-99-2 13.4 40.2 67	Benzo(e)pyrene (mg/kg) 192-97-2 1.45 4.35 7.25
Upstream Kinnickinnic River													
KKR-21-001	KKR-21-001-210811	8/11/2021	0 - 0.3		**2.01**	0.010 U	0.012 U	0.0093 U	0.011 U	0.019 U	0.018 U	0.010 U	0.085 U
KKR-21-002	KKR-21-002-210813	8/13/2021	0 - 0.1		**7.47**	0.32 U	0.38 U	0.29 U	**0.61 J**	**1.7**	**1.6**	**2**	2.7 U
KKR-21-003	KKR-21-003-210811	8/11/2021	0 - 0.3		**3.97**	0.33 U	0.40 U	0.30 U	**0.62 J**	**2.5**	**2.2**	**3.5**	2.8 U
KKR-21-004	KKR-21-004-00-0.6-210811	8/12/2021	0 - 0.6		**2.03**	0.0099 U	**0.019 J**	**0.021 J**	**0.055**	**0.31**	**0.31**	**0.46**	**0.26**
KKR-21-004	KKR-21-004-0.6-1.3-210811	8/12/2021	0.6 - 1.3		**2.04 J+**	0.010 U	**0.018 J**	**0.014 J**	**0.074**	**0.34**	**0.34**	**0.51**	**0.28**
KKR-21-005	KKR-21-005-00-0.5-210812	8/12/2021	0 - 0.5		**2.56 J+**	0.0097 U	0.012 U	0.0089 U	0.011 U	0.018 U	0.018 U	0.010 U	0.081 U
KKR-21-006	KKR-21-006-00-0.4-210812	8/12/2021	0 - 0.4		**2.16**	0.0096 U	0.012 U	0.0088 U	0.010 U	0.018 U	0.017 U	**0.02 J**	0.080 U
KKR-21-007	KKR-21-007-210811	8/11/2021	0 - 0.3		**3.57 J+**	0.021 U	**0.044 J**	**0.02 J**	**0.3**	**0.62**	**0.5**	**0.71**	**0.37 J**
KKR-21-007	FD-202108110815	8/11/2021	0 - 0.3		**2.52 J+**	0.021 U	0.025 U	**0.023 J**	**0.056 J**	**0.27**	**0.27**	**0.42**	**0.25 J**
KKR-21-008	KKR-21-008-210811	8/11/2021	0 - 0.3		**5.46 J+**	**0.13 J**	**1**	**0.88**	**6.6**	**11**	**8.8**	**10**	**5.8**
KKR-21-009	KKR-21-009-210811	8/11/2021	0 - 0.3		**3.94**	0.019 U	0.023 U	**0.019 J**	**0.081**	**0.36**	**0.34**	**0.41**	**0.25 J**
KKR-21-010	FD-202108121455	8/12/2021	0 - 0.1		**2.56 J+**	0.010 U	0.013 U	0.0095 U	0.011 U	0.020 U	0.019 U	0.011 U	0.087 U
KKR-21-010	KKR-21-010-00-0.1-210812	8/12/2021	0 - 0.1		**1.91 J+**	0.011 U	0.013 U	0.0096 U	0.011 U	**0.034 J**	**0.025 J**	**0.031 J**	0.088 U
KKR-21-011	KKR-21-011-00-0.2-210812	8/12/2021	0 - 0.2		**3.24 J+**	0.19 U	**0.39 J**	0.17 U	**1.1**	**4.9**	**4.3**	**6.9**	**3.7 J**
KKR-21-012	KKR-21-012-00-0.2-210812	8/12/2021	0 - 0.2		**0.863**	0.052 U	0.062 U	0.047 U	**0.062 J**	**0.29**	**0.32**	**0.45**	0.43 U
KKR-21-013	KKR-21-013-00-0.1-210813	8/13/2021	0 - 0.1		**4.4**	0.097 U	0.12 U	0.089 U	**0.23 J**	**0.83**	**0.7**	**0.95**	0.81 U
KKR-21-014	KKR-21-014-00-0.25-210812	8/12/2021	0 - 0.25		**6.64 J+**	0.16 U	**0.5 J**	0.14 U	**1.4**	**3.9**	**3.4**	**5**	**2.6 J**
KKR-21-015	KKR-21-015-00-0.25-210812	8/12/2021	0 - 0.25		**4.63 J+**	0.093 U	0.11 U	0.085 U	**0.17 J**	**0.7**	**0.65**	**0.94**	0.78 U
KKR-21-016	KKR-21-016-00-0.2-210812	8/12/2021	0 - 0.2		**5.79 J+**	0.12 U	**0.16 J**	0.11 U	**0.38 J**	**2 J**	**2.1 J**	**3 J**	**1.7 J**
KKR-21-016	FD-202108121430	8/12/2021	0 - 0.2		**4**	0.18 U	**0.42 J**	0.17 U	**1.2 J**	**5.1 J**	**4.3 J**	**6.4 J**	**3.3 J**
KKR-21-017	KKR-21-017-00-0.1-210813	8/13/2021	0 - 0.1		**6.2**	0.097 U	**0.14 J**	**0.12 J**	**0.42**	**2.5**	**2.7**	**4.6**	**2.4**
KKR-21-018	KKR-21-018-00-0.3-210812	8/12/2021	0 - 0.3		**8.95 J+**	0.049 U	0.059 U	**0.047 J**	**0.13 J**	**0.61**	**0.56**	**0.78**	**0.44 J**
KKR-21-019	KKR-21-019-210813	8/13/2021	0 - 0.1		**4.23**	0.11 U	**0.19 J**	**0.15 J**	**0.71**	**3.7**	**3.4**	**4.1**	**2.4**
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1		**4.8**	0.067 U	**0.12 J**	0.062 U	**0.37**	**2.1**	**2**	**2.9**	**1.6**
KKR-21-021	KKR-21-021-210813	8/13/2021	0 - 0.1		**2.29**	0.29 U	0.35 U	0.27 U	**0.42 J**	**1.8**	**1.7**	**2.5**	2.4 U
Kinnickinnic River – Reach 1													
KKR-21-024	KKR-21-024-00-0.5-210806	8/6/2021	0 - 0.5		**6.69**	**0.095 J**	**0.043 J**	**0.095 J**	**0.19**	**0.8**	**0.83**	**1.2**	**0.68**
KKR-21-024	KKR-21-024-0.5-1.25-210806	8/6/2021	0.5 - 1.25		**3.13**	**0.02 J**	**0.016 J**	**0.025 J**	**0.04 J**	**0.2**	**0.21**	**0.32**	**0.18 J**
KKR-21-025	KKR-21-025-00-01-210806	8/6/2021	0 - 1		**7.26**	0.28 U	**0.49 J**	**0.45 J**	**1.5**	**6**	**5.7**	**8.4**	**4.5 J**
KKR-21-026	KKR-21-026-0.2-01-210806	8/6/2021	0.2 - 1		**4.91**	**0.74 J**	**3.8**	**1.4**	**10**	**21**	**16**	**23**	**13**
KKR-21-026	KKR-21-026-01-1.7-210806	8/6/2021	1 - 1.7		**9.99**	**1 J**	**5.9**	**2.1**	**18**	**34**	**27**	**37**	**20**
KKR-21-028	KKR-21-028-00-0.8-210806	8/6/2021	0 - 0.8		**4.31**	0.17 U	**0.29 J**	**0.21 J**	**0.86**	**4.4**	**4.5**	**6.9**	**3.4**
KKR-21-028	FD-202108061200	8/6/2021	0 - 0.8		**3.13**	0.16 U	**0.29 J**	**0.24 J**	**0.9**	**4.1**	**4.1**	**6.3**	**3.1 J**
KKR-21-029	KKR-21-029-210810	8/10/2021	0 - 0.3		**7.1**	0.25 U	0.29 U	0.22 U	**0.66 J**	**4**	**4.6**	**8.5**	**4.7 J**
KKR-21-031	KKR-21-031-210810	8/10/2021	0 - 0.3		**5.64**	0.049 U	**0.24**	**0.11 J**	**0.54**	**1.8**	**1.5**	**2.2**	**1.1**
KKR-21-032	KKR-21-032-00-0.7-210810	8/10/2021	0 - 0.7		**6.04**	**0.083 J**	**0.31**	**0.2 J**	**0.85**	**4.1**	**4.9**	**6.4**	**3.6**
KKR-21-032	KKR-21-032-0.7-02-210810	8/10/2021	0.7 - 2		**8.39**	0.096 U	**0.19 J**	**0.23 J**	**0.61**	**3.7**	**4.5**	**7.8**	**4.1**
KKR-21-033	KKR-21-033-00-0.4-210810	8/10/2021	0 - 0.4		**10.8**	0.19 U	**0.42 J**	**0.36 J**	**1.3**	**6.9**	**7.7**	**11**	**6.1**
KKR-21-033	KKR-21-033-0.4-1.2-210810	8/10/2021	0.4 - 1.2		**6.61**	**0.19 J**	**1.3**	**0.51**	**3**	**15**	**15**	**19**	**10**
KKR-21-033	FR-202108101135	8/10/2021	0.4 - 1.2		**5.3**	**0.22 J**	**1.3**	**0.48**	**3.2**	**14**	**15**	**17**	**9.8**
KKR-21-034	KKR-21-034-00-1.0-210808	8/8/2021	0 - 1		**5.54**	0.20 U	**0.5 J**	**0.44 J**	**1.3**	**5.4**	**5.6**	**8.3**	**4.2**
KKR-21-034	KKR-21-034-01-1.2-210808	8/8/2021	1 - 1.2		**6.64**	0.052 U	**0.16 J**	**0.18 J**	**0.49**	**2**	**2.2**	**3.2**	**1.6**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	TOC (percent)	2-Methylnaphthalene (mg/kg) 91-57-6 0.201 0.603 1.005	Acenaphthene (mg/kg) 83-32-9 0.089 0.267 0.445	Acenaphthylene (mg/kg) 208-96-8 0.128 0.384 0.64	Anthracene (mg/kg) 120-12-7 0.845 2.535 4.225	Benzo(a)anthracene (mg/kg) 56-55-3 1.05 3.15 5.25	Benzo(a)pyrene (mg/kg) 50-32-8 1.45 4.35 7.25	Benzo(b)fluoranthene (mg/kg) 205-99-2 13.4 40.2 67	Benzo(e)pyrene (mg/kg) 192-97-2 1.45 4.35 7.25
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1		7.01	0.78 J	4.5	0.65 J	7.3	19	19	28	15
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3		4.97	0.49 J	3.3	0.76 J	6.1	17	14	22	11
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5		6.73	0.76 J	2.2	1.5	8	18	17	26	15
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8		6.95	0.6 J	1.3	1 J	4.7	11	10	17	9.2
KKR-21-036	KKR-21-036-00-0.8-210810	8/10/2021	0 - 0.8		9.56	0.085 U	0.15 J	0.19 J	0.51	2.7	3.1	5	2.5
KKR-21-036	KKR-21-036-0.8-1.2-210810	8/10/2021	0.8 - 1.2		8.15	0.14 U	0.35 J	0.21 J	0.83	4.5	5	7.4	3.9
KKR-21-036	FD-202108101200	8/10/2021	0.8 - 1.2		8.12	0.13 U	0.27 J	0.22 J	0.86	4.3	4.2	6.1	3.6
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1		6.63	0.96 J	4.2	2	11	21	18	28	15
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3		7.08	1.2	1.7	1.6	5.9	13	11	19	10
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5		7.31	1.2	2.2	1.1	6.2	14	12	20	11
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5		6.52	0.65 J	1.5	0.99 J	5.5	14	13	19	11
KKR-21-038	KKR-21-038-00-01-210807	8/7/2021	0 - 1		6.62	1	2.7	1.5	7.6	19	16	24	13
KKR-21-038	KKR-21-038-01-03-210807	8/7/2021	1 - 3		5.3	0.14 UJ	0.45 J	0.3 J	1.6 J	4.4 J	3.4 J	4.9 J	2.5 J
KKR-21-038	FD-202108071010	8/7/2021	1 - 3		6.52	1.2 J	2.8 J	1.3 J	7.6 J	21 J	17 J	25 J	14 J
KKR-21-038	KKR-21-038-03-4.9-210807	8/7/2021	3 - 4.9		7.29	1.4	2.1	0.88 J	6.6	15 J	13	18 J	11
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4		5.69	0.30 U	1.3	0.32 J	2.5	7.6	7.6	12	6.2 J
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7		6.12	0.69 J	3.3	0.58 J	6.2	18	17	23	14
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3		4.54	0.39 J	2.6	0.86 J	6.2	16	14	20	11
KKR-21-040	KKR-21-040-00-0.9-210810	8/10/2021	0 - 0.9		6.45	0.068 U	0.19 J	0.2 J	0.62	3.3	3.9	5.6	3.1
KKR-21-040	KKR-21-040-0.9-1.8-210810	8/10/2021	0.9 - 1.8		11.4	0.11 U	0.22 J	0.15 J	0.46 J	3.1	4.1	6.9	3.8
KKR-21-041	KKR-21-041-00-1.3-210807	8/7/2021	0 - 1.3		3.59	0.21 U	0.47 J	0.19 U	0.85 J	2.5	2.3	3.2	1.8 J
KKR-21-041	KKR-21-041-1.3-2.3-210807	8/7/2021	1.3 - 2.3		3.56	0.28 J	1.3	0.36 J	3.3	7.9	6.5	10	5.2
KKR-21-042	KKR-21-042-00-0.9-210808	8/8/2021	0 - 0.9		1.97	0.024 J	0.041	0.052	0.12	0.33	0.28	0.38	0.2
KKR-21-042	FR-202108081210	8/8/2021	0 - 0.9		1.97	0.0096 U	0.012 U	0.041	0.026 J	0.11	0.1	0.12	0.08 J
KKR-21-043	KKR-21-043-00-01-210807	8/7/2021	0 - 1		4.65	0.15 U	1.3	0.61 J	4.3	8.9	7.6	9.3	5
KKR-21-043	KKR-21-043-01-03-210807	8/7/2021	1 - 3		2.52	0.36 J	2.6	0.76 J	6.3	15	11	16	7.9
KKR-21-043	KKR-21-043-03-05-210807	8/7/2021	3 - 5		7.11	0.91 J	2.8	1.5	8.9	20	17	26	14
KKR-21-043	KKR-21-043-05-5.9-210807	8/7/2021	5 - 5.9		6.14	0.49 J	1.5	0.84	4.7	13	12	18	10
KKR-21-044	KKR-21-044-0.2-0.9-210808	8/8/2021	0.2 - 0.9		2.62	0.0099 U	0.028 J	0.022 J	0.23	0.43	0.32	0.42	0.22
KKR-21-044	KKR-21-044-0.9-1.1-210808	8/8/2021	0.9 - 1.1		5.79	0.24 U	0.64 J	0.21 J	1.5	5	3.9	5.6	2.9 J
KKR-21-045	KKR-21-045-00-1.3-210808	8/8/2021	0 - 1.3		7.92	0.20 U	0.24 U	0.75 J	0.73 J	1.7	1.9	2.6	1.7 U
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3		2.28	0.12 J	0.96	0.24 J	2.1	5.1	4	5.7	2.8
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8		4.46	0.43 J	2.8	0.64 J	7.4	17	14	20	10
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4		5.76	0.71 J	2.5	0.7 J	4.9	13	11	16	8.5
KKR-21-048	KKR-21-048-00-01-210808	8/8/2021	0 - 1		3.15	0.19 J	1.2	0.24 J	2.7	8.6	7.3	9.6	5.3
KKR-21-048	KKR-21-048-01-1.8-210808	8/8/2021	1 - 1.8		2.28	0.093 U	0.6	0.15 J	1.7	3.5	2.6	3.7	1.9
KKR-21-049	KKR-21-049-00-0.8-210808	8/8/2021	0 - 0.8		2.91	0.25 J	3.1	0.27 J	9.2	14	12	13	7.5
KKR-21-049	KKR-21-049-0.8-03-210808	8/8/2021	0.8 - 3		5	0.36 J	1.3	0.88	4.1	13 J	12 J	18 J	10 J
KKR-21-049	KKR-21-049-03-4.4-210808	8/8/2021	3 - 4.4		5.98	0.44 J	0.88	0.52 J	2.7	9.3	9.2	14	7.9
KKR-21-049	FD-202108080940	8/8/2021	3 - 4.4		6.1	0.54	0.96	0.66	3.1	11	11	16	9.1
KKR-21-050	KKR-21-050-00-01-210808	8/8/2021	0 - 1		8.1	0.35 U	0.43 U	0.37 J	0.84 J	4.7	5.2	8.7	4.9 J
KKR-21-050	KKR-21-050-01-03-210808	8/8/2021	1 - 3		5.46	0.21 J	1.6	0.47 J	3.1	9.4	10	13	7.2
KKR-21-050	KKR-21-050-03-05-210808	8/8/2021	3 - 5		4.74	0.71	2.2	0.45 J	3.6	11	10	15	8.1
KKR-21-050	KKR-21-050-05-6.8-210808	8/8/2021	5 - 6.8		3.69	0.49	1.5	0.46 J	2.9	9.1	8	11	6.2
KKM-21-001	KKM-21-001-210816	8/16/2021	0 - 0.1		7.23	0.17 U	0.7	0.19 J	0.97	5.1	4.4	6.6	3.5

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	TOC (percent)	2-Methylnaphthalene (mg/kg) 91-57-6 0.201 0.603 1.005	Acenaphthene (mg/kg) 83-32-9 0.089 0.267 0.445	Acenaphthylene (mg/kg) 208-96-8 0.128 0.384 0.64	Anthracene (mg/kg) 120-12-7 0.845 2.535 4.225	Benzo(a)anthracene (mg/kg) 56-55-3 1.05 3.15 5.25	Benzo(a)pyrene (mg/kg) 50-32-8 1.45 4.35 7.25	Benzo(b)fluoranthene (mg/kg) 205-99-2 13.4 40.2 67	Benzo(e)pyrene (mg/kg) 192-97-2 1.45 4.35 7.25
KKM-21-003	KKM-21-003-210816	8/16/2021	0 - 0.1		5.45	0.083 U	0.18 J	0.11 J	0.58	2.6	2.6	4.3	2.2
KKM-21-004	KKM-21-004-210816	8/16/2021	0 - 0.1		11.1	0.66 U	0.79 U	0.60 U	0.72 U	1.4 J	1.3 J	2.3 J	5.5 U
KKM-21-005	KKM-21-005-210816	8/16/2021	0 - 0.1		6.12	0.23 U	0.28 U	0.21 U	0.25 U	0.43 U	0.42 U	0.39 J	1.9 U
Kinnickinnic River – Reach 2													
KKR-21-051	KKR-21-051-00-01-210805	8/5/2021	0 - 1		6.22	0.13 J	0.49	0.52	1.6	5.8	6.2	9	5.1
KKR-21-051	KKR-21-051-01-03-210805	8/5/2021	1 - 3		6.73	0.28 J	2.1	0.73 J	3.9	14	14	21	11
KKR-21-051	KKR-21-051-03-05-210805	8/5/2021	3 - 5		9.17	0.62 J	1.4	0.98	3.9	13	12	19	9.8
KKR-21-051	KKR-21-051-05-07-210805	8/5/2021	5 - 7		9.97	0.78 J	1.1	1	2.9	11	9.9	15	7.8
KKR-21-052	KKR-21-052-00-01-210805	8/5/2021	0 - 1		5.54	0.088 J	0.24 J	0.54	0.9	3.4	3.9	6.7	3.9
KKR-21-052	KKR-21-052-01-03-210805	8/5/2021	1 - 3		5.42	0.38 J	3.2	1.1 J	6	20	20	29	16
KKR-21-052	KKR-21-052-03-05-210805	8/5/2021	3 - 5		8.94	0.51 J	1.6	0.72 J	3.7	12	11	18	8.9
KKR-21-052	KKR-21-052-05-07-210805	8/5/2021	5 - 7		6.09	0.78	0.83	0.73	2	5.4	4.7	6.5	3.4
KKR-21-053	KKR-21-053-00-01-210805	8/5/2021	0 - 1		11.6	1 J	1.7	1.8	5.2	17	14	22	12
KKR-21-053	KKR-21-053-01-03-210805	8/5/2021	1 - 3		11.6	0.82 J	2.5	1.4 J	5.7	19	16	23	13
KKR-21-053	KKR-21-053-03-05-210805	8/5/2021	3 - 5		9.11	1.1	1.7	1.3	4.1	14	11	17	9.3
Kinnickinnic River – Reach 3													
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9		7.44	0.19 U	0.22 U	0.22 J	0.44 J	1.6	2	2.9	1.6 J
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25		11.8	0.2 J	0.21 J	0.36 J	0.94	5	5.5	8.7	5
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85		9.1	1.1	10	0.54 J	11	28	26	34	18
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1		12	0.46 J	2.2	0.48 J	2.2	11	10	15	8.6
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9		20.2	1.2 J	4.9 J	0.99 J	6.4 J	19	18	29	15
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9		21.1	1.6	8.4 J	1.1 J	11 J	28	25	34	19
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1		10.9	0.39 J	1.3	0.66 J	2.7	10	10	15	8.3
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3		22.5	1.4	2.3	1.1	4.7	13	11	17	10
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3		33.9	2.5	2.1	2.6	4.5	13	9.2	13	7.5
Kinnickinnic River – Reach 4													
KKR-21-058	KKR-21-058-00-01-210819	8/19/2021	0 - 1		16.3	0.41	0.45	0.55	1.3	4.9	4.6	7.3	4
KKR-21-058	KKR-21-058-01-03-210819	8/19/2021	1 - 3		18.7	0.85	0.57	1.5	2.3	9.2	8.4	12	6.4
KKR-21-058	KKR-21-058-03-4.2-210819	8/19/2021	3 - 4.2		13.9	0.79	0.59	1.2	1.9	7	6.4	8.9	5.4
KKR-21-059	KKR-21-059-00-01-210820	8/20/2021	0 - 1		7.12	0.16 J	0.19 J	0.33 J	0.64	2.6	3.1	4.7	2.6
KKR-21-059	KKR-21-059-01-03-210820	8/20/2021	1 - 3		8.64	0.26 J	0.35 J	0.52	1.1	3.7	4.2	6.1	3.4
KKR-21-059	KKR-21-059-03-04-210820	8/20/2021	3 - 4		8.12 J-	0.41	0.43	0.51	1.3	4.7	4.9	7.9	4.2
KKR-21-060	KKR-21-060-00-01-210820	8/20/2021	0 - 1		8.11	0.17 J	0.17 J	0.34	0.5	1.9	2.2	3.7	1.9
KKR-21-060	KKR-21-060-01-03-210820	8/20/2021	1 - 3		19.1 J-	0.99	0.51	1.4	1.8	7.1	6.5	8.3	4.6
KKR-21-060	FD-202108200805	8/20/2021	1 - 3		20.8 J-	0.88	0.48	1.3	1.7	7	6.2	6.7	4.5
KKR-21-060	KKR-21-060-03-05-210820	8/20/2021	3 - 5		5.2	0.23	0.29	0.16	0.41	0.78	0.64	0.73	0.44 J
KKR-21-060	KKR-21-060-05-07-210820	8/20/2021	5 - 7		6.74 J-	0.28	0.45	0.18	0.69	1	0.84	0.86	0.49 J
KKR-21-060	KKR-21-060-07-09-210820	8/20/2021	7 - 9		6.28 J-	0.055 J	0.19	0.068	0.31	0.44	0.34	0.35	0.19 J
KKR-21-060	KKR-21-060-09-10-210820	8/20/2021	9 - 10		6.89 J-	0.015 U	0.018 U	0.013 U	0.016 U	0.028 U	0.027 U	0.015 U	0.12 U
KKR-21-061	KKR-21-061-00-01-210820	8/20/2021	0 - 1		5.94 J-	0.26	0.28	0.58	0.99	3.3	2.9	4.4	2.4
KKR-21-061	KKR-21-061-01-03-210820	8/20/2021	1 - 3		6.78	0.33	0.5	0.99	1.8	5.9	5.3	8.3	4.4
KKR-21-061	KKR-21-061-03-05-210820	8/20/2021	3 - 5		7.04	0.38	0.76	1.1	2.4	7.6	6.7	10	5.5
KKR-21-061	KKR-21-061-05-07-210820	8/20/2021	5 - 7		6.94	0.73	1.1	3.2	5.3	15	11	16	8.9
KKR-21-061	KKR-21-061-07-09-210820	8/20/2021	7 - 9		10.6	1.2	0.84	2.1	3.1	10	8.2	12	6.9
KKR-21-061	KKR-21-061-09-10-210820	8/20/2021	9 - 10		13.3	1	0.87	1.9	3.2	9.7	8.3	12	7.4

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	TOC (percent)	2-Methylnaphthalene (mg/kg) 91-57-6 0.201 0.603 1.005	Acenaphthene (mg/kg) 83-32-9 0.089 0.267 0.445	Acenaphthylene (mg/kg) 208-96-8 0.128 0.384 0.64	Anthracene (mg/kg) 120-12-7 0.845 2.535 4.225	Benzo(a)anthracene (mg/kg) 56-55-3 1.05 3.15 5.25	Benzo(a)pyrene (mg/kg) 50-32-8 1.45 4.35 7.25	Benzo(b)fluoranthene (mg/kg) 205-99-2 13.4 40.2 67	Benzo(e)pyrene (mg/kg) 192-97-2 1.45 4.35 7.25
KKR-21-062	KKR-21-062-00-01-210820	8/20/2021	0 - 1		**7.06**	**0.37**	**0.65**	**0.66**	**1.4**	**4.7**	**3.5**	**5**	**2.7**
KKR-21-062	KKR-21-062-01-03-210820	8/20/2021	1 - 3		**3.01**	**0.96**	**1.8**	**1.9**	**3.6**	**11**	**8.5**	**11**	**6.5**
KKR-21-062	KKR-21-062-03-05-210820	8/20/2021	3 - 5		**6.54**	**0.5**	**1**	**0.4**	**1.4**	**2.7**	**2.1**	**2.5**	**1.5**
KKR-21-062	KKR-21-062-05-07-210820	8/20/2021	5 - 7		**2.88**	**0.42**	**1**	**0.59**	**1.6**	**2.5**	**1.9**	**1.9**	**1.3**
KKR-21-062	KKR-21-062-07-7.4-210820	8/20/2021	7 - 7.4		**1.76**	**0.15**	**0.51**	**0.16**	**0.7**	**1**	**0.77**	**0.76**	**0.5**
Milwaukee Bay – Nearshore and McKinley Marina													
MKE-21-063	MKE-21-063-00-01-210818	8/18/2021	0 - 1		**2.78**	0.019 U	**0.057 J**	**0.064 J**	**0.17**	**0.67**	**0.72**	**0.97**	**0.54**
MKE-21-063	MKE-21-063-01-2.3-210818	8/18/2021	1 - 2.3		**2.87**	0.048 U	**0.12 J**	**0.11 J**	**0.31**	**1.2**	**1.3**	**1.8**	**1**
MKE-21-063	MKE-21-063-2.3-2.6-210818	8/18/2021	2.3 - 2.6		**1.89 J-**	**0.026 J**	**0.13**	**0.057**	**0.41**	**1**	**0.87**	**1.1**	**0.61**
MKE-21-063	MKE-21-063-2.6-4.6-210818	8/18/2021	2.6 - 4.6		**4.18**	**0.068 J**	**0.2**	**0.26**	**0.66**	**1.4**	**1.3**	**1.4**	**0.83**
MKE-21-063	FD-202108181355	8/18/2021	2.6 - 4.6		**5.75**	**0.07**	**0.15**	**0.22**	**0.43**	**0.95**	**0.93**	**0.92**	**0.59**
MKE-21-063	MKE-21-063-4.6-6.6-210818	8/18/2021	4.6 - 6.6		**2.96 J**	**0.015 J**	**0.059**	**0.061**	**0.22**	**0.32**	**0.32**	**0.31**	**0.19 J**
MKE-21-063	*MKE-21-063-6.6-7.2-210818*	8/18/2021	6.6 - 7.2		**2.77**	0.0095 U	0.011 U	0.0087 U	0.010 U	0.018 U	0.017 U	0.0098 U	0.080 U
MKE-21-064	MKE-21-064-00-01-210818	8/18/2021	0 - 1		**2.85**	0.031 U	**0.099 J**	**0.06 J**	**0.26**	**1**	**1**	**1.4**	**0.77**
MKE-21-064	MKE-21-064-01-03-210818	8/18/2021	1 - 3		**3.9**	**0.073 J**	**0.15**	**0.14**	**0.4**	**1.4**	**1.5**	**2.2**	**1.2**
MKE-21-064	MKE-21-064-03-05-210818	8/18/2021	3 - 5		**5.11**	**0.12**	**0.19**	**0.31**	**0.52**	**1.4**	**1.3**	**1.7**	**0.94**
MKE-21-064	MKE-21-064-05-6.4-210818	8/18/2021	5 - 6.4		**4.16 J**	**0.053**	**0.12**	**0.19**	**0.32**	**0.69**	**0.65**	**0.69**	**0.42**
MKE-21-065	MKE-21-065-00-01-210818	8/18/2021	0 - 1		**4.89**	**0.067**	**0.16**	**0.24**	**0.41**	**1.1**	**1.1**	**1.3**	**0.72**
MKE-21-065	MKE-21-065-01-03-210818	8/18/2021	1 - 3		**2.59**	0.010 U	**0.031 J**	**0.039 J**	**0.095**	**0.18**	**0.17**	**0.16**	**0.094 J**
MKE-21-065	MKE-21-065-03-05-210818	8/18/2021	3 - 5		**2.21 J**	0.0095 U	0.011 U	0.0087 U	0.010 U	0.018 U	0.017 U	0.0098 U	0.080 U
MKE-21-065	*MKE-21-065-05-07-210818*	8/18/2021	5 - 7		**5.04 J**	0.016 U	0.019 U	0.014 U	0.017 U	0.030 U	0.028 U	0.016 U	0.13 U
Milwaukee Bay – North and Summerfest Lagoon													
MKE-21-066	MKE-21-066-00-01-210819	8/19/2021	0 - 1		**3.19**	0.035 U	**0.052 J**	**0.058 J**	**0.22**	**0.8**	**0.68**	**1**	**0.61 J**
MKE-21-066	MKE-21-066-01-03-210819	8/19/2021	1 - 3		**3.24**	**0.08 J**	**0.13 J**	**0.15**	**0.33**	**1.4**	**1.3**	**2.1**	**1.2**
MKE-21-066	FD-202108190930	8/19/2021	1 - 3		**3.29**	**0.08 J**	**0.15**	**0.19**	**0.45**	**2.1**	**1.9**	**2.7**	**1.6**
MKE-21-066	MKE-21-066-03-05-210819	8/19/2021	3 - 5		**3.55**	**0.18**	**0.19**	**0.56**	**0.65**	**2.3**	**2**	**2.5**	**1.5**
MKE-21-066	MKE-21-066-05-07-210819	8/19/2021	5 - 7		**4.05**	**0.2**	**0.26**	**0.36**	**0.69**	**2**	**1.7**	**1.8**	**1.1**
MKE-21-066	MKE-21-066-07-8.2-210819	8/19/2021	7 - 8.2		**1.86 J**	0.0097 U	**0.017 J**	0.0089 U	**0.039 J**	**0.046**	**0.041**	**0.039 J**	0.081 U
MKE-21-066	FR-202108190945	8/19/2021	7 - 8.2		**3.18 J**	0.0096 U	**0.014 J**	0.0088 U	**0.037 J**	**0.04**	**0.034 J**	**0.035 J**	0.080 U
MKE-21-066	*MKE-21-066-8.2-8.7-210819*	8/19/2021	8.2 - 8.7		**2.29**	0.0090 U	0.011 U	0.0082 U	0.0098 U	0.017 U	0.016 U	0.0093 U	0.075 U
MKE-21-067	MKE-21-067-00-01-210818	8/18/2021	0 - 1		**5.02 J**	0.039 U	**0.066 J**	**0.055 J**	**0.21**	**0.79**	**0.91**	**1.3**	**0.74 J**
MKE-21-067	MKE-21-067-01-03-210818	8/18/2021	1 - 3		**4.49 J**	**0.14 J**	**0.21**	**0.29**	**0.65**	**2.7**	**2.8**	**4.1**	**2.4**
MKE-21-067	MKE-21-067-03-05-210818	8/18/2021	3 - 5		**5.78 J**	**0.36 J**	**0.32 J**	**0.75**	**1**	**3.8**	**3.3**	**4.6**	**2.8**
MKE-21-067	MKE-21-067-05-7.5-210818	8/18/2021	5 - 7.5		**5.51 J**	**0.34**	**0.29**	**0.7**	**0.84**	**2.4**	**2.1**	**2.4**	**1.4**
MKE-21-067	*MKE-21-067-7.7-9.7-210818*	8/18/2021	7.7 - 9.7		**2.66 J-**	0.0094 U	0.011 U	0.0086 U	0.010 U	0.018 U	0.017 U	**0.011 J**	0.079 U
MKE-21-068	MKE-21-068-00-01-210818	8/18/2021	0 - 1		**3.69**	0.069 U	**0.13 J**	**0.12 J**	**0.31**	**1.1**	**1.2**	**1.8**	**0.93 J**
MKE-21-068	MKE-21-068-01-03-210818	8/18/2021	1 - 3		**4.44 J**	**0.22 J**	**0.32 J**	**0.37**	**1**	**3.8**	**3.4**	**5.4**	**3**
MKE-21-068	FD-202108180910	8/18/2021	1 - 3		**3.78 J**	**0.25 J**	**0.29 J**	**0.41**	**0.81**	**3.2**	**3**	**4.7**	**2.7**
MKE-21-068	MKE-21-068-03-05-210818	8/18/2021	3 - 5		**5.44 J**	**0.94**	**0.82**	**0.8**	**2.2**	**5.1**	**4.3**	**5.4**	**3.4**
MKE-21-068	MKE-21-068-05-06-210818	8/18/2021	5 - 6		**6.32 J**	**0.85**	**0.66**	**2.5**	**2.4**	**6.8**	**5.5**	**6.2**	**3.8**
MKE-21-068	*MKE-21-068-06-7.2-210818*	8/18/2021	6 - 7.2		**3.68 J**	0.018 U	0.021 U	0.016 U	**0.039 J**	**0.063 J**	**0.038 J**	**0.043 J**	0.15 U

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	TOC (percent)	2-Methylnaphthalene (mg/kg) 91-57-6 0.201 0.603 1.005	Acenaphthene (mg/kg) 83-32-9 0.089 0.267 0.445	Acenaphthylene (mg/kg) 208-96-8 0.128 0.384 0.64	Anthracene (mg/kg) 120-12-7 0.845 2.535 4.225	Benzo(a)anthracene (mg/kg) 56-55-3 1.05 3.15 5.25	Benzo(a)pyrene (mg/kg) 50-32-8 1.45 4.35 7.25	Benzo(b)fluoranthene (mg/kg) 205-99-2 13.4 40.2 67	Benzo(e)pyrene (mg/kg) 192-97-2 1.45 4.35 7.25
MKE-21-069	MKE-21-069-00-01-210817	8/17/2021	0 - 1		**5.55 J-**	**0.17**	**0.51**	**0.42**	**1.7**	**6.2**	**5.6**	**7.9**	**4.4**
MKE-21-069	MKE-21-069-01-03-210817	8/17/2021	1 - 3		**6.06 J-**	**0.79**	**0.8**	**0.64**	**1.9**	**5.1**	**4.3**	**5.9**	**3.4**
MKE-21-069	MKE-21-069-03-4.8-210817	8/17/2021	3 - 4.8		**6.6 J-**	**1.5**	**1.2**	**1.7**	**3.2**	**6.5**	**5.2**	**5.8**	**3.4**
MKE-21-069	MKE-21-069-4.8-5.6-210817	8/17/2021	4.8 - 5.6		**3.44 J-**	**0.059**	**0.071**	**0.015 J**	**0.039**	**0.053**	**0.037 J**	**0.044**	0.076 U
MKE-21-069	*MKE-21-069-5.6-7.2-210817*	8/17/2021	5.6 - 7.2		**3.1 J-**	0.0090 U	0.011 U	0.0082 U	0.0097 U	0.017 U	0.016 U	0.0092 U	0.075 U
MKE-21-069	*FD-202108171320*	8/17/2021	5.6 - 7.2		**3.18 J-**	0.0090 U	0.011 U	0.0082 U	0.0097 U	0.017 U	0.016 U	0.0092 U	0.075 U
MKE-21-070	MKE-21-070-00-1.2-210819	8/19/2021	0 - 1.2		**3.15**	**0.032 J**	**0.12**	**0.1**	**0.35**	**0.89**	**0.74**	**0.93**	**0.53**
MKE-21-070	MKE-21-070-1.2-1.8-210819	8/19/2021	1.2 - 1.8		**3.71**	**0.046 J**	**0.21**	**0.095**	**0.61**	**1.8**	**1.7**	**2.6**	**1.3**
MKE-21-070	MKE-21-070-1.8-3.2-210819	8/19/2021	1.8 - 3.2		**6.25**	**0.16 J**	**1.2**	**0.34**	**3.7**	**8.2**	**6.8**	**7.9**	**4.6**
MKE-21-070	MKE-21-070-3.2-5.2-210819	8/19/2021	3.2 - 5.2		**3.73**	**0.11**	**0.24**	**0.19**	**0.63**	**2**	**1.7**	**2.4**	**1.5**
MKE-21-070	MKE-21-070-5.2-6.2-210819	8/19/2021	5.2 - 6.2		**4.64**	**0.17**	**0.24**	**0.2**	**0.79**	**1.7**	**1.6**	**2**	**1.3**
MKE-21-070	MKE-21-070-6.2-7.5-210819	8/19/2021	6.2 - 7.5		**3.02**	**0.059 J**	**0.22**	**0.11**	**0.63**	**1.4**	**1.1**	**1.3**	**0.81**
MKE-21-070	*MKE-21-070-7.5-8.5-210819*	8/19/2021	7.5 - 8.5		**2.19**	0.0097 U	0.012 U	0.0089 U	0.010 U	0.018 U	0.018 U	0.0099 U	0.081 U
MKE-21-071	MKE-21-071-00-01-210819	8/19/2021	0 - 1		**3.76**	**0.022 J**	**0.067**	**0.051 J**	**0.16**	**0.83**	**0.94**	**1.4**	**0.81**
MKE-21-071	MKE-21-071-01-03-210819	8/19/2021	1 - 3		**3.49**	**0.047 J**	**0.18**	**0.11**	**0.48**	**1.9**	**1.8**	**2.6**	**1.4**
MKE-21-071	MKE-21-071-03-4.8-210819	8/19/2021	3 - 4.8		**1.72**	0.0089 U	0.011 U	0.0081 U	**0.011 J**	**0.026 J**	**0.03 J**	**0.028 J**	0.074 U
MKE-21-071	*MKE-21-071-4.8-5.5-210819*	8/19/2021	4.8 - 5.5		**3.13**	0.010 U	0.012 U	0.0091 U	0.011 U	0.019 U	0.018 U	0.010 U	0.083 U
MKE-21-072	MKE-21-072-00-01-210819	8/19/2021	0 - 1		**5.75**	**0.017 J**	**0.058**	**0.041 J**	**0.13**	**0.41**	**0.41**	**0.48**	**0.31**
MKE-21-072	MKE-21-072-01-03-210819	8/19/2021	1 - 3		**3.4**	**0.035 J**	**0.13**	**0.081 J**	**0.32**	**1.3**	**1.3**	**2.1**	**1.1**
MKE-21-072	FD-202108191215	8/19/2021	1 - 3		**4.65**	**0.038 J**	**0.15**	**0.081**	**0.42**	**1.5**	**1.4**	**2.2**	**1.1**
MKE-21-072	MKE-21-072-03-3.5-210819	8/19/2021	3 - 3.5		**1.96**	**0.047**	**0.19**	**0.065**	**0.29**	**0.86**	**0.75**	**1**	**0.57**
MKE-21-072	*MKE-21-072-3.5-4.4-210819*	8/19/2021	3.5 - 4.4		**2.38**	0.0097 U	**0.012 J**	0.0088 U	0.010 U	**0.027 J**	**0.029 J**	**0.037 J**	0.081 U
MKE-21-073	MKE-21-073-00-01-210809	8/9/2021	0 - 1		**9.18**	0.054 U	0.065 U	**0.066 J**	**0.12 J**	**0.67**	**0.8**	**1.4**	**0.74 J**
MKE-21-073	MKE-21-073-01-03-210809	8/9/2021	1 - 3		**4.92**	**0.24**	**0.25**	**0.35**	**0.75**	**3**	**2.7**	**4**	**2.3**
MKE-21-073	MKE-21-073-03-5.1-210809	8/9/2021	3 - 5.1		**5.6**	**0.25**	**0.24**	**0.25**	**0.66**	**2.2**	**2.1**	**2.8**	**1.9**
MKE-21-074	MKE-21-074-00-01-210809	8/9/2021	0 - 1		**4.97**	0.031 U	**0.046 J**	**0.061 J**	**0.12 J**	**0.61**	**0.82**	**1.2**	**0.73**
MKE-21-074	MKE-21-074-01-2.7-210809	8/9/2021	1 - 2.7		**4.41**	**0.12**	**0.15**	**0.17**	**0.46**	**1.5**	**1.4**	**2.2**	**1.3**
MKE-21-074	MKE-21-074-2.7-4.3-210809	8/9/2021	2.7 - 4.3		**4.21**	0.0096 U	**0.026 J**	0.0087 U	**0.064**	**0.093**	**0.067**	**0.081**	0.080 U
MKE-21-075	MKE-21-075-00-01-210809	8/9/2021	0 - 1		**4.33**	0.038 U	**0.06 J**	**0.057 J**	**0.12 J**	**0.49**	**0.6**	**1**	**0.55 J**
MKE-21-075	MKE-21-075-01-03-210809	8/9/2021	1 - 3		**4.97**	**0.076 J**	**0.19**	**0.086 J**	**0.43**	**1.6**	**1.7**	**2.5**	**1.3**
MKE-21-075	MKE-21-075-03-05-210809	8/9/2021	3 - 5		**2.71**	0.0096 U	**0.12**	0.0087 U	**0.29**	**0.28**	**0.19**	**0.21**	**0.11 J**
Milwaukee Bay – South Adjacent to the Port Milwaukee													
MKE-21-076	MKE-21-076-00-01-210817	8/17/2021	0 - 1		**5.14 J-**	**0.058 J**	**0.22**	**0.17**	**0.57**	**2.2**	**2.2**	**3.2**	**1.7**
MKE-21-076	FD-202108170815	8/17/2021	0 - 1		**5.37 J-**	**0.061 J**	**0.19**	**0.19**	**0.59**	**2.4**	**2.4**	**3.3**	**1.8**
MKE-21-076	MKE-21-076-01-2.3-210817	8/17/2021	1 - 2.3		**4.44 J-**	**0.099**	**0.21**	**0.15**	**0.54**	**2.1**	**1.8**	**2.6**	**1.4**
MKE-21-076	MKE-21-076-2.3-3.3-210817	8/17/2021	2.3 - 3.3		**1.74 J-**	0.0092 U	**0.084**	**0.02 J**	**0.094**	**0.12**	**0.1**	**0.12**	**0.077 J**
MKE-21-076	MKE-21-076-3.3-4.4-210817	8/17/2021	3.3 - 4.4		**3.91 J-**	0.0099 U	0.012 U	0.0091 U	0.011 U	0.019 U	0.018 U	0.010 U	0.083 U
MKE-21-076	FR-202108170830	8/17/2021	3.3 - 4.4		**2.68 J-**	0.0099 U	0.012 U	**0.085**	**0.019 J**	0.019 U	0.018 U	0.010 U	0.083 U

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	TOC (percent)	2-Methylnaphthalene (mg/kg) 91-57-6 0.201 0.603 1.005	Acenaphthene (mg/kg) 83-32-9 0.089 0.267 0.445	Acenaphthylene (mg/kg) 208-96-8 0.128 0.384 0.64	Anthracene (mg/kg) 120-12-7 0.845 2.535 4.225	Benzo(a)anthracene (mg/kg) 56-55-3 1.05 3.15 5.25	Benzo(a)pyrene (mg/kg) 50-32-8 1.45 4.35 7.25	Benzo(b)fluoranthene (mg/kg) 205-99-2 13.4 40.2 67	Benzo(e)pyrene (mg/kg) 192-97-2 1.45 4.35 7.25
MKE-21-077	MKE-21-077-00-01-210817	8/17/2021	0 - 1		5.84 J-	0.18	0.28	0.3	0.68	2.9	2.6	3.5	2
MKE-21-077	MKE-21-077-01-03-210817	8/17/2021	1 - 3		3.15 J-	0.027 J	0.052	0.031 J	0.12	0.3	0.25	0.3	0.19 J
MKE-21-077	MKE-21-077-03-05-210817	8/17/2021	3 - 5		2.26 J-	0.016 J	0.06	0.017 J	0.085	0.14	0.096	0.11	0.080 U
MKE-21-077	MKE-21-077-05-07-210817	8/17/2021	5 - 7		4.42 J-	0.011 U	0.014 U	0.010 U	0.012 U	0.021 U	0.021 U	0.012 U	0.095 U
MKE-21-077	MKE-21-077-07-09-210817	8/17/2021	7 - 9		4.16 J-	0.011 U	0.013 U	0.010 U	0.012 U	0.021 U	0.020 U	0.011 U	0.093 U
MKE-21-077	MKE-21-077-09-11-210817	8/17/2021	9 - 11		5.18 J-	0.013 U	0.015 U	0.011 U	0.014 U	0.024 U	0.023 U	0.013 U	0.10 U
MKE-21-077	MKE-21-077-11-13-210817	8/17/2021	11 - 13		3.13 J-	0.011 U	0.014 U	0.010 U	0.012 U	0.022 U	0.021 U	0.012 U	0.096 U
MKE-21-077	MKE-21-077-13-14.2-210817	8/17/2021	13 - 14.2		3.26 J-	0.011 U	0.013 U	0.0099 U	0.012 U	0.020 U	0.020 U	0.011 U	0.090 U
MKE-21-078	MKE-21-078-00-01-210817	8/17/2021	0 - 1		5.01 J-	0.055 J	0.2	0.11	0.46	1.8	1.6	2.2	1.2
MKE-21-078	MKE-21-078-01-03-210817	8/17/2021	1 - 3		5.62 J-	0.13	0.18	0.16	0.52	1.9	1.7	2.3	1.4
MKE-21-078	MKE-21-078-03-05-210817	8/17/2021	3 - 5		4.52 J-	0.11 J	0.15	0.24	0.38	1.4	1.4	1.9	1.2
MKE-21-078	FD-202108171430	8/17/2021	3 - 5		4.81 J-	0.091	0.14	0.14	0.28	1.2	1.1	1.6	0.93
MKE-21-078	MKE-21-078-05-07-210817	8/17/2021	5 - 7		2.96 J-	0.032 J	0.032 J	0.044 J	0.082	0.22	0.17	0.23	0.14 J
MKE-21-078	MKE-21-078-07-8.7-210817	8/17/2021	7 - 8.7		3.71 J-	0.0094 U	0.011 U	0.0086 U	0.010 U	0.018 U	0.017 U	0.018 J	0.078 U
MKE-21-078	MKE-21-078-8.7-10.7-210817	8/17/2021	8.7 - 10.7		1.9	0.0091 U	0.011 U	0.0083 U	0.0099 U	0.017 U	0.016 U	0.0093 U	0.076 U
MKE-21-078	MKE-21-078-10.7-12.7-210817	8/17/2021	10.7 - 12.7		2.65 J-	0.0091 U	0.011 U	0.0083 U	0.0099 U	0.017 U	0.017 U	0.0094 U	0.076 U
MKE-21-078	MKE-21-078-12.7-14.7-210817	8/17/2021	12.7 - 14.7		3.19 J-	0.0092 U	0.011 U	0.0084 U	0.010 U	0.017 U	0.017 U	0.0095 U	0.077 U
MKE-21-078	MKE-21-078-14.7-15.7-210817	8/17/2021	14.7 - 15.7		2.97 J-	0.0089 U	0.011 U	0.0081 U	0.0096 U	0.017 U	0.016 U	0.0091 U	0.074 U
South Menomonee Canal – East													
SMC-21-001	SMC-21-001-00-01-210821	8/21/2021	0 - 1		6.27	0.12 U	0.15 U	0.17 J	0.32 J	2.3	2.7	5.4	3
SMC-21-001	SMC-21-001-01-2.5-210821	8/21/2021	1 - 2.5		5.82	0.098 U	0.17 J	0.16 J	0.51	3.3	3.4	6	3.2
SMC-21-001	FD-202108210755	8/21/2021	1 - 2.5		5.76	0.079 U	0.18 J	0.18 J	0.51	2.9	3.2	5.8	3.1
SMC-21-001	SMC-21-001-2.5-04-210821	8/21/2021	2.5 - 4		5.28 J-	0.17 U	0.31 J	0.16 U	0.76	2.9	3	4.3	2.5 J
SMC-21-001	SMC-21-001-04-06-210821	8/21/2021	4 - 6		6.06 J-	0.36	0.76	0.3 J	1.5	4.3	3.6	5.7	3.2
SMC-21-001	SMC-21-001-06-08-210821	8/21/2021	6 - 8		8.26 J-	0.76	0.94	0.6	2.9	7.5	6.2	9	5.9
SMC-21-001	SMC-21-001-08-8.3-210821	8/21/2021	8 - 8.3		8.88 J-	0.64	0.72	0.42	2.4	6.3	4.6	7.4	4.4
SMC-21-002	SMC-21-002-00-01-210821	8/21/2021	0 - 1		6.58 J-	0.12 U	0.15 U	0.11 J	0.32 J	2	2.6	4.8	2.5
SMC-21-002	SMC-21-002-01-2.5-210821	8/21/2021	1 - 2.5		2.75 J-	0.059 U	0.11 J	0.092 J	0.27	1.3	1.5	2.4	1.4
SMC-21-002	FD-202108211055	8/21/2021	1 - 2.5		3.33 J-	0.057 U	0.091 J	0.083 J	0.24	1.1	1.3	2	1.2
SMC-21-002	SMC-21-002-2.5-04-210821	8/21/2021	2.5 - 4		0.456	0.021 U	0.065 J	0.049 J	0.16	0.59	0.57	0.92	0.51
SMC-21-002	SMC-21-002-04-4.9-210821	8/21/2021	4 - 4.9		2.86 J-	0.18 J	0.27	0.12 J	0.69	2.3	2.1	2.8	1.7
SMC-21-003	SMC-21-003-00-01-210821	8/21/2021	0 - 1		7.9 J-	0.12 U	0.15 U	0.12 J	0.26 J	1.7	2.3	4.1	2.4 J
SMC-21-003	SMC-21-003-01-2.5-210821	8/21/2021	1 - 2.5		6.15 J-	0.11 U	0.14 U	0.13 J	0.36 J	2.1	2.6	4.8	2.6
SMC-21-003	SMC-21-003-2.5-04-210821	8/21/2021	2.5 - 4		5.61	0.053 J	0.16 J	0.16 J	0.44	2.3	2.5	4.6	2.4
SMC-21-003	SMC-21-003-04-5.1-210821	8/21/2021	4 - 5.1		4.15 J-	0.096 J	0.2 J	0.19 J	0.52	2.4	2.4	4.3	2.2
SMC-21-003	SMC-21-003-5.1-7.1-210821	8/21/2021	5.1 - 7.1		4.98	0.014 U	0.017 U	0.013 U	0.022 J	0.07	0.048 J	0.066	0.12 U
SMC-21-003	SMC-21-003-7.1-9.1-210821	8/21/2021	7.1 - 9.1		4.89	0.014 U	0.017 U	0.013 U	0.015 U	0.027 U	0.026 U	0.015 U	0.12 U
SMC-21-003	SMC-21-003-9.1-9.4-210821	8/21/2021	9.1 - 9.4		4.94	0.015 U	0.018 U	0.014 U	0.017 U	0.029 U	0.028 U	0.016 U	0.13 U
SMC-21-004	SMC-21-004-00-01-210821	8/21/2021	0 - 1		8.1	0.67	0.69	0.47	1.9	6	4.2	6.2	3.6
SMC-21-004	SMC-21-004-01-2.5-210821	8/21/2021	1 - 2.5		9.85	0.87	0.83	0.58	2.4	7.2	5.5	8.4	5.2
SMC-21-004	SMC-21-004-2.5-04-210821	8/21/2021	2.5 - 4		13.5	1.4 J	1.3 J	0.91 J	3.5	10	10	11	11
SMC-21-004	SMC-21-004-04-06-210821	8/21/2021	4 - 6		14.4	1.3	1	0.65	3.2	8.2	6.4	10	6.1
SMC-21-004	SMC-21-004-06-08-210821	8/21/2021	6 - 8		8.22	0.69	0.61	0.39	1.5	3.9	2.7	3.9	2.2
SMC-21-004	SMC-21-004-08-8.8-210821	8/21/2021	8 - 8.8		6	0.36	0.29	0.18	0.67	1.7	1.2	1.7	0.98

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	TOC (percent)	2-Methylnaphthalene (mg/kg) 91-57-6 0.201 0.603 1.005	Acenaphthene (mg/kg) 83-32-9 0.089 0.267 0.445	Acenaphthylene (mg/kg) 208-96-8 0.128 0.384 0.64	Anthracene (mg/kg) 120-12-7 0.845 2.535 4.225	Benzo(a)anthracene (mg/kg) 56-55-3 1.05 3.15 5.25	Benzo(a)pyrene (mg/kg) 50-32-8 1.45 4.35 7.25	Benzo(b)fluoranthene (mg/kg) 205-99-2 13.4 40.2 67	Benzo(e)pyrene (mg/kg) 192-97-2 1.45 4.35 7.25
South Menomonee Canal – Middle													
SMC-21-005	SMC-21-005-00-01-210820	8/20/2021	0 - 1		**4.93**	0.098 U	**0.2 J**	**0.25 J**	**0.59**	**3.3**	**4**	**7.3**	**3.8**
SMC-21-005	SMC-21-005-01-2.5-210820	8/20/2021	1 - 2.5		**6.17**	**0.12 J**	**0.29**	**0.2 J**	**0.65**	**2.8**	**2.9**	**4.5**	**2.5**
SMC-21-005	SMC-21-005-2.5-04-210820	8/20/2021	2.5 - 4		**7.54**	**0.29 J**	**0.65**	**0.37**	**1.3**	**4.9**	**4.9**	**8.1**	**4.4**
SMC-21-005	SMC-21-005-04-06-210820	8/20/2021	4 - 6		**5.65**	**0.45**	**0.96**	**0.49**	**2.6**	**8.1**	**7**	**11**	**6.2**
SMC-21-005	SMC-21-005-06-6.7-210820	8/20/2021	6 - 6.7		**4.8**	**0.49**	**0.43**	**0.29**	**1.1**	**3.2**	**2.7**	**3.9**	**2.2**
SMC-21-005	*SMC-21-005-6.7-8.7-210820*	8/20/2021	6.7 - 8.7		**4.77**	0.014 U	0.017 U	0.013 U	0.015 U	**0.038 J**	**0.033 J**	**0.052 J**	0.12 U
SMC-21-005	*SMC-21-005-8.7-10.7-210820*	8/20/2021	8.7 - 10.7		**2.57**	0.013 U	0.016 U	0.012 U	0.014 U	0.025 U	0.024 U	**0.02 J**	0.11 U
SMC-21-005	*SMC-21-005-10.7-12.7-210820*	8/20/2021	10.7 - 12.7		**3.01**	0.012 U	0.015 U	0.011 U	0.013 U	0.023 U	0.022 U	0.013 U	0.10 U
SMC-21-005	*FR-202108201505*	8/20/2021	10.7 - 12.7		**2.37**	0.012 U	0.015 U	0.011 U	0.013 U	0.023 U	0.022 U	**0.015 J**	0.10 U
SMC-21-006	SMC-21-006-0.1-01-210821	8/21/2021	0.1 - 1		**7.37**	**0.4**	**0.51**	**0.31**	**1.1**	**3.9**	**3.4**	**5**	**2.7**
SMC-21-006	SMC-21-006-01-2.5-210821	8/21/2021	1 - 2.5		**8.18**	**0.63**	**0.57**	**0.55**	**1.3**	**3.4**	**2.7**	**4**	**2.5**
SMC-21-006	SMC-21-006-03-04-210821	8/21/2021	3 - 4		**2.89**	0.0096 U	0.011 U	0.0087 U	0.010 U	0.018 U	0.017 U	0.0098 U	0.080 U
SMC-21-006	SMC-21-006-04-06-210821	8/21/2021	4 - 6		**2.37**	0.0093 U	0.011 U	0.0085 U	0.010 U	0.018 U	0.017 U	0.0095 U	0.078 U
SMC-21-006	SMC-21-006-06-08-210821	8/21/2021	6 - 8		**1.91**	0.0094 U	0.011 U	0.0085 U	0.010 U	0.018 U	0.017 U	0.0096 U	0.078 U
SMC-21-006	SMC-21-006-08-10-210821	8/21/2021	8 - 10		**2.27**	0.0091 U	0.011 U	0.0083 U	0.0098 U	0.017 U	0.016 U	0.0093 U	0.076 U
SMC-21-006	SMC-21-006-10-12-210821	8/21/2021	10 - 12		**2.73**	0.0092 U	0.011 U	0.0084 U	0.0099 U	0.017 U	0.017 U	0.0094 U	0.077 U
SMC-21-006	SMC-21-006-12-12.8-210821	8/21/2021	12 - 12.8		**2.84**	0.0095 U	0.011 U	0.0086 U	0.010 U	0.018 U	0.017 U	0.0097 U	0.079 U
SMC-21-007	SMC-21-007-00-01-210821	8/21/2021	0 - 1		**5.08**	0.015 U	0.017 U	0.013 U	0.016 U	0.027 U	0.026 U	0.015 U	0.12 U
SMC-21-007	SMC-21-007-01-2.5-210821	8/21/2021	1 - 2.5		**6.16**	0.015 U	0.018 U	0.013 U	0.016 U	0.028 U	0.027 U	0.015 U	0.12 U
SMC-21-007	FD-202108211310	8/21/2021	1 - 2.5		**6**	0.015 U	0.018 U	0.013 U	0.016 U	0.027 U	0.026 U	0.015 U	0.12 U
SMC-21-007	SMC-21-007-2.5-04-210821	8/21/2021	2.5 - 4		**6**	0.014 U	0.017 U	0.013 U	0.015 U	0.026 U	0.025 U	0.014 U	0.12 U
SMC-21-007	SMC-21-007-04-06-210821	8/21/2021	4 - 6		**4.65**	0.011 U	0.014 U	0.010 U	0.012 U	0.022 U	0.021 U	0.012 U	0.096 U
SMC-21-007	SMC-21-007-06-7.8-210821	8/21/2021	6 - 7.8		**3.64**	0.011 U	0.013 U	0.0096 U	0.011 U	0.020 U	0.019 U	0.011 U	0.088 U
South Menomonee Canal – West													
SMC-21-008	SMC-21-008-01-1.5-210821	8/21/2021	1 - 1.5		**2.98**	**0.16 J**	**0.17**	**0.11 J**	**0.5**	**1.7**	**1.5**	**2.7**	**1.4**
SMC-21-008	*SMC-21-008-1.5-2.5-210821*	8/21/2021	1.5 - 2.5		**3.78**	0.014 U	0.017 U	0.013 U	0.015 U	**0.035 J**	**0.039 J**	**0.054 J**	0.12 U
SMC-21-008	*SMC-21-008-2.5-04-210821*	8/21/2021	2.5 - 4		**4.07**	0.014 U	0.017 U	0.013 U	0.015 U	**0.03 J**	**0.027 J**	**0.051 J**	0.12 U
SMC-21-008	*SMC-21-008-04-06-210821*	8/21/2021	4 - 6		**2.71**	0.013 U	0.016 U	0.012 U	0.014 U	0.025 U	0.024 U	0.013 U	0.11 U
SMC-21-008	*SMC-21-008-06-08-210821*	8/21/2021	6 - 8		**2.99**	0.013 U	0.015 U	0.011 U	0.014 U	0.024 U	0.023 U	0.013 U	0.10 U
SMC-21-008	*SMC-21-008-08-10-210821*	8/21/2021	8 - 10		**4.46**	0.012 U	0.015 U	0.011 U	0.013 U	0.023 U	0.022 U	0.013 U	0.10 U
SMC-21-008	*SMC-21-008-10-10.6-210821*	8/21/2021	10 - 10.6		**2.31**	0.0094 U	0.011 U	0.0086 U	0.010 U	0.018 U	0.017 U	0.0097 U	0.079 U
SMC-21-008	*SMC-21-008-10.6-12.6-210821*	8/21/2021	10.6 - 12.6		**3.55**	0.0094 U	0.011 U	0.0086 U	0.010 U	0.018 U	0.017 U	0.0096 U	0.078 U
SMC-21-008	*SMC-21-008-12.6-13.6-210821*	8/21/2021	12.6 - 13.6		**2.68**	0.0093 U	0.011 U	0.0085 U	0.010 U	0.018 U	0.017 U	0.0096 U	0.078 U
South Menomonee Canal – Entrance to Burnham Canal													
SMC-21-010	SMC-21-010-00-01-210811	8/11/2021	0 - 1		**9.14 J-**	0.20 U	**0.76 J**	**0.33 J**	**1.8**	**6.9**	**7.8**	**13**	**6.7**
SMC-21-010	SMC-21-010-01-1.6-210811	8/11/2021	1 - 1.6		**6 J-**	**0.22 J**	**1.3**	**0.42**	**2.8**	**10**	**10**	**13**	**7.2**
SMC-21-011	SMC-21-011-00-01-210811	8/11/2021	0 - 1		**5.72 J-**	**0.074 J**	**0.32**	**0.1 J**	**0.8**	**2.3**	**1.9**	**2.4**	**1.3**
SMC-21-011	SMC-21-011-01-02-210811	8/11/2021	1 - 2		**5.84 J-**	**0.74 J**	**2.7**	**0.53 J**	**5.7 J**	**13 J**	**11 J**	**14 J**	**7.3 J**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Benzo(g,h,i)perylene (mg/kg) 191-24-2 3.2 9.6 16	Benzo(k)fluoranthene (mg/kg) 207-08-9 13.4 40.2 67	Chrysene (mg/kg) 218-01-9 1.29 3.87 6.45	Dibenzo(a,h)anthracene (mg/kg) 53-70-3 0.135 0.405 0.675	Fluoranthene (mg/kg) 206-44-0 2.23 6.69 11.15	Fluorene (mg/kg) 86-73-7 0.536 1.608 2.68	Indeno(1,2,3-c,d)pyrene (mg/kg) 193-39-5 3.2 9.6 16	Naphthalene (mg/kg) 91-20-3 0.561 1.683 2.805	Phenanthrene (mg/kg) 85-01-8 1.17 3.51 5.85
Upstream Kinnickinnic River													
KKR-21-001	KKR-21-001-210811	8/11/2021	0 - 0.3		0.0092 U	0.013 UJ	0.024 UJ	0.027 U	**0.013 J**	0.0084 U	0.021 U	0.0083 U	0.011 U
KKR-21-002	KKR-21-002-210813	8/13/2021	0 - 0.1		**1.5**	**0.55 J**	**1.9**	0.85 U	**3.7**	0.26 U	**1.1 J**	0.26 U	**2.3**
KKR-21-003	KKR-21-003-210811	8/11/2021	0 - 0.3		**1.9**	**1.1 J**	**2.8**	0.88 U	**5.7**	0.27 U	**1.6**	0.27 U	**3.3**
KKR-21-004	KKR-21-004-00-0.6-210811	8/12/2021	0 - 0.6		**0.26**	**0.18**	**0.4**	**0.063**	**0.78**	**0.023 J**	**0.23**	0.0081 U	**0.39**
KKR-21-004	KKR-21-004-0.6-1.3-210811	8/12/2021	0.6 - 1.3		**0.3**	**0.16**	**0.42**	**0.072**	**0.81**	**0.022 J**	**0.27**	0.0083 U	**0.34**
KKR-21-005	KKR-21-005-00-0.5-210812	8/12/2021	0 - 0.5		0.0088 U	0.012 U	0.023 U	0.026 U	0.011 U	0.0080 U	0.020 U	0.0079 U	0.011 U
KKR-21-006	KKR-21-006-00-0.4-210812	8/12/2021	0 - 0.4		**0.015 J**	0.012 U	0.022 U	0.026 U	**0.03 J**	0.0079 U	0.020 U	0.0078 U	**0.013 J**
KKR-21-007	KKR-21-007-210811	8/11/2021	0 - 0.3		**0.43**	**0.2**	**0.66**	**0.099**	**1.3 J**	**0.08 J**	**0.36**	0.017 U	**0.87**
KKR-21-007	FD-202108110815	8/11/2021	0 - 0.3		**0.28**	**0.19**	**0.39**	**0.057 J**	**0.67 J**	**0.024 J**	**0.23**	0.017 U	**0.31**
KKR-21-008	KKR-21-008-210811	8/11/2021	0 - 0.3		**6.9**	**5.1**	**12**	**1.8**	**23**	**2.2**	**6.1**	**0.19 J**	**18**
KKR-21-009	KKR-21-009-210811	8/11/2021	0 - 0.3		**0.31**	**0.2**	**0.37**	**0.08**	**0.63**	**0.025 J**	**0.25**	0.016 U	**0.29**
KKR-21-010	FD-202108121455	8/12/2021	0 - 0.1		0.0094 U	0.013 U	0.024 U	0.028 U	**0.015 J**	0.0086 U	0.022 U	0.0085 U	0.012 U
KKR-21-010	KKR-21-010-00-0.1-210812	8/12/2021	0 - 0.1		**0.015 J**	**0.018 J**	**0.041 J**	0.028 U	**0.085**	0.0086 U	0.022 U	0.0085 U	**0.049**
KKR-21-011	KKR-21-011-00-0.2-210812	8/12/2021	0 - 0.2		**4.7**	**2.3**	**5.8**	**1**	**12**	**0.44 J**	**4.2**	0.15 U	**6.9**
KKR-21-012	KKR-21-012-00-0.2-210812	8/12/2021	0 - 0.2		**0.28**	**0.14 J**	**0.4**	0.14 U	**0.62**	0.042 U	**0.26**	0.042 U	**0.3**
KKR-21-013	KKR-21-013-00-0.1-210813	8/13/2021	0 - 0.1		**0.6**	**0.39 J**	**0.91**	0.26 U	**1.5**	0.080 U	**0.6**	0.079 U	**0.89**
KKR-21-014	KKR-21-014-00-0.25-210812	8/12/2021	0 - 0.25		**3**	**1.9**	**4.4**	**0.69**	**11**	**0.53 J**	**2.7**	0.13 U	**6.6**
KKR-21-015	KKR-21-015-00-0.25-210812	8/12/2021	0 - 0.25		**0.6**	**0.38 J**	**0.88**	0.25 U	**1.7**	**0.078 J**	**0.53**	0.076 U	**0.98**
KKR-21-016	KKR-21-016-00-0.2-210812	8/12/2021	0 - 0.2		**2 J**	**1.2 J**	**2.5 J**	**0.46 J**	**5.2 J**	**0.21 J**	**1.8 J**	0.10 U	**2.9 J**
KKR-21-016	FD-202108121430	8/12/2021	0 - 0.2		**4.3 J**	**2.3 J**	**5.9 J**	**0.98 J**	**12 J**	**0.54 J**	**3.5 J**	0.15 U	**6.9 J**
KKR-21-017	KKR-21-017-00-0.1-210813	8/13/2021	0 - 0.1		**2.9**	**1.3**	**3.8**	**0.71**	**5.5**	**0.14 J**	**2.4**	0.079 U	**2.4**
KKR-21-018	KKR-21-018-00-0.3-210812	8/12/2021	0 - 0.3		**0.54**	**0.3**	**0.69**	0.13 U	**1.4**	**0.046 J**	**0.53**	0.040 U	**0.49**
KKR-21-019	KKR-21-019-210813	8/13/2021	0 - 0.1		**2.9**	**1.9**	**4**	**0.77**	**6.5**	**0.26 J**	**2.6**	0.087 U	**3.1**
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1		**1.9**	**1**	**2.6**	**0.49**	**4.2**	**0.14 J**	**1.6**	0.055 U	**1.8**
KKR-21-021	KKR-21-021-210813	8/13/2021	0 - 0.1		**1.6**	**0.92 J**	**2.4**	0.78 U	**4**	0.24 U	**1.5**	0.24 U	**2.1**
Kinnickinnic River – Reach 1													
KKR-21-024	KKR-21-024-00-0.5-210806	8/6/2021	0 - 0.5		**0.77**	**0.48**	**0.94**	**0.19**	**1.9**	**0.05 J**	**0.73**	**0.073 J**	**0.76**
KKR-21-024	KKR-21-024-0.5-1.25-210806	8/6/2021	0.5 - 1.25		**0.19**	**0.1**	**0.22**	**0.05**	**0.43**	**0.018 J**	**0.18**	**0.02 J**	**0.19**
KKR-21-025	KKR-21-025-00-01-210806	8/6/2021	0 - 1		**4.9**	**2.5**	**6**	**1.3**	**13**	**0.54 J**	**4.6**	0.22 U	**6.3**
KKR-21-026	KKR-21-026-0.2-01-210806	8/6/2021	0.2 - 1		**12**	**8.4**	**23**	**3.6**	**55**	**6.6**	**12**	**0.53 J**	**43**
KKR-21-026	KKR-21-026-01-1.7-210806	8/6/2021	1 - 1.7		**19**	**14**	**35**	**5.7**	**93**	**9.9**	**19**	**1.6**	**70**
KKR-21-028	KKR-21-028-00-0.8-210806	8/6/2021	0 - 0.8		**4**	**1.9**	**4.7**	**1**	**11**	**0.27 J**	**3.8**	0.13 U	**4.5**
KKR-21-028	FD-202108061200	8/6/2021	0 - 0.8		**3.9**	**2**	**4.5**	**0.96**	**9.9**	**0.3 J**	**3.6**	0.13 U	**4.6**
KKR-21-029	KKR-21-029-210810	8/10/2021	0 - 0.3		**4.4**	**2.5**	**6.4**	0.65 U	**9.6**	**0.37 J**	**4.1**	0.20 U	**4.3**
KKR-21-031	KKR-21-031-210810	8/10/2021	0 - 0.3		**1**	**0.75**	**2**	**0.28**	**4**	**0.27**	**0.86**	0.040 U	**2.2**
KKR-21-032	KKR-21-032-00-0.7-210810	8/10/2021	0 - 0.7		**4.2**	**2.4**	**5**	**1**	**8.6**	**0.38**	**3.7**	**0.096 J**	**4.1**
KKR-21-032	KKR-21-032-0.7-02-210810	8/10/2021	0.7 - 2		**4.2**	**2.8**	**5.9**	**0.91**	**9**	**0.28 J**	**3.8**	0.078 U	**3.6**
KKR-21-033	KKR-21-033-00-0.4-210810	8/10/2021	0 - 0.4		**6.4**	**4.3**	**9.4**	**1.4**	**16**	**0.71 J**	**5.7**	**0.16 J**	**7.2**
KKR-21-033	KKR-21-033-0.4-1.2-210810	8/10/2021	0.4 - 1.2		**11**	**7.6**	**17**	**2.3**	**29**	**1.7**	**11**	**0.21 J**	**12**
KKR-21-033	FR-202108101135	8/10/2021	0.4 - 1.2		**11**	**9**	**16**	**3**	**26**	**1.7**	**10**	**0.24 J**	**13**
KKR-21-034	KKR-21-034-00-1.0-210808	8/8/2021	0 - 1		**5.3**	**2.5**	**5.9**	**1.3**	**13**	**0.47 J**	**5.1**	0.16 U	**6.2**
KKR-21-034	KKR-21-034-01-1.2-210808	8/8/2021	1 - 1.2		**2.1**	**0.89**	**2.2**	**0.51**	**4.8**	**0.17 J**	**1.9**	0.043 U	**2.2**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)
				PEC	191-24-2 3.2	207-08-9 13.4	218-01-9 1.29	53-70-3 0.135	206-44-0 2.23	86-73-7 0.536	193-39-5 3.2	91-20-3 0.561	85-01-8 1.17
				3 x PEC	9.6	40.2	3.87	0.405	6.69	1.608	9.6	1.683	3.51
				5 x PEC	16	67	6.45	0.675	11.15	2.68	16	2.805	5.85
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1		14	9.4	23	4.1	55	5.8	14	0.55 J	37
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3		12	7.5	19	3.7	42	4.4	12	0.34 J	31
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5		14	9.6	25	4.1	56	4.6	14	0.47 J	36
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8		9.4	4.8	15	2.5	35	2.5	8.7	0.43 J	20
KKR-21-036	KKR-21-036-00-0.8-210810	8/10/2021	0 - 0.8		3.4	1.4	3.5	0.83	6.5	0.23 J	3.1	0.071 J	2.7
KKR-21-036	KKR-21-036-0.8-1.2-210810	8/10/2021	0.8 - 1.2		4.2	2.3	5.7	0.95	9.6	0.4 J	3.9	0.11 U	4.2
KKR-21-036	FD-202108101200	8/10/2021	0.8 - 1.2		4.1	2.8	5.3	1	8.7	0.5 J	3.7	0.11 J	4
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1		15	8.8	25	4.5	59	7	14	0.39 J	44
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3		10	5.2	17	3.1	41	3.4	10	0.20 U	24
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5		10	7.3	20	3	40	3.6	8.7	0.42 J	27
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5		10	7.1	18	2.8	37	3.3	9.4	0.55 J	25
KKR-21-038	KKR-21-038-00-01-210807	8/7/2021	0 - 1		11	9.1	24	3.1	48	5.1	11	0.37 J	35
KKR-21-038	KKR-21-038-01-03-210807	8/7/2021	1 - 3		2.2 J	1.9 J	4.6 J	0.93 J	9.3 J	0.77 J	2.3 J	0.11 UJ	6 J
KKR-21-038	FD-202108071010	8/7/2021	1 - 3		12 J	9.3 J	26 J	3.9 J	50 J	5.6 J	11 J	0.42 J	36 J
KKR-21-038	KKR-21-038-03-4.9-210807	8/7/2021	3 - 4.9		9	10	22 J	2.4	45	4.9	8.3	0.31 J	33
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4		6.3	3.9	10	1.4	21	1.7	6.3	0.25 U	14
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7		14	11	24	3.5	52	4.6	12	0.41 J	37
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3		10	7.1	21	3	43	4.2	9.3	0.25 J	30
KKR-21-040	KKR-21-040-00-0.9-210810	8/10/2021	0 - 0.9		3.7	2.3	3.9	0.73	6.5	0.26 J	3.4	0.08 J	3
KKR-21-040	KKR-21-040-0.9-1.8-210810	8/10/2021	0.9 - 1.8		3.7	2.2	5.5	0.91	8.3	0.27 J	3.4	0.092 U	3.2
KKR-21-041	KKR-21-041-00-1.3-210807	8/7/2021	0 - 1.3		2	1.4	3.1	0.55 J	6.4	0.52 J	2	0.17 U	3.7
KKR-21-041	KKR-21-041-1.3-2.3-210807	8/7/2021	1.3 - 2.3		4.9	3.4	9.6	1.4	21	1.9	4.6	0.19 J	14
KKR-21-042	KKR-21-042-00-0.9-210808	8/8/2021	0 - 0.9		0.2	0.16	0.37	0.063	0.74	0.052	0.19	0.021 J	0.74
KKR-21-042	FR-202108081210	8/8/2021	0 - 0.9		0.087	0.07	0.12	0.026 U	0.22	0.0079 U	0.076	0.018 J	0.092
KKR-21-043	KKR-21-043-00-01-210807	8/7/2021	0 - 1		5.4	3.7	8.1	1.4	23	2.1	5.2	0.24 J	16
KKR-21-043	KKR-21-043-01-03-210807	8/7/2021	1 - 3		8.1	5.9	16	2.5	36	4.2	7.7	0.35 J	28
KKR-21-043	KKR-21-043-03-05-210807	8/7/2021	3 - 5		13	10	28	3.7	64	5.8	12	0.49 J	44
KKR-21-043	KKR-21-043-05-5.9-210807	8/7/2021	5 - 5.9		9.9	7	18	2.6	40	2.8	9.3	0.42 J	23
KKR-21-044	KKR-21-044-0.2-0.9-210808	8/8/2021	0.2 - 0.9		0.21	0.15	0.38	0.067	0.91	0.061	0.2	0.0080 U	0.7
KKR-21-044	KKR-21-044-0.9-1.1-210808	8/8/2021	0.9 - 1.1		2.8	2	5.1	0.83 J	10	0.67 J	2.5	0.2 J	7.1
KKR-21-045	KKR-21-045-00-1.3-210808	8/8/2021	0 - 1.3		2.1	1.2	1.8	0.53 U	2.6	0.16 U	1.7	0.16 U	1.2
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3		2.9	2	5.7	0.78	13	1.3	2.7	0.12 J	9.2
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8		10	7.5	21	3	48	4.2	9.2	0.27 J	33
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4		8.9	5.1	16	2.3	36	3.8	7.9	0.2 J	26
KKR-21-048	KKR-21-048-00-01-210808	8/8/2021	0 - 1		6.1	4.1	9.1	1.5	22	1.2	5.3	0.56 J	15
KKR-21-048	KKR-21-048-01-1.8-210808	8/8/2021	1 - 1.8		1.7	1.4	3.5	0.61	8.8	0.75	1.8	0.076 U	5.8
KKR-21-049	KKR-21-049-00-0.8-210808	8/8/2021	0 - 0.8		7.6	5.3	13	1.9	37	3.3	7.1	0.51 J	28
KKR-21-049	KKR-21-049-0.8-03-210808	8/8/2021	0.8 - 3		9.9 J	8.1	19 J	2.5	40	2.3	8.8 J	0.33 J	20 J
KKR-21-049	KKR-21-049-03-4.4-210808	8/8/2021	3 - 4.4		7.2	5.1	13	1.9	26	1.5	6.5	0.46 J	14
KKR-21-049	FD-202108080940	8/8/2021	3 - 4.4		9.7	7.3	16	2.3	32	1.6	8.5	0.45 J	16
KKR-21-050	KKR-21-050-00-01-210808	8/8/2021	0 - 1		5.2	1 J	6.8	1.4 J	13	0.44 J	4.8	0.29 U	4.8
KKR-21-050	KKR-21-050-01-03-210808	8/8/2021	1 - 3		7.9	5.8	12	1.8	28	1.9	6.9	0.14 J	16
KKR-21-050	KKR-21-050-03-05-210808	8/8/2021	3 - 5		8.2	5.8	14	2.1	31	2.8	7.3	0.28 J	21
KKR-21-050	KKR-21-050-05-6.8-210808	8/8/2021	5 - 6.8		5.9	5	12	1.6	25	2.2	5.6	0.21 J	16
KKM-21-001	KKM-21-001-210816	8/16/2021	0 - 0.1		3.5	2.2	5.9	0.82	13	0.84	3.1	0.2 J	10

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)
				PEC	191-24-2 3.2	207-08-9 13.4	218-01-9 1.29	53-70-3 0.135	206-44-0 2.23	86-73-7 0.536	193-39-5 3.2	91-20-3 0.561	85-01-8 1.17
				3 x PEC	9.6	40.2	3.87	0.405	6.69	1.608	9.6	1.683	3.51
				5 x PEC	16	67	6.45	0.675	11.15	2.68	16	2.805	5.85
KKM-21-003	KKM-21-003-210816	8/16/2021	0 - 0.1		**2.5**	**1.3**	**3.8**	**0.44**	**5.7**	**0.25 J**	**2.3**	0.067 U	**2.4**
KKM-21-004	KKM-21-004-210816	8/16/2021	0 - 0.1		**2.1 J**	**1.4 J**	**2.1 J**	1.8 U	**2.7 J**	0.54 U	**2.2 J**	0.54 U	**1.4 J**
KKM-21-005	KKM-21-005-210816	8/16/2021	0 - 0.1		0.21 U	0.29 U	0.53 U	0.62 U	**0.62 J**	0.19 U	0.48 U	0.19 U	**0.4 J**
Kinnickinnic River – Reach 2													
KKR-21-051	KKR-21-051-00-01-210805	8/5/2021	0 - 1		**6.1**	**2.6**	**7**	**1.6**	**15 J+**	**0.55**	**6.2**	**0.16 J**	**4.9**
KKR-21-051	KKR-21-051-01-03-210805	8/5/2021	1 - 3		**12**	**8.2**	**18**	**3**	**44**	**2.7**	**11**	**0.35 J**	**17**
KKR-21-051	KKR-21-051-03-05-210805	8/5/2021	3 - 5		**8.3**	**6**	**17**	**2.6**	**32**	**2.1**	**8.5**	**2.9**	**15**
KKR-21-051	KKR-21-051-05-07-210805	8/5/2021	5 - 7		**7**	**5.3**	**13**	**2.2**	**27**	**1.8**	**7**	**1.8**	**13**
KKR-21-052	KKR-21-052-00-01-210805	8/5/2021	0 - 1		**4.1**	**2.3**	**5.4**	**1.1**	**10**	**0.39**	**4**	**0.13 J**	**3.4**
KKR-21-052	KKR-21-052-01-03-210805	8/5/2021	1 - 3		**16**	**10**	**24**	**4.1**	**61**	**3.9**	**15**	**0.38 J**	**26**
KKR-21-052	KKR-21-052-03-05-210805	8/5/2021	3 - 5		**8.2**	**5.6**	**15**	**2.6**	**30**	**2.4**	**8.2**	**1.6**	**17**
KKR-21-052	KKR-21-052-05-07-210805	8/5/2021	5 - 7		**3.5**	**2.1**	**5.7**	**0.99**	**12**	**1.1**	**3.3**	**2.3**	**7.6**
KKR-21-053	KKR-21-053-00-01-210805	8/5/2021	0 - 1		**11**	**7.9**	**20**	**3.4**	**40**	**2.7**	**11**	**5**	**18**
KKR-21-053	KKR-21-053-01-03-210805	8/5/2021	1 - 3		**12**	**8.9**	**22**	**3.8**	**46**	**3.6**	**12**	**2.6**	**24**
KKR-21-053	KKR-21-053-03-05-210805	8/5/2021	3 - 5		**8.4**	**6.5**	**17**	**2.7**	**35**	**2.7**	**8.5**	**3.3**	**19**
Kinnickinnic River – Reach 3													
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9		**2.5**	**0.89**	**2.1**	**0.53 J**	**3.2**	**0.16 J**	**2**	0.15 U	**1.3**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25		**5**	**2.5**	**6.2**	**1.3**	**10**	**0.38 J**	**4.4**	**0.37 J**	**2.4**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85		**19**	**13**	**31**	**4.5**	**82**	**7.3**	**17**	**5.1**	**64**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1		**10**	**6.3**	**14**	**2.6**	**27**	**1.7**	**8.5**	**1.2 J**	**17**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9		**16**	**8.6**	**24**	**3.8**	**48**	**4.7**	**14**	**3.2**	**27 J**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9		**20**	**12**	**34**	**5.2**	**71**	**7.6**	**19**	**5.2**	**48 J**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1		**8.5**	**5.7**	**13**	**2.1**	**27**	**1.6**	**7.4**	**0.64 J**	**11**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3		**9.6**	**7.5**	**17**	**2.6**	**36**	**3.2**	**8.4**	**5.1**	**20**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3		**7**	**5.1**	**14**	**2**	**29**	**3.1**	**6**	**14**	**14**
Kinnickinnic River – Reach 4													
KKR-21-058	KKR-21-058-00-01-210819	8/19/2021	0 - 1		**4.3**	**2**	**6.4**	**1.1**	**9.2**	**0.57**	**3.8**	**0.58**	**3.9**
KKR-21-058	KKR-21-058-01-03-210819	8/19/2021	1 - 3		**7.5**	**3.6**	**10**	**1.8**	**15**	**0.97**	**6.2**	**2.1**	**6.1**
KKR-21-058	KKR-21-058-03-4.2-210819	8/19/2021	3 - 4.2		**5.8**	**3.7**	**8.6**	**1.7**	**11**	**0.91**	**5**	**2.2**	**4.7**
KKR-21-059	KKR-21-059-00-01-210820	8/20/2021	0 - 1		**3.1**	**1.6**	**3.1**	**0.87**	**4.7**	**0.33 J**	**2.6**	**0.32 J**	**1.5**
KKR-21-059	KKR-21-059-01-03-210820	8/20/2021	1 - 3		**4**	**2.2**	**4.7**	**1.1**	**8.2**	**0.53**	**3.6**	**0.52**	**3.1**
KKR-21-059	KKR-21-059-03-04-210820	8/20/2021	3 - 4		**4.9**	**2.6**	**6.4**	**1.4**	**11**	**0.69**	**4.5**	**0.54**	**4.2**
KKR-21-060	KKR-21-060-00-01-210820	8/20/2021	0 - 1		**2.3**	**0.79**	**2.3**	**0.6**	**3.5**	**0.25 J**	**2**	**0.37**	**1.4**
KKR-21-060	KKR-21-060-01-03-210820	8/20/2021	1 - 3		**4.9**	**2.2**	**7.2**	**1.2**	**11**	**0.89**	**4.2**	**2.3**	**4.2**
KKR-21-060	FD-202108200805	8/20/2021	1 - 3		**4.8**	**3.4**	**7.5**	**1.5**	**11**	**0.83**	**4.2**	**2.1**	**3.6**
KKR-21-060	KKR-21-060-03-05-210820	8/20/2021	3 - 5		**0.56**	**0.26**	**0.8**	**0.12**	**1.6**	**0.26**	**0.45**	**0.65**	**1.3**
KKR-21-060	KKR-21-060-05-07-210820	8/20/2021	5 - 7		**0.57**	**0.38**	**0.89**	**0.17**	**2**	**0.42**	**0.53**	**0.87**	**1.8**
KKR-21-060	KKR-21-060-07-09-210820	8/20/2021	7 - 9		**0.23**	**0.17**	**0.38**	**0.077**	**0.81**	**0.16**	**0.22**	**0.11**	**0.72**
KKR-21-060	KKR-21-060-09-10-210820	8/20/2021	9 - 10		0.013 U	0.018 U	0.034 U	0.039 U	0.016 U	0.012 U	0.031 U	0.012 U	0.017 U
KKR-21-061	KKR-21-061-00-01-210820	8/20/2021	0 - 1		**2.5**	**1.2 J-**	**3.6**	**0.74**	**6.2**	**0.52**	**2.3**	**0.77**	**2.6**
KKR-21-061	KKR-21-061-01-03-210820	8/20/2021	1 - 3		**4.6**	**2.3 J-**	**6.9**	**1.4**	**12**	**0.76**	**4.3**	**1.1**	**4.8**
KKR-21-061	KKR-21-061-03-05-210820	8/20/2021	3 - 5		**5.9**	**3.3 J-**	**9**	**1.7**	**16**	**1.1**	**5.7**	**1.1**	**7.1**
KKR-21-061	KKR-21-061-05-07-210820	8/20/2021	5 - 7		**8.2**	**5.3 J-**	**16**	**2.9**	**27**	**2.4**	**7.9**	**1.9**	**14**
KKR-21-061	KKR-21-061-07-09-210820	8/20/2021	7 - 9		**6.6**	**3.9 J-**	**11**	**2.1**	**17**	**1.5**	**6.3**	**4.5**	**7.2**
KKR-21-061	KKR-21-061-09-10-210820	8/20/2021	9 - 10		**7.5**	**4.2 J-**	**11**	**2**	**19**	**1.5**	**7**	**3.2**	**7.9**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)
					191-24-2	207-08-9	218-01-9	53-70-3	206-44-0	86-73-7	193-39-5	91-20-3	85-01-8
				PEC	3.2	13.4	1.29	0.135	2.23	0.536	3.2	0.561	1.17
				3 x PEC	9.6	40.2	3.87	0.405	6.69	1.608	9.6	1.683	3.51
				5 x PEC	16	67	6.45	0.675	11.15	2.68	16	2.805	5.85
KKR-21-062	KKR-21-062-00-01-210820	8/20/2021	0 - 1		**2.7**	**1.4 J-**	**4.9**	**0.84**	**8.9**	**0.77**	**2.5**	**0.45**	**2.9**
KKR-21-062	KKR-21-062-01-03-210820	8/20/2021	1 - 3		**6.4**	**3.5 J-**	**12**	**1.8**	**21**	**2.2**	**5.7**	**1.2**	**13**
KKR-21-062	KKR-21-062-03-05-210820	8/20/2021	3 - 5		**1.3**	**0.76 J-**	**2.6**	**0.42**	**5**	**0.9**	**1.2**	**0.48**	**5.5**
KKR-21-062	KKR-21-062-05-07-210820	8/20/2021	5 - 7		**1.1**	**0.5 J-**	**2.4**	**0.33**	**3.8**	**0.83**	**0.96**	**0.34**	**4.6**
KKR-21-062	KKR-21-062-07-7.4-210820	8/20/2021	7 - 7.4		**0.45**	**0.3 J-**	**0.92**	**0.14**	**1.9**	**0.35**	**0.41**	**0.18**	**2.1**
Milwaukee Bay – Nearshore and McKinley Marina													
MKE-21-063	MKE-21-063-00-01-210818	8/18/2021	0 - 1		**0.56**	**0.36**	**0.75**	**0.15**	**1.4**	**0.055 J**	**0.54**	**0.029 J**	**0.48**
MKE-21-063	MKE-21-063-01-2.3-210818	8/18/2021	1 - 2.3		**0.97**	**0.7**	**1.4**	**0.3**	**2.6**	**0.14 J**	**0.95**	**0.058 J**	**1.1**
MKE-21-063	MKE-21-063-2.3-2.6-210818	8/18/2021	2.3 - 2.6		**0.55**	**0.41**	**1**	**0.16**	**2.3**	**0.16**	**0.54**	**0.052**	**1.3**
MKE-21-063	MKE-21-063-2.6-4.6-210818	8/18/2021	2.6 - 4.6		**0.85**	**0.47**	**1.3**	**0.23**	**2.5**	**0.23**	**0.75**	**0.14**	**1.5**
MKE-21-063	FD-202108181355	8/18/2021	2.6 - 4.6		**0.59**	**0.37**	**0.87**	**0.15**	**1.6**	**0.16**	**0.51**	**0.16**	**0.95**
MKE-21-063	MKE-21-063-4.6-6.6-210818	8/18/2021	4.6 - 6.6		**0.23**	**0.099**	**0.27**	**0.042**	**0.64**	**0.057**	**0.19**	**0.035 J**	**0.44**
MKE-21-063	*MKE-21-063-6.6-7.2-210818*	8/18/2021	6.6 - 7.2		0.0086 U	0.012 U	0.022 U	0.025 U	0.010 U	0.0078 U	0.020 U	0.0077 U	0.011 U
MKE-21-064	MKE-21-064-00-01-210818	8/18/2021	0 - 1		**0.78**	**0.5**	**1.1**	**0.22**	**2.1**	**0.11 J**	**0.74**	**0.033 J**	**0.74**
MKE-21-064	MKE-21-064-01-03-210818	8/18/2021	1 - 3		**1.2**	**0.78**	**1.7**	**0.32**	**3.2**	**0.2**	**1.1**	**0.1 J**	**1.5**
MKE-21-064	MKE-21-064-03-05-210818	8/18/2021	3 - 5		**0.97**	**0.45**	**1.4**	**0.27**	**2.6**	**0.26**	**0.89**	**0.32**	**1.4**
MKE-21-064	MKE-21-064-05-6.4-210818	8/18/2021	5 - 6.4		**0.47**	**0.24**	**0.65**	**0.13**	**1.2**	**0.13**	**0.4**	**0.25**	**0.72**
MKE-21-065	MKE-21-065-00-01-210818	8/18/2021	0 - 1		**0.82**	**0.4**	**1.1**	**0.22**	**1.9**	**0.13**	**0.73**	**0.19**	**0.92**
MKE-21-065	MKE-21-065-01-03-210818	8/18/2021	1 - 3		**0.12**	**0.062**	**0.14**	**0.027 J**	**0.32**	**0.032 J**	**0.1**	**0.023 J**	**0.17**
MKE-21-065	MKE-21-065-03-05-210818	8/18/2021	3 - 5		0.0086 U	0.012 U	0.022 U	0.025 U	0.010 U	0.0078 U	0.020 U	0.0077 U	0.011 U
MKE-21-065	*MKE-21-065-05-07-210818*	8/18/2021	5 - 7		0.014 U	0.020 U	0.036 U	0.042 U	0.017 U	0.013 U	0.033 U	0.013 U	0.018 U
Milwaukee Bay – North and Summerfest Lagoon													
MKE-21-066	MKE-21-066-00-01-210819	8/19/2021	0 - 1		**0.7**	**0.36**	**0.84**	**0.17**	**1.4**	**0.093 J**	**0.6**	0.028 U	**0.68**
MKE-21-066	MKE-21-066-01-03-210819	8/19/2021	1 - 3		**1.3**	**0.71**	**1.7**	**0.31**	**2.6**	**0.18**	**1.1**	**0.089 J**	**1.2**
MKE-21-066	FD-202108190930	8/19/2021	1 - 3		**1.9**	**1.1**	**2.6**	**0.49**	**3.8**	**0.22**	**1.4**	**0.09 J**	**1.6**
MKE-21-066	MKE-21-066-03-05-210819	8/19/2021	3 - 5		**1.5**	**0.88**	**2.5**	**0.47**	**3.4**	**0.23**	**1.3**	**0.35**	**1.5**
MKE-21-066	MKE-21-066-05-07-210819	8/19/2021	5 - 7		**1.1**	**0.72**	**1.9**	**0.31**	**2.4**	**0.27**	**0.99**	**0.58**	**1.7**
MKE-21-066	MKE-21-066-07-8.2-210819	8/19/2021	7 - 8.2		**0.045**	**0.022 J**	**0.037 J**	0.026 U	**0.084**	**0.012 J**	**0.039 J**	**0.0088 J**	**0.086**
MKE-21-066	FR-202108190945	8/19/2021	7 - 8.2		0.0087 U	0.012 U	**0.034 J**	0.026 U	**0.063**	0.0079 U	0.020 U	0.0078 U	**0.084**
MKE-21-066	*MKE-21-066-8.2-8.7-210819*	8/19/2021	8.2 - 8.7		0.0081 U	0.011 U	0.021 U	0.024 U	0.0099 U	0.0074 U	0.019 U	0.0073 U	0.010 U
MKE-21-067	MKE-21-067-00-01-210818	8/18/2021	0 - 1		**0.76**	**0.54**	**1**	**0.2**	**1.8**	**0.1 J**	**0.7**	**0.037 J**	**0.67**
MKE-21-067	MKE-21-067-01-03-210818	8/18/2021	1 - 3		**2.4**	**1.7**	**3.6**	**0.61**	**6**	**0.35**	**2.1**	**0.17**	**2.4**
MKE-21-067	MKE-21-067-03-05-210818	8/18/2021	3 - 5		**2.5**	**1.5**	**4.3**	**0.78**	**6.5**	**0.5**	**2.4**	**0.43**	**2.7**
MKE-21-067	MKE-21-067-05-7.5-210818	8/18/2021	5 - 7.5		**1.4**	**0.79**	**2.4**	**0.42**	**3.6**	**0.38**	**1.3**	**0.61**	**1.8**
MKE-21-067	*MKE-21-067-7.7-9.7-210818*	8/18/2021	7.7 - 9.7		**0.014 J**	0.012 U	**0.022 J**	0.025 U	**0.019 J**	0.0077 U	0.020 U	0.0077 U	**0.017 J**
MKE-21-068	MKE-21-068-00-01-210818	8/18/2021	0 - 1		**1**	**0.55**	**1.3**	**0.28 J**	**2.4**	**0.15 J**	**0.98**	0.056 U	**0.96**
MKE-21-068	MKE-21-068-01-03-210818	8/18/2021	1 - 3		**2.9**	**1.7**	**4.5**	**0.82**	**8.5**	**0.49**	**2.7**	**0.23 J**	**3.9**
MKE-21-068	FD-202108180910	8/18/2021	1 - 3		**2.5**	**1.5**	**4**	**0.72**	**7**	**0.4**	**2.3**	**0.23 J**	**3**
MKE-21-068	MKE-21-068-03-05-210818	8/18/2021	3 - 5		**3.1**	**2**	**5.9**	**0.8**	**9.2**	**1**	**2.4**	**0.63**	**6.7**
MKE-21-068	MKE-21-068-05-06-210818	8/18/2021	5 - 6		**3.5**	**2.4**	**7.7**	**0.87**	**10**	**1.1**	**3**	**1.1**	**6.4**
MKE-21-068	*MKE-21-068-06-7.2-210818*	8/18/2021	6 - 7.2		**0.039 J**	0.022 U	**0.065 J**	0.047 U	**0.088**	0.014 U	0.037 U	0.014 U	**0.07 J**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)
				PEC	191-24-2	207-08-9	218-01-9	53-70-3	206-44-0	86-73-7	193-39-5	91-20-3	85-01-8
				3 x PEC	3.2	13.4	1.29	0.135	2.23	0.536	3.2	0.561	1.17
				5 x PEC	9.6	40.2	3.87	0.405	6.69	1.608	9.6	1.683	3.51
					16	67	6.45	0.675	11.15	2.68	16	2.805	5.85
MKE-21-069	MKE-21-069-00-01-210817	8/17/2021	0 - 1		**4.3**	**2.8**	**7.6**	**1.1**	**14**	**0.79**	**4**	**0.23**	**7.3**
MKE-21-069	MKE-21-069-01-03-210817	8/17/2021	1 - 3		**3.1**	**1.9**	**6.4**	**0.77**	**9**	**0.93**	**2.8**	**0.43**	**6.5**
MKE-21-069	MKE-21-069-03-4.8-210817	8/17/2021	3 - 4.8		**3.2**	**1.8**	**6.5**	**0.86**	**9.9**	**1.4**	**2.6**	**1.3**	**8.7**
MKE-21-069	MKE-21-069-4.8-5.6-210817	8/17/2021	4.8 - 5.6		**0.023 J**	**0.015 J**	**0.05**	0.024 U	**0.1**	**0.041**	**0.022 J**	**0.023 J**	**0.14**
MKE-21-069	*MKE-21-069-5.6-7.2-210817*	8/17/2021	5.6 - 7.2		0.0081 U	0.011 U	0.021 U	0.024 U	0.0099 U	0.0074 U	0.019 U	0.0073 U	0.010 U
MKE-21-069	*FD-202108171320*	8/17/2021	5.6 - 7.2		0.0081 U	0.011 U	0.021 U	0.024 U	0.0099 U	0.0073 U	0.019 U	0.0073 U	**0.01 J**
MKE-21-070	MKE-21-070-00-1.2-210819	8/19/2021	0 - 1.2		**0.58**	**0.33**	**0.9**	**0.14**	**1.6**	**0.16**	**0.49**	**0.079**	**1.1**
MKE-21-070	MKE-21-070-1.2-1.8-210819	8/19/2021	1.2 - 1.8		**1.5**	**0.62**	**2.1**	**0.33**	**3.8**	**0.29**	**1.2**	**0.078 J**	**2.2**
MKE-21-070	MKE-21-070-1.8-3.2-210819	8/19/2021	1.8 - 3.2		**5**	**3.5**	**7.9**	**1.3**	**18**	**1.5**	**4.5**	**0.33**	**12**
MKE-21-070	MKE-21-070-3.2-5.2-210819	8/19/2021	3.2 - 5.2		**1.4**	**0.9**	**2.2**	**0.39**	**3.4**	**0.34**	**1.2**	**0.15**	**2.2**
MKE-21-070	MKE-21-070-5.2-6.2-210819	8/19/2021	5.2 - 6.2		**1.4**	**0.9**	**2.2**	**0.37**	**3.2**	**0.36**	**1.1**	**0.15**	**2.3**
MKE-21-070	MKE-21-070-6.2-7.5-210819	8/19/2021	6.2 - 7.5		**0.89**	**0.59**	**1.4**	**0.18**	**2.6**	**0.24**	**0.75**	**0.1**	**2**
MKE-21-070	*MKE-21-070-7.5-8.5-210819*	8/19/2021	7.5 - 8.5		0.0087 U	0.012 U	0.022 U	0.026 U	**0.021 J**	0.0079 U	0.020 U	0.0079 U	**0.024 J**
MKE-21-071	MKE-21-071-00-01-210819	8/19/2021	0 - 1		**0.88**	**0.55**	**1.1**	**0.19**	**1.7**	**0.088**	**0.86**	**0.04 J**	**0.73**
MKE-21-071	MKE-21-071-01-03-210819	8/19/2021	1 - 3		**1.5**	**0.89**	**2.1**	**0.36**	**3.7**	**0.2**	**1.5**	**0.069**	**1.8**
MKE-21-071	MKE-21-071-03-4.8-210819	8/19/2021	3 - 4.8		**0.026 J**	**0.028 J**	**0.036 J**	0.024 U	**0.039**	0.0073 U	0.019 U	0.0072 U	**0.051**
MKE-21-071	*MKE-21-071-4.8-5.5-210819*	8/19/2021	4.8 - 5.5		0.0090 U	0.012 U	0.023 U	0.027 U	0.011 U	0.0082 U	0.021 U	0.0081 U	0.011 U
MKE-21-072	MKE-21-072-00-01-210819	8/19/2021	0 - 1		**0.34**	**0.23**	**0.48**	**0.069**	**0.67**	**0.054**	**0.29**	**0.04 J**	**0.45**
MKE-21-072	MKE-21-072-01-03-210819	8/19/2021	1 - 3		**0.92**	**0.49**	**1.5**	**0.24**	**2.4**	**0.15**	**0.91**	**0.06 J**	**1.2**
MKE-21-072	FD-202108191215	8/19/2021	1 - 3		**1.1**	**0.54**	**1.6**	**0.28**	**3**	**0.18**	**1.1**	**0.061 J**	**1.6**
MKE-21-072	MKE-21-072-03-3.5-210819	8/19/2021	3 - 3.5		**0.53**	**0.32**	**0.98**	**0.15**	**1.7**	**0.2**	**0.48**	**0.056**	**1.2**
MKE-21-072	*MKE-21-072-3.5-4.4-210819*	8/19/2021	3.5 - 4.4		0.0087 U	**0.018 J**	**0.044**	0.026 U	**0.047**	0.0079 U	0.020 U	0.0079 U	**0.043**
MKE-21-073	MKE-21-073-00-01-210809	8/9/2021	0 - 1		**0.92**	**0.53**	**1.1**	**0.24**	**1.7**	**0.082 J**	**0.78**	0.044 U	**0.59**
MKE-21-073	MKE-21-073-01-03-210809	8/9/2021	1 - 3		**2.2**	**1.2**	**3.7**	**0.72**	**5.3**	**0.34**	**1.9**	**0.23**	**2.5**
MKE-21-073	MKE-21-073-03-5.1-210809	8/9/2021	3 - 5.1		**1.8**	**1.3**	**3**	**0.48**	**4.4**	**0.38**	**1.4**	**0.21**	**2.3**
MKE-21-074	MKE-21-074-00-01-210809	8/9/2021	0 - 1		**0.82**	**0.56**	**0.99**	**0.23**	**1.7**	**0.078 J**	**0.78**	**0.035 J**	**0.6**
MKE-21-074	MKE-21-074-01-2.7-210809	8/9/2021	1 - 2.7		**1.1**	**0.7**	**1.9**	**0.31**	**3.2**	**0.25**	**0.96**	**0.12**	**1.5**
MKE-21-074	MKE-21-074-2.7-4.3-210809	8/9/2021	2.7 - 4.3		**0.052**	**0.029 J**	**0.095**	0.026 U	**0.17**	**0.01 J**	**0.042**	0.0078 U	**0.17**
MKE-21-075	MKE-21-075-00-01-210809	8/9/2021	0 - 1		**0.72**	**0.32**	**0.77**	**0.14 J**	**1.1**	**0.072 J**	**0.6**	**0.032 J**	**0.51**
MKE-21-075	MKE-21-075-01-03-210809	8/9/2021	1 - 3		**1.3**	**1**	**2.3**	**0.21**	**3.8**	**0.26**	**1.1**	**0.094 J**	**2.3**
MKE-21-075	MKE-21-075-03-05-210809	8/9/2021	3 - 5		**0.093**	**0.1**	**0.26**	**0.032 J**	**0.6**	**0.034 J**	**0.095**	0.0078 U	**0.86**
Milwaukee Bay – South Adjacent to the Port Milwaukee													
MKE-21-076	MKE-21-076-00-01-210817	8/17/2021	0 - 1		**1.8**	**0.85**	**2.7**	**0.4**	**4.8**	**0.28**	**1.6**	**0.13**	**2.3**
MKE-21-076	FD-202108170815	8/17/2021	0 - 1		**2**	**1.3**	**2.8**	**0.53**	**5.1**	**0.26**	**1.9**	**0.1 J**	**2.4**
MKE-21-076	MKE-21-076-01-2.3-210817	8/17/2021	1 - 2.3		**1.4**	**0.88**	**2.3**	**0.36**	**3.3**	**0.25**	**1.2**	**0.2**	**1.9**
MKE-21-076	MKE-21-076-2.3-3.3-210817	8/17/2021	2.3 - 3.3		**0.075**	**0.044**	**0.13**	0.025 U	**0.24**	**0.056**	**0.064**	**0.013 J**	**0.3**
MKE-21-076	MKE-21-076-3.3-4.4-210817	8/17/2021	3.3 - 4.4		0.0089 U	0.012 U	0.023 U	0.027 U	0.011 U	0.0081 U	0.021 U	0.0081 U	**0.013 J**
MKE-21-076	FR-202108170830	8/17/2021	3.3 - 4.4		0.0089 U	0.012 U	0.023 U	0.026 U	0.011 U	0.0081 U	0.021 U	0.0081 U	0.011 U

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)
				PEC	191-24-2	207-08-9	218-01-9	53-70-3	206-44-0	86-73-7	193-39-5	91-20-3	85-01-8
				3 x PEC	3.2	13.4	1.29	0.135	2.23	0.536	3.2	0.561	1.17
				5 x PEC	9.6	40.2	3.87	0.405	6.69	1.608	9.6	1.683	3.51
					16	67	6.45	0.675	11.15	2.68	16	2.805	5.85
MKE-21-077	MKE-21-077-00-01-210817	8/17/2021	0 - 1		**2.1**	**1.4**	**3.4**	**0.55**	**5.1**	**0.35**	**1.7**	**0.35**	**2.5**
MKE-21-077	MKE-21-077-01-03-210817	8/17/2021	1 - 3		**0.23**	**0.16**	**0.34**	**0.064**	**0.45**	**0.048**	**0.18**	**0.063**	**0.31**
MKE-21-077	MKE-21-077-03-05-210817	8/17/2021	3 - 5		**0.07**	**0.046**	**0.12**	0.026 U	**0.22**	**0.047**	**0.059**	**0.053**	**0.29**
MKE-21-077	MKE-21-077-05-07-210817	8/17/2021	5 - 7		0.010 U	0.014 U	0.026 U	0.030 U	0.013 U	0.0094 U	0.024 U	0.0093 U	0.013 U
MKE-21-077	MKE-21-077-07-09-210817	8/17/2021	7 - 9		0.010 U	0.014 U	0.026 U	0.030 U	0.012 U	0.0091 U	0.023 U	0.0090 U	0.012 U
MKE-21-077	MKE-21-077-09-11-210817	8/17/2021	9 - 11		0.011 U	0.016 U	0.029 U	0.034 U	0.014 U	0.010 U	0.026 U	0.010 U	0.014 U
MKE-21-077	MKE-21-077-11-13-210817	8/17/2021	11 - 13		0.010 U	0.014 U	0.026 U	0.031 U	0.013 U	0.0094 U	0.024 U	0.0093 U	0.013 U
MKE-21-077	MKE-21-077-13-14.2-210817	8/17/2021	13 - 14.2		0.0097 U	0.014 U	0.025 U	0.029 U	0.012 U	0.0089 U	0.022 U	0.0088 U	0.012 U
MKE-21-078	MKE-21-078-00-01-210817	8/17/2021	0 - 1		**1.3**	**0.81**	**2**	**0.35**	**3.2**	**0.22**	**1.2**	**0.14**	**1.9**
MKE-21-078	MKE-21-078-01-03-210817	8/17/2021	1 - 3		**1.4**	**0.83**	**2.3**	**0.38**	**3.3**	**0.22**	**1.3**	**0.22**	**1.9**
MKE-21-078	MKE-21-078-03-05-210817	8/17/2021	3 - 5		**1.1**	**0.66**	**1.8**	**0.28**	**3**	**0.2**	**0.95**	**0.25**	**1.3**
MKE-21-078	FD-202108171430	8/17/2021	3 - 5		**1**	**0.52**	**1.4**	**0.19**	**1.9**	**0.16**	**0.84**	**0.21**	**1.1**
MKE-21-078	MKE-21-078-05-07-210817	8/17/2021	5 - 7		**0.14**	**0.087**	**0.25**	**0.035 J**	**0.44**	**0.046**	**0.1**	**0.075**	**0.22**
MKE-21-078	MKE-21-078-07-8.7-210817	8/17/2021	7 - 8.7		**0.011 J**	0.012 U	**0.023 J**	0.025 U	**0.027 J**	0.0077 U	0.019 U	0.0076 U	**0.017 J**
MKE-21-078	MKE-21-078-8.7-10.7-210817	8/17/2021	8.7 - 10.7		0.0082 U	0.011 U	0.021 U	0.024 U	0.010 U	0.0075 U	0.019 U	0.0074 U	0.010 U
MKE-21-078	MKE-21-078-10.7-12.7-210817	8/17/2021	10.7 - 12.7		0.0082 U	0.011 U	0.021 U	0.024 U	0.010 U	0.0075 U	0.019 U	0.0074 U	0.010 U
MKE-21-078	MKE-21-078-12.7-14.7-210817	8/17/2021	12.7 - 14.7		0.0083 U	0.012 U	0.021 U	0.025 U	0.010 U	0.0076 U	0.019 U	0.0075 U	0.010 U
MKE-21-078	MKE-21-078-14.7-15.7-210817	8/17/2021	14.7 - 15.7		0.0080 U	0.011 U	0.020 U	0.024 U	0.0097 U	0.0073 U	0.018 U	0.0072 U	0.0099 U
South Menomonee Canal – East													
SMC-21-001	SMC-21-001-00-01-210821	8/21/2021	0 - 1		**3**	**1.7 J-**	**4**	**0.72**	**6.8**	**0.2 J**	**2.8**	0.10 U	**2.2**
SMC-21-001	SMC-21-001-01-2.5-210821	8/21/2021	1 - 2.5		**3.4**	**1.7 J-**	**4.6**	**0.81**	**8**	**0.29 J**	**3.2**	0.080 U	**2.9**
SMC-21-001	FD-202108210755	8/21/2021	1 - 2.5		**3.2**	**1.7 J-**	**4.2**	**0.72**	**7.8**	**0.25 J**	**3**	0.064 U	**2.7**
SMC-21-001	SMC-21-001-2.5-04-210821	8/21/2021	2.5 - 4		**2.6**	**2**	**3.8**	**0.62 J**	**7.1**	**0.36 J**	**2.1**	0.14 U	**3.1**
SMC-21-001	SMC-21-001-04-06-210821	8/21/2021	4 - 6		**3**	**1.8 J-**	**5.3**	**0.9**	**10**	**1**	**2.8**	**0.39**	**6.1**
SMC-21-001	SMC-21-001-06-08-210821	8/21/2021	6 - 8		**5.5**	**2.7 J-**	**9.4**	**1.5**	**19**	**1.5**	**4.6**	**0.64**	**9.5**
SMC-21-001	SMC-21-001-08-8.3-210821	8/21/2021	8 - 8.3		**4.1**	**2.6 J-**	**7.7**	**1.2**	**16**	**1.3**	**3.7**	**0.57**	**7.5**
SMC-21-002	SMC-21-002-00-01-210821	8/21/2021	0 - 1		**3.2**	**1.3**	**3.5**	**0.67**	**5.4**	**0.17 J**	**2.9**	0.099 U	**1.7**
SMC-21-002	SMC-21-002-01-2.5-210821	8/21/2021	1 - 2.5		**1.7**	**0.87**	**1.9**	**0.45**	**3.1**	**0.17 J**	**1.4**	0.048 U	**1.2**
SMC-21-002	FD-202108211055	8/21/2021	1 - 2.5		**1.4**	**0.83**	**1.5**	**0.34**	**2.7**	**0.13 J**	**1.3**	0.047 U	**1.1**
SMC-21-002	SMC-21-002-2.5-04-210821	8/21/2021	2.5 - 4		**0.58**	**0.27 J-**	**0.77**	**0.14**	**1.4**	**0.077 J**	**0.51**	**0.021 J**	**0.59**
SMC-21-002	SMC-21-002-04-4.9-210821	8/21/2021	4 - 4.9		**1.9**	**1.2**	**2.7**	**0.52**	**5.3**	**0.39**	**1.6**	**0.2 J**	**2.7**
SMC-21-003	SMC-21-003-00-01-210821	8/21/2021	0 - 1		**3.1**	**1.5**	**3**	**0.66**	**4.5**	**0.15 J**	**2.6**	0.099 U	**1.6**
SMC-21-003	SMC-21-003-01-2.5-210821	8/21/2021	1 - 2.5		**3.3**	**1.2**	**3.5**	**0.78**	**5.5**	**0.16 J**	**2.9**	0.093 U	**1.9**
SMC-21-003	SMC-21-003-2.5-04-210821	8/21/2021	2.5 - 4		**2.8**	**1.2 J-**	**3.4**	**0.67**	**5.8**	**0.22**	**2.6**	**0.068 J**	**2**
SMC-21-003	SMC-21-003-04-5.1-210821	8/21/2021	4 - 5.1		**2.3**	**1.2 J-**	**3.2**	**0.63**	**5.9**	**0.33**	**2.2**	**0.12 J**	**2.2**
SMC-21-003	SMC-21-003-5.1-7.1-210821	8/21/2021	5.1 - 7.1		**0.036 J**	**0.028 J**	**0.074**	0.037 U	**0.14**	**0.012 J**	**0.035 J**	**0.047 J**	**0.098**
SMC-21-003	SMC-21-003-7.1-9.1-210821	8/21/2021	7.1 - 9.1		0.013 U	0.018 U	0.033 U	0.038 U	0.016 U	0.012 U	0.029 U	0.012 U	0.016 U
SMC-21-003	SMC-21-003-9.1-9.4-210821	8/21/2021	9.1 - 9.4		0.014 U	0.019 U	0.036 U	0.041 U	0.017 U	0.013 U	0.032 U	0.013 U	0.017 U
SMC-21-004	SMC-21-004-00-01-210821	8/21/2021	0 - 1		**3.2**	**2.1**	**6.7**	**0.97**	**13**	**1.2**	**2.9**	**0.91**	**6.9**
SMC-21-004	SMC-21-004-01-2.5-210821	8/21/2021	1 - 2.5		**4.7**	**2.4**	**8.7**	**1.4**	**17**	**1.3**	**4.1**	**1.1**	**7.8**
SMC-21-004	SMC-21-004-2.5-04-210821	8/21/2021	2.5 - 4		**9.6**	**3.6**	**14**	**2.5**	**23**	**1.9**	**6.2**	**1.7**	**12**
SMC-21-004	SMC-21-004-04-06-210821	8/21/2021	4 - 6		**5.8**	**2.9**	**11**	**1.7**	**22**	**1.7**	**5.3**	**1.6**	**10**
SMC-21-004	SMC-21-004-06-08-210821	8/21/2021	6 - 8		**2.1**	**1.4**	**4.4**	**0.64**	**9.7**	**0.88**	**2**	**0.97**	**5.6**
SMC-21-004	SMC-21-004-08-8.8-210821	8/21/2021	8 - 8.8		**0.9**	**0.57**	**1.9**	**0.29**	**4.3**	**0.45**	**0.84**	**0.47**	**2.8**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. / PEC / 3 x PEC / 5 x PEC	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-c,d)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)
				CAS No.	191-24-2	207-08-9	218-01-9	53-70-3	206-44-0	86-73-7	193-39-5	91-20-3	85-01-8
				PEC	3.2	13.4	1.29	0.135	2.23	0.536	3.2	0.561	1.17
				3 x PEC	9.6	40.2	3.87	0.405	6.69	1.608	9.6	1.683	3.51
				5 x PEC	16	67	6.45	0.675	11.15	2.68	16	2.805	5.85
South Menomonee Canal – Middle													
SMC-21-005	SMC-21-005-00-01-210820	8/20/2021	0 - 1		**4.5**	**2**	**5.2**	**1.1**	**8.7**	**0.27 J**	**4.2**	**0.13 J**	**2.7**
SMC-21-005	SMC-21-005-01-2.5-210820	8/20/2021	1 - 2.5		**2.5**	**1.6**	**3.4**	**0.66**	**7.1**	**0.34**	**2.4**	**0.14 J**	**2.6**
SMC-21-005	SMC-21-005-2.5-04-210820	8/20/2021	2.5 - 4		**4.5**	**2.6**	**6.2**	**1.2**	**14**	**0.78**	**4.3**	**0.24 J**	**5.2**
SMC-21-005	SMC-21-005-04-06-210820	8/20/2021	4 - 6		**5.7**	**3.9**	**9.9**	**1.8**	**21**	**1.4**	**5.6**	**0.7**	**9.4**
SMC-21-005	SMC-21-005-06-6.7-210820	8/20/2021	6 - 6.7		**2.2**	**1.4**	**3.8**	**0.67**	**8.6**	**0.73**	**2**	**0.91**	**4.9**
SMC-21-005	*SMC-21-005-6.7-8.7-210820*	8/20/2021	6.7 - 8.7		**0.032 J**	**0.017 J**	**0.045 J**	0.037 U	**0.087**	0.011 U	0.029 U	0.011 U	**0.041 J**
SMC-21-005	*SMC-21-005-8.7-10.7-210820*	8/20/2021	8.7 - 10.7		**0.013 J**	0.017 U	0.031 U	0.035 U	**0.034 J**	0.011 U	0.027 U	0.011 U	**0.019 J**
SMC-21-005	*SMC-21-005-10.7-12.7-210820*	8/20/2021	10.7 - 12.7		0.011 U	0.015 U	0.029 U	0.033 U	**0.014 J**	0.010 U	0.026 U	0.010 U	0.014 U
SMC-21-005	*FR-202108201505*	8/20/2021	10.7 - 12.7		0.011 U	0.015 U	0.029 U	0.033 U	**0.025 J**	0.010 U	0.026 U	0.010 U	**0.016 J**
SMC-21-006	SMC-21-006-0.1-01-210821	8/21/2021	0.1 - 1		**2.8**	**1.6**	**4.6**	**0.78**	**11**	**0.85**	**2.6**	**0.75**	**6.1**
SMC-21-006	SMC-21-006-01-2.5-210821	8/21/2021	1 - 2.5		**2.4**	**1.4**	**4.4**	**0.69**	**9.7**	**0.99**	**2.1**	**1.5**	**6.7**
SMC-21-006	SMC-21-006-03-04-210821	8/21/2021	3 - 4		0.0086 U	0.012 U	0.022 U	0.026 U	**0.017 J**	0.0078 U	0.020 U	0.0078 U	**0.017 J**
SMC-21-006	SMC-21-006-04-06-210821	8/21/2021	4 - 6		0.0084 U	0.012 U	0.022 U	0.025 U	0.010 U	0.0076 U	0.019 U	0.0076 U	0.010 U
SMC-21-006	SMC-21-006-06-08-210821	8/21/2021	6 - 8		0.0084 U	0.012 U	0.022 U	0.025 U	0.010 U	0.0077 U	0.019 U	0.0076 U	0.010 U
SMC-21-006	SMC-21-006-08-10-210821	8/21/2021	8 - 10		0.0082 U	0.011 U	0.021 U	0.024 U	0.010 U	0.0074 U	0.019 U	0.0074 U	0.010 U
SMC-21-006	SMC-21-006-10-12-210821	8/21/2021	10 - 12		0.0083 U	0.011 U	0.021 U	0.025 U	0.010 U	0.0075 U	0.019 U	0.0075 U	0.010 U
SMC-21-006	SMC-21-006-12-12.8-210821	8/21/2021	12 - 12.8		0.0085 U	0.012 U	0.022 U	0.025 U	0.010 U	0.0078 U	0.020 U	0.0077 U	0.011 U
SMC-21-007	SMC-21-007-00-01-210821	8/21/2021	0 - 1		0.013 U	0.018 U	0.034 U	0.039 U	0.016 U	0.012 U	0.030 U	0.012 U	0.016 U
SMC-21-007	SMC-21-007-01-2.5-210821	8/21/2021	1 - 2.5		0.013 U	0.018 U	0.034 U	0.039 U	0.016 U	0.012 U	0.030 U	0.012 U	0.016 U
SMC-21-007	FD-202108211310	8/21/2021	1 - 2.5		0.013 U	0.018 U	0.034 U	0.039 U	0.016 U	0.012 U	0.030 U	0.012 U	0.016 U
SMC-21-007	SMC-21-007-2.5-04-210821	8/21/2021	2.5 - 4		0.012 U	0.017 U	0.032 U	0.037 U	0.015 U	0.011 U	0.029 U	0.011 U	0.015 U
SMC-21-007	SMC-21-007-04-06-210821	8/21/2021	4 - 6		0.010 U	0.014 U	0.027 U	0.031 U	0.013 U	0.0094 U	0.024 U	0.0093 U	0.013 U
SMC-21-007	SMC-21-007-06-7.8-210821	8/21/2021	6 - 7.8		0.0095 U	0.013 U	0.024 U	0.028 U	0.012 U	0.0086 U	0.022 U	0.0086 U	0.012 U
South Menomonee Canal – West													
SMC-21-008	SMC-21-008-01-1.5-210821	8/21/2021	1 - 1.5		**1.5**	**0.73**	**2.2**	**0.36**	**3.6**	**0.24**	**1.4**	**0.15 J**	**1.5**
SMC-21-008	*SMC-21-008-1.5-2.5-210821*	8/21/2021	1.5 - 2.5		**0.045 J**	**0.019 J**	**0.043 J**	0.038 U	**0.078**	0.012 U	**0.037 J**	0.012 U	**0.038 J**
SMC-21-008	*SMC-21-008-2.5-04-210821*	8/21/2021	2.5 - 4		**0.03 J**	0.017 U	**0.04 J**	0.037 U	**0.063**	0.011 U	0.029 U	0.011 U	**0.027 J**
SMC-21-008	*SMC-21-008-04-06-210821*	8/21/2021	4 - 6		0.012 U	0.016 U	0.030 U	0.035 U	0.014 U	0.011 U	0.027 U	0.011 U	0.015 U
SMC-21-008	*SMC-21-008-06-08-210821*	8/21/2021	6 - 8		0.011 U	0.016 U	0.029 U	0.033 U	0.014 U	0.010 U	0.026 U	0.010 U	0.014 U
SMC-21-008	*SMC-21-008-08-10-210821*	8/21/2021	8 - 10		0.011 U	0.015 U	0.028 U	0.033 U	0.014 U	0.010 U	0.026 U	0.010 U	0.014 U
SMC-21-008	*SMC-21-008-10-10.6-210821*	8/21/2021	10 - 10.6		0.0085 U	0.012 U	0.022 U	0.025 U	0.010 U	0.0077 U	0.020 U	0.0077 U	0.011 U
SMC-21-008	*SMC-21-008-10.6-12.6-210821*	8/21/2021	10.6 - 12.6		0.0084 U	0.012 U	0.022 U	0.025 U	0.010 U	0.0077 U	0.019 U	0.0076 U	0.010 U
SMC-21-008	*SMC-21-008-12.6-13.6-210821*	8/21/2021	12.6 - 13.6		0.0084 U	0.012 U	0.022 U	0.025 U	0.010 U	0.0076 U	0.019 U	0.0076 U	0.010 U
South Menomonee Canal – Entrance to Burnham Canal													
SMC-21-010	SMC-21-010-00-01-210811	8/11/2021	0 - 1		**6.5**	**4.7**	**10**	**1.4**	**19**	**0.8 J**	**5.9**	0.17 U	**7**
SMC-21-010	SMC-21-010-01-1.6-210811	8/11/2021	1 - 1.6		**9**	**5.2**	**12**	**2.2**	**22**	**1.3**	**8.1**	**0.3**	**13**
SMC-21-011	SMC-21-011-00-01-210811	8/11/2021	0 - 1		**1.7**	**0.83**	**2.3**	**0.35**	**4.6**	**0.36**	**1.3**	**0.14 J**	**3.9**
SMC-21-011	SMC-21-011-01-02-210811	8/11/2021	1 - 2		**7.1 J**	**5.2 J**	**12 J**	**1.9**	**32**	**2.8**	**6.9 J**	**1.1**	**26**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Pyrene (mg/kg) 129-00-0 1.52 4.56 7.6	Total PAH (U = 0) (mg/kg) -- 22.8 68.4 114	Total PAH (U = 1/2 maximum limit) (mg/kg) -- 22.8 68.4 114
Upstream Kinnickinnic River							
KKR-21-001	KKR-21-001-210811	8/11/2021	0 - 0.3		**0.011 J**	**0.024 J**	**0.17 J**
KKR-21-002	KKR-21-002-210813	8/13/2021	0 - 0.1		**3**	**20 J**	**22 J**
KKR-21-003	KKR-21-003-210811	8/11/2021	0 - 0.3		**4.5**	**30 J**	**32 J**
KKR-21-004	KKR-21-004-00-0.6-210811	8/12/2021	0 - 0.6		**0.61**	**4.4 J**	**4.4 J**
KKR-21-004	KKR-21-004-0.6-1.3-210811	8/12/2021	0.6 - 1.3		**0.64**	**4.6 J**	**4.6 J**
KKR-21-005	KKR-21-005-00-0.5-210812	8/12/2021	0 - 0.5		0.0096 U	0.081 U	0.081 U
KKR-21-006	KKR-21-006-00-0.4-210812	8/12/2021	0 - 0.4		**0.024 J**	**0.10 J**	**0.23 J**
KKR-21-007	KKR-21-007-210811	8/11/2021	0 - 0.3		**1.1 J**	**7.7 J**	**7.7 J**
KKR-21-007	FD-202108110815	8/11/2021	0 - 0.3		**0.56 J**	**4.0 J**	**4.0 J**
KKR-21-008	KKR-21-008-210811	8/11/2021	0 - 0.3		**20**	**140 J**	**140 J**
KKR-21-009	KKR-21-009-210811	8/11/2021	0 - 0.3		**0.57**	**4.2 J**	**4.2 J**
KKR-21-010	FD-202108121455	8/12/2021	0 - 0.1		**0.011 J**	**0.026 J**	**0.18 J**
KKR-21-010	KKR-21-010-00-0.1-210812	8/12/2021	0 - 0.1		**0.067**	**0.37 J**	**0.46 J**
KKR-21-011	KKR-21-011-00-0.2-210812	8/12/2021	0 - 0.2		**9.8**	**68 J**	**69 J**
KKR-21-012	KKR-21-012-00-0.2-210812	8/12/2021	0 - 0.2		**0.55**	**3.7 J**	**4.1 J**
KKR-21-013	KKR-21-013-00-0.1-210813	8/13/2021	0 - 0.1		**1.5**	**9.1 J**	**9.9 J**
KKR-21-014	KKR-21-014-00-0.25-210812	8/12/2021	0 - 0.25		**7.7**	**55 J**	**56 J**
KKR-21-015	KKR-21-015-00-0.25-210812	8/12/2021	0 - 0.25		**1.3**	**8.9 J**	**9.6 J**
KKR-21-016	KKR-21-016-00-0.2-210812	8/12/2021	0 - 0.2		**4.2 J**	**30 J**	**30 J**
KKR-21-016	FD-202108121430	8/12/2021	0 - 0.2		**9.8 J**	**67 J**	**67 J**
KKR-21-017	KKR-21-017-00-0.1-210813	8/13/2021	0 - 0.1		**5.4**	**37 J**	**38 J**
KKR-21-018	KKR-21-018-00-0.3-210812	8/12/2021	0 - 0.3		**1.2**	**7.8 J**	**7.9 J**
KKR-21-019	KKR-21-019-210813	8/13/2021	0 - 0.1		**6.4**	**43 J**	**43 J**
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1		**3.9**	**27 J**	**27 J**
KKR-21-021	KKR-21-021-210813	8/13/2021	0 - 0.1		**3.5**	**22 J**	**25 J**
Kinnickinnic River – Reach 1							
KKR-21-024	KKR-21-024-00-0.5-210806	8/6/2021	0 - 0.5		**1.6**	**11 J**	**11 J**
KKR-21-024	KKR-21-024-0.5-1.25-210806	8/6/2021	0.5 - 1.25		**0.38**	**2.8 J**	**2.8 J**
KKR-21-025	KKR-21-025-00-01-210806	8/6/2021	0 - 1		**11**	**77 J**	**77 J**
KKR-21-026	KKR-21-026-0.2-01-210806	8/6/2021	0.2 - 1		**47**	**300 J**	**300 J**
KKR-21-026	KKR-21-026-01-1.7-210806	8/6/2021	1 - 1.7		**71**	**480 J**	**480 J**
KKR-21-028	KKR-21-028-00-0.8-210806	8/6/2021	0 - 0.8		**8.8**	**61 J**	**61 J**
KKR-21-028	FD-202108061200	8/6/2021	0 - 0.8		**8.3**	**57 J**	**57 J**
KKR-21-029	KKR-21-029-210810	8/10/2021	0 - 0.3		**8.9**	**63 J**	**64 J**
KKR-21-031	KKR-21-031-210810	8/10/2021	0 - 0.3		**3.3**	**22 J**	**22 J**
KKR-21-032	KKR-21-032-00-0.7-210810	8/10/2021	0 - 0.7		**7.8**	**58 J**	**58 J**
KKR-21-032	KKR-21-032-0.7-02-210810	8/10/2021	0.7 - 2		**8**	**60 J**	**60 J**
KKR-21-033	KKR-21-033-00-0.4-210810	8/10/2021	0 - 0.4		**14**	**99 J**	**99 J**
KKR-21-033	KKR-21-033-0.4-1.2-210810	8/10/2021	0.4 - 1.2		**25**	**180 J**	**180 J**
KKR-21-033	FR-202108101135	8/10/2021	0.4 - 1.2		**23**	**170 J**	**170 J**
KKR-21-034	KKR-21-034-00-1.0-210808	8/8/2021	0 - 1		**11**	**77 J**	**77 J**
KKR-21-034	KKR-21-034-01-1.2-210808	8/8/2021	1 - 1.2		**4**	**29 J**	**29 J**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Pyrene (mg/kg)	Total PAH (U = 0) (mg/kg)	Total PAH (U = 1/2 maximum limit) (mg/kg)
				PEC	129-00-0	--	--
				3 x PEC	1.52	22.8	22.8
				5 x PEC	4.56	68.4	68.4
					7.6	114	114
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1		**42**	**300 J**	**300 J**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3		**36**	**240 J**	**240 J**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5		**46**	**300 J**	**300 J**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8		**29**	**180 J**	**180 J**
KKR-21-036	KKR-21-036-00-0.8-210810	8/10/2021	0 - 0.8		**5.6**	**41 J**	**42 J**
KKR-21-036	KKR-21-036-0.8-1.2-210810	8/10/2021	0.8 - 1.2		**8.4**	**62 J**	**62 J**
KKR-21-036	FD-202108101200	8/10/2021	0.8 - 1.2		**7.9**	**58 J**	**58 J**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1		**44**	**320 J**	**320 J**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3		**28**	**210**	**210**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5		**30**	**220 J**	**220 J**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5		**30**	**210 J**	**210 J**
KKR-21-038	KKR-21-038-00-01-210807	8/7/2021	0 - 1		**36**	**270 J**	**270 J**
KKR-21-038	KKR-21-038-01-03-210807	8/7/2021	1 - 3		**8.1 J**	**54 J**	**54 J**
KKR-21-038	FD-202108071010	8/7/2021	1 - 3		**39 J**	**280 J**	**280 J**
KKR-21-038	KKR-21-038-03-4.9-210807	8/7/2021	3 - 4.9		**34**	**240 J**	**240 J**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4		**17**	**120 J**	**120 J**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7		**39**	**280 J**	**280 J**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3		**32**	**230 J**	**230 J**
KKR-21-040	KKR-21-040-00-0.9-210810	8/10/2021	0 - 0.9		**6.1**	**47 J**	**47 J**
KKR-21-040	KKR-21-040-0.9-1.8-210810	8/10/2021	0.9 - 1.8		**7.4**	**54 J**	**54 J**
KKR-21-041	KKR-21-041-00-1.3-210807	8/7/2021	0 - 1.3		**5.3**	**36 J**	**36 J**
KKR-21-041	KKR-21-041-1.3-2.3-210807	8/7/2021	1.3 - 2.3		**16**	**110 J**	**110 J**
KKR-21-042	KKR-21-042-00-0.9-210808	8/8/2021	0 - 0.9		**0.68**	**4.6 J**	**4.6 J**
KKR-21-042	FR-202108081210	8/8/2021	0 - 0.9		**0.19**	**1.4 J**	**1.4 J**
KKR-21-043	KKR-21-043-00-01-210807	8/7/2021	0 - 1		**19**	**120 J**	**120 J**
KKR-21-043	KKR-21-043-01-03-210807	8/7/2021	1 - 3		**28**	**200 J**	**200 J**
KKR-21-043	KKR-21-043-03-05-210807	8/7/2021	3 - 5		**45**	**320 J**	**320 J**
KKR-21-043	KKR-21-043-05-5.9-210807	8/7/2021	5 - 5.9		**29**	**200 J**	**200 J**
KKR-21-044	KKR-21-044-0.2-0.9-210808	8/8/2021	0.2 - 0.9		**0.76**	**5.1 J**	**5.1 J**
KKR-21-044	KKR-21-044-0.9-1.1-210808	8/8/2021	0.9 - 1.1		**8**	**59 J**	**59 J**
KKR-21-045	KKR-21-045-00-1.3-210808	8/8/2021	0 - 1.3		**2.5**	**21 J**	**22 J**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3		**9.8**	**69 J**	**69 J**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8		**34**	**240 J**	**240 J**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4		**27**	**190 J**	**190 J**
KKR-21-048	KKR-21-048-00-01-210808	8/8/2021	0 - 1		**18**	**120 J**	**120 J**
KKR-21-048	KKR-21-048-01-1.8-210808	8/8/2021	1 - 1.8		**6.5**	**45 J**	**45 J**
KKR-21-049	KKR-21-049-00-0.8-210808	8/8/2021	0 - 0.8		**31**	**190 J**	**190 J**
KKR-21-049	KKR-21-049-0.8-03-210808	8/8/2021	0.8 - 3		**31**	**200 J**	**200 J**
KKR-21-049	KKR-21-049-03-4.4-210808	8/8/2021	3 - 4.4		**21**	**140 J**	**140 J**
KKR-21-049	FD-202108080940	8/8/2021	3 - 4.4		**24**	**170 J**	**170 J**
KKR-21-050	KKR-21-050-00-01-210808	8/8/2021	0 - 1		**10**	**72 J**	**73 J**
KKR-21-050	KKR-21-050-01-03-210808	8/8/2021	1 - 3		**22**	**150 J**	**150 J**
KKR-21-050	KKR-21-050-03-05-210808	8/8/2021	3 - 5		**24**	**170 J**	**170 J**
KKR-21-050	KKR-21-050-05-6.8-210808	8/8/2021	5 - 6.8		**20**	**130 J**	**130 J**
KKM-21-001	KKM-21-001-210816	8/16/2021	0 - 0.1		**12**	**73 J**	**73 J**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Pyrene (mg/kg)	Total PAH (U = 0) (mg/kg)	Total PAH (U = 1/2 maximum limit) (mg/kg)
				PEC	129-00-0	--	--
				3 x PEC	1.52	22.8	22.8
				5 x PEC	4.56	68.4	68.4
					7.6	114	114
KKM-21-003	KKM-21-003-210816	8/16/2021	0 - 0.1		**5.6**	**37 J**	**37 J**
KKM-21-004	KKM-21-004-210816	8/16/2021	0 - 0.1		**2.7 J**	**20 J**	**25 J**
KKM-21-005	KKM-21-005-210816	8/16/2021	0 - 0.1		**0.58 J**	**2.0 J**	**5.1 J**
Kinnickinnic River – Reach 2							
KKR-21-051	KKR-21-051-00-01-210805	8/5/2021	0 - 1		**11**	**84 J**	**84 J**
KKR-21-051	KKR-21-051-01-03-210805	8/5/2021	1 - 3		**34**	**220 J**	**220 J**
KKR-21-051	KKR-21-051-03-05-210805	8/5/2021	3 - 5		**26**	**180 J**	**180 J**
KKR-21-051	KKR-21-051-05-07-210805	8/5/2021	5 - 7		**21**	**150 J**	**150 J**
KKR-21-052	KKR-21-052-00-01-210805	8/5/2021	0 - 1		**6.8**	**57 J**	**57 J**
KKR-21-052	KKR-21-052-01-03-210805	8/5/2021	1 - 3		**45**	**300 J**	**300 J**
KKR-21-052	KKR-21-052-03-05-210805	8/5/2021	3 - 5		**26**	**170 J**	**170 J**
KKR-21-052	KKR-21-052-05-07-210805	8/5/2021	5 - 7		**11**	**74**	**74**
KKR-21-053	KKR-21-053-00-01-210805	8/5/2021	0 - 1		**31**	**220 J**	**220 J**
KKR-21-053	KKR-21-053-01-03-210805	8/5/2021	1 - 3		**34**	**250 J**	**250 J**
KKR-21-053	KKR-21-053-03-05-210805	8/5/2021	3 - 5		**26**	**190**	**190**
Kinnickinnic River – Reach 3							
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9		**2.8**	**24 J**	**25 J**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25		**9.3**	**68 J**	**68 J**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85		**63**	**430 J**	**430 J**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1		**21**	**160 J**	**160 J**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9		**40**	**280 J**	**280 J**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9		**61**	**410 J**	**410 J**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1		**22**	**150 J**	**150 J**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3		**29**	**200**	**200**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3		**24**	**170**	**170**
Kinnickinnic River – Reach 4							
KKR-21-058	KKR-21-058-00-01-210819	8/19/2021	0 - 1		**8.7**	**64**	**64**
KKR-21-058	KKR-21-058-01-03-210819	8/19/2021	1 - 3		**13**	**110**	**110**
KKR-21-058	KKR-21-058-03-4.2-210819	8/19/2021	3 - 4.2		**10**	**86**	**86**
KKR-21-059	KKR-21-059-00-01-210820	8/20/2021	0 - 1		**4.8**	**37 J**	**37 J**
KKR-21-059	KKR-21-059-01-03-210820	8/20/2021	1 - 3		**6.7**	**54 J**	**54 J**
KKR-21-059	KKR-21-059-03-04-210820	8/20/2021	3 - 4		**9.6**	**70**	**70**
KKR-21-060	KKR-21-060-00-01-210820	8/20/2021	0 - 1		**3.4**	**28 J**	**28 J**
KKR-21-060	KKR-21-060-01-03-210820	8/20/2021	1 - 3		**10**	**79**	**79**
KKR-21-060	FD-202108200805	8/20/2021	1 - 3		**9.9**	**78**	**78**
KKR-21-060	KKR-21-060-03-05-210820	8/20/2021	3 - 5		**1.7**	**11 J**	**11 J**
KKR-21-060	KKR-21-060-05-07-210820	8/20/2021	5 - 7		**1.9**	**14 J**	**14 J**
KKR-21-060	KKR-21-060-07-09-210820	8/20/2021	7 - 9		**0.77**	**5.6 J**	**5.6 J**
KKR-21-060	KKR-21-060-09-10-210820	8/20/2021	9 - 10		0.015 U	0.12 U	0.12 U
KKR-21-061	KKR-21-061-00-01-210820	8/20/2021	0 - 1		**5.1**	**41 J**	**41 J**
KKR-21-061	KKR-21-061-01-03-210820	8/20/2021	1 - 3		**9.8**	**75 J**	**75 J**
KKR-21-061	KKR-21-061-03-05-210820	8/20/2021	3 - 5		**12**	**97 J**	**97 J**
KKR-21-061	KKR-21-061-05-07-210820	8/20/2021	5 - 7		**20**	**170 J**	**170 J**
KKR-21-061	KKR-21-061-07-09-210820	8/20/2021	7 - 9		**14**	**120 J**	**120 J**
KKR-21-061	KKR-21-061-09-10-210820	8/20/2021	9 - 10		**15**	**120 J**	**120 J**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Pyrene (mg/kg) 129-00-0 1.52 4.56 7.6	Total PAH (U = 0) (mg/kg) -- 22.8 68.4 114	Total PAH (U = 1/2 maximum limit) (mg/kg) -- 22.8 68.4 114
KKR-21-062	KKR-21-062-00-01-210820	8/20/2021	0 - 1		**7.4**	**52 J**	**52 J**
KKR-21-062	KKR-21-062-01-03-210820	8/20/2021	1 - 3		**18**	**130 J**	**130 J**
KKR-21-062	KKR-21-062-03-05-210820	8/20/2021	3 - 5		**5.7**	**36 J**	**36 J**
KKR-21-062	KKR-21-062-05-07-210820	8/20/2021	5 - 7		**5.4**	**31 J**	**31 J**
KKR-21-062	KKR-21-062-07-7.4-210820	8/20/2021	7 - 7.4		**2.2**	**14 J**	**14 J**
Milwaukee Bay – Nearshore and McKinley Marina							
MKE-21-063	MKE-21-063-00-01-210818	8/18/2021	0 - 1		**1.3**	**8.8 J**	**8.8 J**
MKE-21-063	MKE-21-063-01-2.3-210818	8/18/2021	1 - 2.3		**2.1**	**16 J**	**16 J**
MKE-21-063	MKE-21-063-2.3-2.6-210818	8/18/2021	2.3 - 2.6		**1.8**	**12 J**	**12 J**
MKE-21-063	MKE-21-063-2.6-4.6-210818	8/18/2021	2.6 - 4.6		**2.3**	**16 J**	**16 J**
MKE-21-063	FD-202108181355	8/18/2021	2.6 - 4.6		**1.6**	**11**	**11**
MKE-21-063	MKE-21-063-4.6-6.6-210818	8/18/2021	4.6 - 6.6		**0.71**	**4.2 J**	**4.2 J**
MKE-21-063	*MKE-21-063-6.6-7.2-210818*	8/18/2021	6.6 - 7.2		0.0094 U	0.080 U	0.080 U
MKE-21-064	MKE-21-064-00-01-210818	8/18/2021	0 - 1		**1.7**	**13 J**	**13 J**
MKE-21-064	MKE-21-064-01-03-210818	8/18/2021	1 - 3		**2.5**	**20 J**	**20 J**
MKE-21-064	MKE-21-064-03-05-210818	8/18/2021	3 - 5		**2.4**	**17**	**17**
MKE-21-064	MKE-21-064-05-6.4-210818	8/18/2021	5 - 6.4		**1.3**	**8.6**	**8.6**
MKE-21-065	MKE-21-065-00-01-210818	8/18/2021	0 - 1		**1.9**	**13**	**13**
MKE-21-065	MKE-21-065-01-03-210818	8/18/2021	1 - 3		**0.32**	**2.1 J**	**2.1 J**
MKE-21-065	MKE-21-065-03-05-210818	8/18/2021	3 - 5		0.0094 U	0.080 U	0.080 U
MKE-21-065	*MKE-21-065-05-07-210818*	8/18/2021	5 - 7		0.016 U	0.13 U	0.13 U
Milwaukee Bay – North and Summerfest Lagoon							
MKE-21-066	MKE-21-066-00-01-210819	8/19/2021	0 - 1		**1.3**	**9.6 J**	**9.6 J**
MKE-21-066	MKE-21-066-01-03-210819	8/19/2021	1 - 3		**2.3**	**18 J**	**18 J**
MKE-21-066	FD-202108190930	8/19/2021	1 - 3		**3.4**	**26 J**	**26 J**
MKE-21-066	MKE-21-066-03-05-210819	8/19/2021	3 - 5		**3.4**	**25**	**25**
MKE-21-066	MKE-21-066-05-07-210819	8/19/2021	5 - 7		**3.2**	**21**	**21**
MKE-21-066	MKE-21-066-07-8.2-210819	8/19/2021	7 - 8.2		**0.096**	**0.61 J**	**0.67 J**
MKE-21-066	FR-202108190945	8/19/2021	7 - 8.2		**0.079**	**0.42 J**	**0.51 J**
MKE-21-066	*MKE-21-066-8.2-8.7-210819*	8/19/2021	8.2 - 8.7		0.0089 U	0.075 U	0.075 U
MKE-21-067	MKE-21-067-00-01-210818	8/18/2021	0 - 1		**1.6**	**11 J**	**11 J**
MKE-21-067	MKE-21-067-01-03-210818	8/18/2021	1 - 3		**5**	**38 J**	**38 J**
MKE-21-067	MKE-21-067-03-05-210818	8/18/2021	3 - 5		**6.1**	**45 J**	**45 J**
MKE-21-067	MKE-21-067-05-7.5-210818	8/18/2021	5 - 7.5		**3.8**	**27**	**27**
MKE-21-067	*MKE-21-067-7.7-9.7-210818*	8/18/2021	7.7 - 9.7		**0.023 J**	**0.11 J**	**0.22 J**
MKE-21-068	MKE-21-068-00-01-210818	8/18/2021	0 - 1		**2**	**15 J**	**15 J**
MKE-21-068	MKE-21-068-01-03-210818	8/18/2021	1 - 3		**6.7**	**50 J**	**50 J**
MKE-21-068	FD-202108180910	8/18/2021	1 - 3		**5.5**	**43 J**	**43 J**
MKE-21-068	MKE-21-068-03-05-210818	8/18/2021	3 - 5		**9.9**	**65**	**65**
MKE-21-068	MKE-21-068-05-06-210818	8/18/2021	5 - 6		**12**	**77**	**77**
MKE-21-068	*MKE-21-068-06-7.2-210818*	8/18/2021	6 - 7.2		**0.096**	**0.54 J**	**0.71 J**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Pyrene (mg/kg)	Total PAH (U = 0) (mg/kg)	Total PAH (U = 1/2 maximum limit) (mg/kg)
				PEC	129-00-0	--	--
				3 x PEC	1.52	22.8	22.8
				5 x PEC	4.56	68.4	68.4
					7.6	114	114
MKE-21-069	MKE-21-069-00-01-210817	8/17/2021	0 - 1		**11**	**80**	**80**
MKE-21-069	MKE-21-069-01-03-210817	8/17/2021	1 - 3		**9**	**64**	**64**
MKE-21-069	MKE-21-069-03-4.8-210817	8/17/2021	3 - 4.8		**11**	**76**	**76**
MKE-21-069	MKE-21-069-4.8-5.6-210817	8/17/2021	4.8 - 5.6		**0.1**	**0.83 J**	**0.88 J**
MKE-21-069	*MKE-21-069-5.6-7.2-210817*	8/17/2021	5.6 - 7.2		0.0089 U	0.075 U	0.075 U
MKE-21-069	*FD-202108171320*	8/17/2021	5.6 - 7.2		0.0089 U	**0.010 J**	**0.15 J**
MKE-21-070	MKE-21-070-00-1.2-210819	8/19/2021	0 - 1.2		**1.4**	**10 J**	**10 J**
MKE-21-070	MKE-21-070-1.2-1.8-210819	8/19/2021	1.2 - 1.8		**3.3**	**24 J**	**24 J**
MKE-21-070	MKE-21-070-1.8-3.2-210819	8/19/2021	1.8 - 3.2		**14**	**100 J**	**100 J**
MKE-21-070	MKE-21-070-3.2-5.2-210819	8/19/2021	3.2 - 5.2		**3.2**	**24**	**24**
MKE-21-070	MKE-21-070-5.2-6.2-210819	8/19/2021	5.2 - 6.2		**3**	**23**	**23**
MKE-21-070	MKE-21-070-6.2-7.5-210819	8/19/2021	6.2 - 7.5		**2.4**	**17 J**	**17 J**
MKE-21-070	*MKE-21-070-7.5-8.5-210819*	8/19/2021	7.5 - 8.5		**0.023 J**	**0.068 J**	**0.20 J**
MKE-21-071	MKE-21-071-00-01-210819	8/19/2021	0 - 1		**1.6**	**12 J**	**12 J**
MKE-21-071	MKE-21-071-01-03-210819	8/19/2021	1 - 3		**3.3**	**24 J**	**24 J**
MKE-21-071	MKE-21-071-03-4.8-210819	8/19/2021	3 - 4.8		**0.042**	**0.32 J**	**0.40 J**
MKE-21-071	*MKE-21-071-4.8-5.5-210819*	8/19/2021	4.8 - 5.5		0.0099 U	0.083 U	0.083 U
MKE-21-072	MKE-21-072-00-01-210819	8/19/2021	0 - 1		**0.73**	**5.2 J**	**5.2 J**
MKE-21-072	MKE-21-072-01-03-210819	8/19/2021	1 - 3		**2.4**	**17 J**	**17 J**
MKE-21-072	FD-202108191215	8/19/2021	1 - 3		**2.6**	**19 J**	**19 J**
MKE-21-072	MKE-21-072-03-3.5-210819	8/19/2021	3 - 3.5		**1.6**	**11**	**11**
MKE-21-072	*MKE-21-072-3.5-4.4-210819*	8/19/2021	3.5 - 4.4		**0.061**	**0.32 J**	**0.41 J**
MKE-21-073	MKE-21-073-00-01-210809	8/9/2021	0 - 1		**1.4**	**11 J**	**11 J**
MKE-21-073	MKE-21-073-01-03-210809	8/9/2021	1 - 3		**4.9**	**37**	**37**
MKE-21-073	MKE-21-073-03-5.1-210809	8/9/2021	3 - 5.1		**3.9**	**30**	**30**
MKE-21-074	MKE-21-074-00-01-210809	8/9/2021	0 - 1		**1.3**	**11 J**	**11 J**
MKE-21-074	MKE-21-074-01-2.7-210809	8/9/2021	1 - 2.7		**2.6**	**20**	**20**
MKE-21-074	MKE-21-074-2.7-4.3-210809	8/9/2021	2.7 - 4.3		**0.17**	**1.1 J**	**1.1 J**
MKE-21-075	MKE-21-075-00-01-210809	8/9/2021	0 - 1		**1**	**8.1 J**	**8.2 J**
MKE-21-075	MKE-21-075-01-03-210809	8/9/2021	1 - 3		**3.1**	**23 J**	**23 J**
MKE-21-075	MKE-21-075-03-05-210809	8/9/2021	3 - 5		**0.56**	**3.8 J**	**3.8 J**
Milwaukee Bay – South Adjacent to the Port Milwaukee							
MKE-21-076	MKE-21-076-00-01-210817	8/17/2021	0 - 1		**4**	**29 J**	**29 J**
MKE-21-076	FD-202108170815	8/17/2021	0 - 1		**4.2**	**32 J**	**32 J**
MKE-21-076	MKE-21-076-01-2.3-210817	8/17/2021	1 - 2.3		**3.1**	**24**	**24**
MKE-21-076	MKE-21-076-2.3-3.3-210817	8/17/2021	2.3 - 3.3		**0.23**	**1.8 J**	**1.8 J**
MKE-21-076	MKE-21-076-3.3-4.4-210817	8/17/2021	3.3 - 4.4		0.0098 U	**0.013 J**	**0.16 J**
MKE-21-076	FR-202108170830	8/17/2021	3.3 - 4.4		0.0098 U	**0.10 J**	**0.25 J**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Pyrene (mg/kg) 129-00-0 1.52 4.56 7.6	Total PAH (U = 0) (mg/kg) -- 22.8 68.4 114	Total PAH (U = 1/2 maximum limit) (mg/kg) -- 22.8 68.4 114
MKE-21-077	MKE-21-077-00-01-210817	8/17/2021	0 - 1		**4.5**	**34**	**34**
MKE-21-077	MKE-21-077-01-03-210817	8/17/2021	1 - 3		**0.47**	**3.6 J**	**3.6 J**
MKE-21-077	MKE-21-077-03-05-210817	8/17/2021	3 - 5		**0.26**	**1.7 J**	**1.7 J**
MKE-21-077	MKE-21-077-05-07-210817	8/17/2021	5 - 7		0.011 U	0.095 U	0.095 U
MKE-21-077	MKE-21-077-07-09-210817	8/17/2021	7 - 9		0.011 U	0.093 U	0.093 U
MKE-21-077	MKE-21-077-09-11-210817	8/17/2021	9 - 11		0.012 U	0.10 U	0.10 U
MKE-21-077	MKE-21-077-11-13-210817	8/17/2021	11 - 13		0.011 U	0.096 U	0.096 U
MKE-21-077	MKE-21-077-13-14.2-210817	8/17/2021	13 - 14.2		0.011 U	0.090 U	0.090 U
MKE-21-078	MKE-21-078-00-01-210817	8/17/2021	0 - 1		**3.1**	**22 J**	**22 J**
MKE-21-078	MKE-21-078-01-03-210817	8/17/2021	1 - 3		**3**	**23**	**23**
MKE-21-078	MKE-21-078-03-05-210817	8/17/2021	3 - 5		**2.6**	**19 J**	**19 J**
MKE-21-078	FD-202108171430	8/17/2021	3 - 5		**2.1**	**15**	**15**
MKE-21-078	MKE-21-078-05-07-210817	8/17/2021	5 - 7		**0.4**	**2.7 J**	**2.7 J**
MKE-21-078	MKE-21-078-07-8.7-210817	8/17/2021	7 - 8.7		**0.03 J**	**0.13 J**	**0.24 J**
MKE-21-078	MKE-21-078-8.7-10.7-210817	8/17/2021	8.7 - 10.7		0.0090 U	0.076 U	0.076 U
MKE-21-078	MKE-21-078-10.7-12.7-210817	8/17/2021	10.7 - 12.7		0.0090 U	0.076 U	0.076 U
MKE-21-078	MKE-21-078-12.7-14.7-210817	8/17/2021	12.7 - 14.7		0.0091 U	0.077 U	0.077 U
MKE-21-078	MKE-21-078-14.7-15.7-210817	8/17/2021	14.7 - 15.7		0.0088 U	0.074 U	0.074 U
South Menomonee Canal – East							
SMC-21-001	SMC-21-001-00-01-210821	8/21/2021	0 - 1		**5.3**	**41 J**	**41 J**
SMC-21-001	SMC-21-001-01-2.5-210821	8/21/2021	1 - 2.5		**6.9**	**49 J**	**49 J**
SMC-21-001	FD-202108210755	8/21/2021	1 - 2.5		**6.3**	**46 J**	**46 J**
SMC-21-001	SMC-21-001-2.5-04-210821	8/21/2021	2.5 - 4		**6.2**	**42 J**	**42 J**
SMC-21-001	SMC-21-001-04-06-210821	8/21/2021	4 - 6		**9.1**	**60 J**	**60 J**
SMC-21-001	SMC-21-001-06-08-210821	8/21/2021	6 - 8		**16**	**100 J**	**100 J**
SMC-21-001	SMC-21-001-08-8.3-210821	8/21/2021	8 - 8.3		**13**	**85 J**	**85 J**
SMC-21-002	SMC-21-002-00-01-210821	8/21/2021	0 - 1		**4.7**	**36 J**	**36 J**
SMC-21-002	SMC-21-002-01-2.5-210821	8/21/2021	1 - 2.5		**2.8**	**21 J**	**21 J**
SMC-21-002	FD-202108211055	8/21/2021	1 - 2.5		**2.3**	**18 J**	**18 J**
SMC-21-002	SMC-21-002-2.5-04-210821	8/21/2021	2.5 - 4		**1.2**	**8.4 J**	**8.4 J**
SMC-21-002	SMC-21-002-04-4.9-210821	8/21/2021	4 - 4.9		**4.5**	**31 J**	**31 J**
SMC-21-003	SMC-21-003-00-01-210821	8/21/2021	0 - 1		**4.2**	**32 J**	**32 J**
SMC-21-003	SMC-21-003-01-2.5-210821	8/21/2021	1 - 2.5		**4.9**	**37 J**	**37 J**
SMC-21-003	SMC-21-003-2.5-04-210821	8/21/2021	2.5 - 4		**4.6**	**36 J**	**36 J**
SMC-21-003	SMC-21-003-04-5.1-210821	8/21/2021	4 - 5.1		**5.1**	**35 J**	**35 J**
SMC-21-003	SMC-21-003-5.1-7.1-210821	8/21/2021	5.1 - 7.1		**0.14**	**0.82 J**	**0.92 J**
SMC-21-003	SMC-21-003-7.1-9.1-210821	8/21/2021	7.1 - 9.1		0.014 U	0.12 U	0.12 U
SMC-21-003	SMC-21-003-9.1-9.4-210821	8/21/2021	9.1 - 9.4		0.015 U	0.13 U	0.13 U
SMC-21-004	SMC-21-004-00-01-210821	8/21/2021	0 - 1		**11**	**73**	**73**
SMC-21-004	SMC-21-004-01-2.5-210821	8/21/2021	1 - 2.5		**14**	**93**	**93**
SMC-21-004	SMC-21-004-2.5-04-210821	8/21/2021	2.5 - 4		**23**	**150 J**	**150 J**
SMC-21-004	SMC-21-004-04-06-210821	8/21/2021	4 - 6		**18**	**120**	**120**
SMC-21-004	SMC-21-004-06-08-210821	8/21/2021	6 - 8		**8.3**	**52**	**52**
SMC-21-004	SMC-21-004-08-8.8-210821	8/21/2021	8 - 8.8		**3.6**	**23**	**23**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. PEC 3 x PEC 5 x PEC	Pyrene (mg/kg) 129-00-0 1.52 4.56 7.6	Total PAH (U = 0) (mg/kg) -- 22.8 68.4 114	Total PAH (U = 1/2 maximum limit) (mg/kg) -- 22.8 68.4 114
South Menomonee Canal – Middle							
SMC-21-005	SMC-21-005-00-01-210820	8/20/2021	0 - 1		**7**	**55 J**	**55 J**
SMC-21-005	SMC-21-005-01-2.5-210820	8/20/2021	1 - 2.5		**6**	**41 J**	**41 J**
SMC-21-005	SMC-21-005-2.5-04-210820	8/20/2021	2.5 - 4		**11**	**75 J**	**75 J**
SMC-21-005	SMC-21-005-04-06-210820	8/20/2021	4 - 6		**16**	**110**	**110**
SMC-21-005	SMC-21-005-06-6.7-210820	8/20/2021	6 - 6.7		**6.8**	**46**	**46**
SMC-21-005	*SMC-21-005-6.7-8.7-210820*	8/20/2021	6.7 - 8.7		**0.071**	**0.42 J**	**0.55 J**
SMC-21-005	*SMC-21-005-8.7-10.7-210820*	8/20/2021	8.7 - 10.7		**0.029 J**	**0.12 J**	**0.29 J**
SMC-21-005	*SMC-21-005-10.7-12.7-210820*	8/20/2021	10.7 - 12.7		**0.012 J**	**0.026 J**	**0.20 J**
SMC-21-005	*FR-202108201505*	8/20/2021	10.7 - 12.7		**0.024 J**	**0.080 J**	**0.25 J**
SMC-21-006	SMC-21-006-0.1-01-210821	8/21/2021	0.1 - 1		**8.3**	**57**	**57**
SMC-21-006	SMC-21-006-01-2.5-210821	8/21/2021	1 - 2.5		**8.1**	**54**	**54**
SMC-21-006	SMC-21-006-03-04-210821	8/21/2021	3 - 4		**0.018 J**	**0.052 J**	**0.19 J**
SMC-21-006	SMC-21-006-04-06-210821	8/21/2021	4 - 6		0.0092 U	0.078 U	0.078 U
SMC-21-006	SMC-21-006-06-08-210821	8/21/2021	6 - 8		0.0092 U	0.078 U	0.078 U
SMC-21-006	SMC-21-006-08-10-210821	8/21/2021	8 - 10		0.0090 U	0.076 U	0.076 U
SMC-21-006	SMC-21-006-10-12-210821	8/21/2021	10 - 12		0.0091 U	0.077 U	0.077 U
SMC-21-006	SMC-21-006-12-12.8-210821	8/21/2021	12 - 12.8		0.0094 U	0.079 U	0.079 U
SMC-21-007	SMC-21-007-00-01-210821	8/21/2021	0 - 1		**0.014 J**	**0.014 J**	**0.23 J**
SMC-21-007	SMC-21-007-01-2.5-210821	8/21/2021	1 - 2.5		0.015 U	0.12 U	0.12 U
SMC-21-007	FD-202108211310	8/21/2021	1 - 2.5		0.014 U	0.12 U	0.12 U
SMC-21-007	SMC-21-007-2.5-04-210821	8/21/2021	2.5 - 4		0.014 U	0.12 U	0.12 U
SMC-21-007	SMC-21-007-04-06-210821	8/21/2021	4 - 6		0.011 U	0.096 U	0.096 U
SMC-21-007	SMC-21-007-06-7.8-210821	8/21/2021	6 - 7.8		0.010 U	0.088 U	0.088 U
South Menomonee Canal – West							
SMC-21-008	SMC-21-008-01-1.5-210821	8/21/2021	1 - 1.5		**3.1**	**23 J**	**23 J**
SMC-21-008	*SMC-21-008-1.5-2.5-210821*	8/21/2021	1.5 - 2.5		**0.073**	**0.46 J**	**0.58 J**
SMC-21-008	*SMC-21-008-2.5-04-210821*	8/21/2021	2.5 - 4		**0.05 J**	**0.32 J**	**0.46 J**
SMC-21-008	*SMC-21-008-04-06-210821*	8/21/2021	4 - 6		0.013 U	0.11 U	0.11 U
SMC-21-008	*SMC-21-008-06-08-210821*	8/21/2021	6 - 8		0.012 U	0.10 U	0.10 U
SMC-21-008	*SMC-21-008-08-10-210821*	8/21/2021	8 - 10		0.012 U	0.10 U	0.10 U
SMC-21-008	*SMC-21-008-10-10.6-210821*	8/21/2021	10 - 10.6		0.0093 U	0.079 U	0.079 U
SMC-21-008	*SMC-21-008-10.6-12.6-210821*	8/21/2021	10.6 - 12.6		0.0093 U	0.078 U	0.078 U
SMC-21-008	*SMC-21-008-12.6-13.6-210821*	8/21/2021	12.6 - 13.6		0.0092 U	0.078 U	0.078 U
South Menomonee Canal – Entrance to Burnham Canal							
SMC-21-010	SMC-21-010-00-01-210811	8/11/2021	0 - 1		**14**	**110 J**	**110 J**
SMC-21-010	SMC-21-010-01-1.6-210811	8/11/2021	1 - 1.6		**19**	**140 J**	**140 J**
SMC-21-011	SMC-21-011-00-01-210811	8/11/2021	0 - 1		**4.3**	**29 J**	**29 J**
SMC-21-011	SMC-21-011-01-02-210811	8/11/2021	1 - 2		**25**	**170 J**	**170 J**

Table 5-4
Analytical Results for Total Organic Carbon and PAHs

Notes:
1. Validated results were screened against the PEC, 3 x PEC, and 5 x PEC. PEC were provided in DNR 2003.
2. DNR (Wisconsin Department of Natural Resources), 2003. *Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application* . Publication No. WT-732.
3. Total PAHs are the sum of 2-methylnaphthalene, acenapthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(e)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthenes, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, and pyrene.
4. Total PAHs were calculated by summing the result values, with non-detects treated as zero values (U=0) or non-detect values treated as one-half of the detection limit (U=1/2 maximum limit). If all results were below detection, the highest detection limit was reported with a U-qualifier to indicate the total is below detection. Non-detect values treated as one-half the detection limit tend to produce results that are biased high.
5. Sample intervals defined as native materials based on visual observations are shown in italics.

Screening Criteria:
Detected concentration is greater than PEC screening level
Detected concentration is greater than 3 x PEC screening level
Detected concentration is greater than 5 x PEC screening level
Bold: detected result

Abbreviations:
CAS: Chemical Abstracts System
DNR: Wisconsin Department of Natural Resources
FD: field duplicate sample
FR: field replicate sample
ft bss: feet below sediment surface
J: indicates an estimated value
J-: indicates an estimated value with a potentially low bias
mg/kg: milligrams per kilogram
PAH: polycyclic aromatic hydrocarbon
PEC: probable effects concentration
TOC: total organic carbon
U: indicates the compound analyzed for but not detected above detection limit

Table 5-5
Analytical Results for PCB Aroclors

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	Aroclor 1016 (mg/kg) 12674-11-2 1 5 50	Aroclor 1221 (mg/kg) 11104-28-2 1 5 50	Aroclor 1232 (mg/kg) 11141-16-5 1 5 50	Aroclor 1242 (mg/kg) 53469-21-9 1 5 50	Aroclor 1248 (mg/kg) 12672-29-6 1 5 50	Aroclor 1254 (mg/kg) 11097-69-1 1 5 50	Aroclor 1260 (mg/kg) 11096-82-5 1 5 50	Aroclor 1262 (mg/kg) 37324-23-5 1 5 50	Aroclor 1268 (mg/kg) 11100-14-4 1 5 50	Total PCB Aroclors (U = 0) (mg/kg) -- 1 5 50	Total PCB Aroclors (U = 1/2 maximum limit) (mg/kg) -- 1 5 50
Upstream Kinnickinnic River															
KKR-21-001	KKR-21-001-210811	8/11/2021	0 - 0.3		0.0034 U	0.0038 U	0.0026 U	0.0016 U	0.0025 U	0.0032 U	0.0030 U	0.0037 U	0.0014 U	0.0038 U	0.0038 U
KKR-21-002	KKR-21-002-210813	8/13/2021	0 - 0.1		0.0036 U	0.0039 U	0.0027 U	0.0016 U	0.0027 U	0.0033 U	0.0031 U	0.0039 U	0.0015 U	0.0039 U	0.0039 U
KKR-21-003	KKR-21-003-210811	8/11/2021	0 - 0.3		0.0038 U	0.0041 U	0.0028 U	0.0017 U	0.0028 U	0.0035 U	0.0033 U	0.0041 U	0.0016 U	0.0041 U	0.0041 U
KKR-21-004	KKR-21-004-00-0.6-210811	8/12/2021	0 - 0.6		0.0034 U	0.0037 U	0.0025 U	0.0015 U	0.0025 U	0.0031 U	0.0030 U	0.0037 U	0.0014 U	0.0037 U	0.0037 U
KKR-21-004	KKR-21-004-0.6-1.3-210811	8/12/2021	0.6 - 1.3		0.0035 U	0.0038 U	0.0026 U	0.0016 U	0.0026 U	0.0032 U	0.0031 U	0.0038 U	0.0015 U	0.0038 U	0.0038 U
KKR-21-005	KKR-21-005-00-0.5-210812	8/12/2021	0 - 0.5		0.0034 U	0.0037 U	0.0025 U	0.0015 U	0.0025 U	0.0031 U	0.0030 U	0.0037 U	0.0014 U	0.0037 U	0.0037 U
KKR-21-006	KKR-21-006-00-0.4-210812	8/12/2021	0 - 0.4		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0024 U	0.0030 U	0.0029 U	0.0036 U	0.0014 U	0.0036 U	0.0036 U
KKR-21-007	KKR-21-007-210811	8/11/2021	0 - 0.3		0.0035 U	0.0038 U	0.0026 U	0.0016 U	0.0026 U	0.0032 U	**0.019**	0.0038 U	0.0015 U	**0.019**	**0.03**
KKR-21-007	FD-202108110815	8/11/2021	0 - 0.3		0.0036 U	0.0039 U	0.0027 U	0.0016 U	0.0026 U	0.0033 U	0.0031 U	0.0039 U	0.0015 U	0.0039 U	0.0039 U
KKR-21-008	KKR-21-008-210811	8/11/2021	0 - 0.3		0.0032 U	0.0035 U	0.0024 U	0.0014 U	**0.11**	0.0029 U	**0.031**	0.0035 U	0.0013 U	**0.14**	**0.15**
KKR-21-009	KKR-21-009-210811	8/11/2021	0 - 0.3		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0024 U	**0.016**	0.0029 U	0.0036 U	0.0014 U	**0.016**	**0.027**
KKR-21-010	KKR-21-010-00-0.1-210812	8/12/2021	0 - 0.1		0.0036 U	0.0039 U	0.0027 U	0.0016 U	0.0026 U	0.0033 U	0.0031 U	0.0039 U	0.0015 U	0.0039 U	0.0039 U
KKR-21-010	FD-202108121455	8/12/2021	0 - 0.1		0.0036 U	0.0039 U	0.0027 U	0.0016 U	0.0026 U	0.0033 U	0.0031 U	0.0038 U	0.0015 U	0.0039 U	0.0039 U
KKR-21-011	KKR-21-011-00-0.2-210812	8/12/2021	0 - 0.2		0.0043 U	0.0046 U	0.0032 U	0.0019 U	0.0031 U	0.0039 U	0.0037 U	0.0046 U	0.0018 U	0.0046 U	0.0046 U
KKR-21-012	KKR-21-012-00-0.2-210812	8/12/2021	0 - 0.2		0.0035 U	0.0038 U	0.0026 U	0.0016 U	0.0026 U	0.0032 U	0.0031 U	0.0038 U	0.0015 U	0.0038 U	0.0038 U
KKR-21-013	KKR-21-013-00-0.1-210813	8/13/2021	0 - 0.1		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0024 U	**0.019**	0.0029 U	0.0035 U	0.0014 U	**0.019**	**0.03**
KKR-21-014	KKR-21-014-00-0.25-210812	8/12/2021	0 - 0.25		0.0036 U	0.0039 U	0.0027 U	0.0016 U	0.0027 U	**0.011**	0.0031 U	0.0039 U	0.0015 U	**0.011**	**0.023**
KKR-21-015	KKR-21-015-00-0.25-210812	8/12/2021	0 - 0.25		0.0032 U	0.0034 U	0.0024 U	0.0014 U	0.0023 U	**0.0063 J**	0.0028 U	0.0034 U	0.0013 U	**0.0063 J**	**0.016 J**
KKR-21-016	KKR-21-016-00-0.2-210812	8/12/2021	0 - 0.2		0.0043 U	0.0046 U	0.0032 U	0.0019 U	0.0031 U	**0.0097 J**	0.0037 U	0.0046 U	0.0018 U	**0.0097 J**	**0.023 J**
KKR-21-016	FD-202108121430	8/12/2021	0 - 0.2		0.0042 U	0.0046 U	0.0032 U	0.0019 U	0.0031 U	**0.014**	0.0037 U	0.0046 U	0.0017 U	**0.014**	**0.028**
KKR-21-017	KKR-21-017-00-0.1-210813	8/13/2021	0 - 0.1		0.0065 U	0.0071 U	0.0049 U	0.0029 U	0.0048 U	**0.07**	0.0057 U	0.0070 U	0.0027 U	**0.07**	**0.091**
KKR-21-018	KKR-21-018-00-0.3-210812	8/12/2021	0 - 0.3		0.0034 U	0.0037 U	0.0025 U	0.0015 U	0.0025 U	**0.0061 J**	0.0029 U	0.0036 U	0.0014 U	**0.0061 J**	**0.017 J**
KKR-21-019	KKR-21-019-210813	8/13/2021	0 - 0.1		0.0036 U	0.0039 U	0.0027 U	0.0016 U	**0.95**	0.0033 U	**0.39**	0.0039 U	0.0015 U	**1.3**	**1.4**
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1		0.0046 U	0.0050 U	0.0034 U	0.0021 U	**0.23**	0.0042 U	**0.64**	0.0050 U	0.0019 U	**0.87**	**0.88**
KKR-21-021	KKR-21-021-210813	8/13/2021	0 - 0.1		0.0040 U	0.0043 U	0.0030 U	0.0018 U	**0.065**	0.0036 U	**0.065**	0.0043 U	0.0016 U	**0.13**	**0.14**
Kinnickinnic River – Reach 1															
KKR-21-024	KKR-21-024-00-0.5-210806	8/6/2021	0 - 0.5		0.0044 U	0.0047 U	0.0033 U	0.0020 U	0.0032 U	0.0040 U	0.0038 U	0.0047 U	0.0018 U	0.0047 U	0.0047 U
KKR-21-024	KKR-21-024-0.5-1.25-210806	8/6/2021	0.5 - 1.25		0.0035 U	0.0038 U	0.0026 U	0.0016 U	0.0026 U	0.0032 U	0.0031 U	0.0038 U	0.0014 U	0.0038 U	0.0038 U
KKR-21-025	KKR-21-025-00-01-210806	8/6/2021	0 - 1		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.031**	0.0043 U	**0.025**	0.0051 U	0.0019 U	**0.056**	**0.069**
KKR-21-026	KKR-21-026-0.2-01-210806	8/6/2021	0.2 - 1		0.0037 U	0.0040 U	0.0027 U	0.0016 U	**3.6**	0.0034 U	**0.31**	0.0040 U	0.0015 U	**3.9**	**3.9**
KKR-21-026	KKR-21-026-01-1.7-210806	8/6/2021	1 - 1.7		0.0038 U	0.0042 U	0.0029 U	0.0017 U	**3.5**	0.0035 U	**0.23**	0.0041 U	0.0016 U	**3.7**	**3.7**
KKR-21-028	KKR-21-028-00-0.8-210806	8/6/2021	0 - 0.8		0.0037 U	0.0040 U	0.0028 U	0.0017 U	**0.034**	0.0034 U	**0.013**	0.0040 U	0.0015 U	**0.047**	**0.058**
KKR-21-028	FD-202108061200	8/6/2021	0 - 0.8		0.0037 U	0.0040 U	0.0027 U	0.0016 U	**0.016**	0.0034 U	0.0032 U	0.0039 U	0.0015 U	**0.016**	**0.028**
KKR-21-029	KKR-21-029-210810	8/10/2021	0 - 0.3		0.0083 U	0.0090 U	0.0062 U	0.0037 U	**0.16**	0.0077 U	**0.057**	0.0090 U	0.0034 U	**0.22**	**0.24**
KKR-21-031	KKR-21-031-210810	8/10/2021	0 - 0.3		0.0034 U	0.0037 U	0.0025 U	0.0015 U	**0.25**	0.0031 U	**0.023**	0.0036 U	0.0014 U	**0.27**	**0.28**
KKR-21-032	KKR-21-032-00-0.7-210810	8/10/2021	0 - 0.7		0.0041 U	0.0045 U	0.0031 U	0.0019 U	**0.15**	0.0038 U	**0.14**	0.0045 U	0.0017 U	**0.29**	**0.3**
KKR-21-032	KKR-21-032-0.7-02-210810	8/10/2021	0.7 - 2		0.0065 U	0.0071 U	0.0049 U	0.0029 U	**0.18**	0.0060 U	**0.042**	0.0070 U	0.0027 U	**0.22**	**0.24**
KKR-21-033	KKR-21-033-00-0.4-210810	8/10/2021	0 - 0.4		0.0066 U	0.0072 U	0.0050 U	0.0030 U	**0.31**	0.0061 U	**0.068**	0.0072 U	0.0027 U	**0.38**	**0.4**
KKR-21-033	KKR-21-033-0.4-1.2-210810	8/10/2021	0.4 - 1.2		0.038 U	0.042 U	0.029 U	0.017 U	**6.6 J**	0.035 U	**0.89 J**	0.041 U	0.016 U	**7.5 J**	**7.6 J**
KKR-21-033	FR-202108101135	8/10/2021	0.4 - 1.2		0.0040 U	0.0044 U	0.0030 U	0.0018 U	**1.4 J**	0.0037 U	**0.22 J**	0.0044 U	0.0017 U	**1.6 J**	**1.6 J**

Table 5-5
Analytical Results for PCB Aroclors

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	Aroclor 1016 (mg/kg) 12674-11-2 1 5 50	Aroclor 1221 (mg/kg) 11104-28-2 1 5 50	Aroclor 1232 (mg/kg) 11141-16-5 1 5 50	Aroclor 1242 (mg/kg) 53469-21-9 1 5 50	Aroclor 1248 (mg/kg) 12672-29-6 1 5 50	Aroclor 1254 (mg/kg) 11097-69-1 1 5 50	Aroclor 1260 (mg/kg) 11096-82-5 1 5 50	Aroclor 1262 (mg/kg) 37324-23-5 1 5 50	Aroclor 1268 (mg/kg) 11100-14-4 1 5 50	Total PCB Aroclors (U = 0) (mg/kg) -- 1 5 50	Total PCB Aroclors (U = 1/2 maximum limit) (mg/kg) -- 1 5 50
KKR-21-034	KKR-21-034-00-1.0-210808	8/8/2021	0 - 1		0.0045 U	0.0049 U	0.0034 U	0.0020 U	**0.045**	0.0042 U	**0.055**	0.0049 U	0.0019 U	**0.1**	**0.11**
KKR-21-034	KKR-21-034-01-1.2-210808	8/8/2021	1 - 1.2		0.0035 U	0.0038 U	0.0026 U	0.0016 U	**0.064**	0.0033 U	**0.036**	0.0038 U	0.0015 U	**0.1**	**0.11**
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1		0.0044 U	0.0048 U	0.0033 U	**2.3**	0.0033 U	0.0041 U	**0.18**	0.0048 U	0.0018 U	**2.5**	**2.5**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3		0.0039 U	0.0043 U	0.0029 U	0.0018 U	**1.4**	0.0036 U	**0.16**	0.0043 U	0.0016 U	**1.6**	**1.6**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5		0.0042 U	0.0046 U	0.0032 U	0.0019 U	**0.38**	0.0039 U	**0.03**	0.0046 U	0.0017 U	**0.41**	**0.42**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8		0.0044 U	0.0048 U	0.0033 U	0.0020 U	0.0033 U	**0.32**	0.0039 U	0.0048 U	0.0018 U	**0.32**	**0.33**
KKR-21-036	KKR-21-036-00-0.8-210810	8/10/2021	0 - 0.8		0.0057 U	0.0062 U	0.0043 U	0.0026 U	**0.28**	0.0053 U	**0.11**	0.0062 U	0.0024 U	**0.39**	**0.41**
KKR-21-036	KKR-21-036-0.8-1.2-210810	8/10/2021	0.8 - 1.2		0.0046 U	0.0051 U	0.0035 U	0.0021 U	**0.13 J**	0.0043 U	**0.062**	0.0050 U	0.0019 U	**0.19 J**	**0.21 J**
KKR-21-036	FD-202108101200	8/10/2021	0.8 - 1.2		0.0046 U	0.0050 U	0.0034 U	0.0021 U	**0.24 J**	0.0042 U	**0.14**	0.0049 U	0.0019 U	**0.38 J**	**0.39 J**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1		0.0044 U	0.0048 U	0.0033 U	0.0020 U	**3.1 J**	0.0040 U	**0.36**	0.0047 U	0.0018 U	**3.5 J**	**3.5 J**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3		0.0042 U	0.0046 U	0.0032 U	0.0019 U	**3.9**	0.0039 U	**0.51**	0.0046 U	0.0017 U	**4.4**	**4.4**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5		0.0045 U	0.0049 U	0.0034 U	0.0020 U	**0.94 J-**	0.0041 U	0.0039 U	0.0049 U	0.0019 U	**0.94 J**	**0.95 J**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5		0.0041 U	0.0045 U	0.0031 U	0.0019 U	0.0030 U	**0.097**	0.0036 U	0.0044 U	0.0017 U	**0.097**	**0.11**
KKR-21-038	KKR-21-038-00-01-210807	8/7/2021	0 - 1		0.0043 U	0.0046 U	0.0032 U	0.0019 U	**1.1**	0.0039 U	**0.11**	0.0046 U	0.0018 U	**1.2**	**1.2**
KKR-21-038	KKR-21-038-01-03-210807	8/7/2021	1 - 3		0.0030 U	0.0033 U	0.0023 U	0.0014 U	**0.91 J**	0.0028 U	**0.087 J**	0.0033 U	0.0013 U	**1.0 J**	**1.0 J**
KKR-21-038	FD-202108071010	8/7/2021	1 - 3		0.0043 U	0.0047 U	0.0032 U	0.0019 U	**1.7 J**	0.0040 U	**0.18 J**	0.0046 U	0.0018 U	**1.9 J**	**1.9 J**
KKR-21-038	KKR-21-038-03-4.9-210807	8/7/2021	3 - 4.9		0.045 U	0.049 U	0.033 U	0.020 U	**6**	0.041 U	**0.65**	0.048 U	0.018 U	**6.7**	**6.8**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4		0.0051 U	0.0056 U	0.0038 U	**0.9**	0.0038 U	0.0047 U	**0.055**	0.0055 U	0.0021 U	**0.96**	**0.97**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7		0.041 U	0.044 U	0.030 U	**28**	0.030 U	0.037 U	**2.9**	0.044 U	0.017 U	**31**	**31**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3		0.038 U	0.041 U	0.029 U	0.017 U	**4.7**	0.035 U	**0.67**	0.041 U	0.016 U	**5.4**	**5.5**
KKR-21-040	KKR-21-040-00-0.9-210810	8/10/2021	0 - 0.9		0.0046 U	0.0050 U	0.0034 U	0.0021 U	**0.11**	0.0042 U	**0.069**	0.0050 U	0.0019 U	**0.18**	**0.19**
KKR-21-040	KKR-21-040-0.9-1.8-210810	8/10/2021	0.9 - 1.8		0.0077 U	0.0084 U	0.0057 U	0.0035 U	**0.34**	0.0071 U	**0.088**	0.0083 U	0.0032 U	**0.43**	**0.45**
KKR-21-041	KKR-21-041-00-1.3-210807	8/7/2021	0 - 1.3		0.0035 U	0.0038 U	0.0026 U	0.0016 U	**0.25**	0.0032 U	**0.037**	0.0038 U	0.0014 U	**0.29**	**0.3**
KKR-21-041	KKR-21-041-1.3-2.3-210807	8/7/2021	1.3 - 2.3		0.0036 U	0.0039 U	0.0027 U	0.0016 U	**1.2**	0.0033 U	**0.078**	0.0039 U	0.0015 U	**1.3**	**1.3**
KKR-21-042	KKR-21-042-00-0.9-210808	8/8/2021	0 - 0.9		0.0033 U	0.0036 U	0.0025 U	0.0015 U	**0.013 J-**	0.0030 U	0.0029 U	0.0036 U	0.0014 U	**0.013 J**	**0.024 J**
KKR-21-042	FR-202108081210	8/8/2021	0 - 0.9		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0024 U	0.0030 U	0.0029 U	0.0036 U	0.0014 U	0.0036 U	0.0036 U
KKR-21-043	KKR-21-043-00-01-210807	8/7/2021	0 - 1		0.0033 U	0.0036 U	0.0025 U	0.0015 U	**0.4**	0.0031 U	**0.054**	0.0036 U	0.0014 U	**0.45**	**0.46**
KKR-21-043	KKR-21-043-01-03-210807	8/7/2021	1 - 3		0.0036 U	0.0039 U	0.0027 U	0.0016 U	**0.61**	0.0033 U	**0.05**	0.0039 U	0.0015 U	**0.66**	**0.67**
KKR-21-043	KKR-21-043-03-05-210807	8/7/2021	3 - 5		0.0045 U	0.0049 U	0.0034 U	0.0020 U	**0.84**	0.0041 U	**0.17**	0.0049 U	0.0019 U	**1**	**1**
KKR-21-043	KKR-21-043-05-5.9-210807	8/7/2021	5 - 5.9		0.0042 U	0.0046 U	0.0032 U	0.0019 U	0.0031 U	**0.21**	0.0037 U	0.0046 U	0.0018 U	**0.21**	**0.22**
KKR-21-044	KKR-21-044-0.2-0.9-210808	8/8/2021	0.2 - 0.9		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0024 U	0.0030 U	0.0029 U	0.0036 U	0.0014 U	0.0036 U	0.0036 U
KKR-21-044	KKR-21-044-0.9-1.1-210808	8/8/2021	0.9 - 1.1		0.0040 U	0.0044 U	0.0030 U	0.0018 U	0.0030 U	**0.018**	0.0035 U	0.0043 U	0.0017 U	**0.018**	**0.031**
KKR-21-045	KKR-21-045-00-1.3-210808	8/8/2021	0 - 1.3		0.0033 U	0.0036 U	0.0025 U	0.0015 U	**0.039**	0.0031 U	**0.08**	0.0036 U	0.0014 U	**0.12**	**0.13**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3		0.033 U	0.036 U	0.025 U	0.015 U	**3.4**	0.030 U	**0.22**	0.036 U	0.014 U	**3.6**	**3.7**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8		0.038 U	0.042 U	0.029 U	0.017 U	**4.9**	0.035 U	**0.35**	0.042 U	0.016 U	**5.3**	**5.4**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4		0.0042 U	0.0046 U	0.0032 U	0.0019 U	**1.8**	0.0039 U	**0.27**	0.0046 U	0.0018 U	**2.1**	**2.1**
KKR-21-048	KKR-21-048-00-01-210808	8/8/2021	0 - 1		0.0033 U	0.0035 U	0.0024 U	0.0015 U	**0.44**	0.0030 U	**0.061**	0.0035 U	0.0013 U	**0.5**	**0.51**
KKR-21-048	KKR-21-048-01-1.8-210808	8/8/2021	1 - 1.8		0.0032 U	0.0035 U	0.0024 U	0.0014 U	**0.57**	0.0029 U	**0.078**	0.0034 U	0.0013 U	**0.65**	**0.66**
KKR-21-049	KKR-21-049-00-0.8-210808	8/8/2021	0 - 0.8		0.0031 U	0.0034 U	0.0023 U	0.0014 U	**0.39**	0.0029 U	**0.066**	0.0034 U	0.0013 U	**0.46**	**0.46**
KKR-21-049	KKR-21-049-0.8-03-210808	8/8/2021	0.8 - 3		0.0042 U	0.0046 U	0.0031 U	0.0019 U	0.0031 U	**0.3**	0.0037 U	0.0045 U	0.0017 U	**0.3**	**0.31**
KKR-21-049	KKR-21-049-03-4.4-210808	8/8/2021	3 - 4.4		0.0042 U	0.0046 U	0.0032 U	0.0019 U	0.0031 U	**0.19 J**	0.0037 U	0.0046 U	0.0018 U	**0.19 J**	**0.20 J**
KKR-21-049	FD-202108080940	8/8/2021	3 - 4.4		0.0043 U	0.0046 U	0.0032 U	0.0019 U	0.0031 U	**0.078 J**	0.0037 U	0.0046 U	0.0018 U	**0.078 J**	**0.092 J**

Table 5-5
Analytical Results for PCB Aroclors

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	Aroclor 1016 (mg/kg) 12674-11-2 1 5 50	Aroclor 1221 (mg/kg) 11104-28-2 1 5 50	Aroclor 1232 (mg/kg) 11141-16-5 1 5 50	Aroclor 1242 (mg/kg) 53469-21-9 1 5 50	Aroclor 1248 (mg/kg) 12672-29-6 1 5 50	Aroclor 1254 (mg/kg) 11097-69-1 1 5 50	Aroclor 1260 (mg/kg) 11096-82-5 1 5 50	Aroclor 1262 (mg/kg) 37324-23-5 1 5 50	Aroclor 1268 (mg/kg) 11100-14-4 1 5 50	Total PCB Aroclors (U = 0) (mg/kg) -- 1 5 50	Total PCB Aroclors (U = 1/2 maximum limit) (mg/kg) -- 1 5 50
KKR-21-050	KKR-21-050-00-01-210808	8/8/2021	0 - 1		0.0060 U	0.0065 U	0.0045 U	0.0027 U	**0.26**	0.0055 U	**0.095**	0.0065 U	0.0025 U	**0.36**	**0.37**
KKR-21-050	KKR-21-050-01-03-210808	8/8/2021	1 - 3		0.0041 U	0.0045 U	0.0031 U	0.0018 U	**0.94**	0.0038 U	**0.17**	0.0044 U	0.0017 U	**1.1**	**1.1**
KKR-21-050	KKR-21-050-03-05-210808	8/8/2021	3 - 5		0.041 U	0.045 U	0.031 U	**6.5**	0.031 U	0.038 U	**0.82**	0.045 U	0.017 U	**7.3**	**7.4**
KKR-21-050	KKR-21-050-05-6.8-210808	8/8/2021	5 - 6.8		0.0039 U	0.0042 U	0.0029 U	0.0017 U	**3.5**	0.0036 U	**0.5**	0.0042 U	0.0016 U	**4**	**4**
KKM-21-001	KKM-21-001-210816	8/16/2021	0 - 0.1		0.0037 U	0.0041 U	0.0028 U	0.0017 U	0.0028 U	0.0035 U	0.0033 U	0.0041 U	0.0015 U	0.0041 U	0.0041 U
KKM-21-003	KKM-21-003-210816	8/16/2021	0 - 0.1		0.0056 U	0.0060 U	0.0042 U	0.0025 U	0.0041 U	0.0051 U	0.0049 U	0.0060 U	0.0023 U	0.0060 U	0.0060 U
KKM-21-004	KKM-21-004-210816	8/16/2021	0 - 0.1		0.011 U	0.012 U	0.0083 U	0.0050 U	0.0082 U	0.010 U	**5.6 J+**	0.012 U	0.0046 U	**5.6 J**	**5.6 J**
KKM-21-005	KKM-21-005-210816	8/16/2021	0 - 0.1		0.0031 U	0.0034 U	0.0024 U	0.0014 U	0.0023 U	0.0029 U	**0.0075 J**	0.0034 U	0.0013 U	**0.0075 J**	**0.018 J**
Kinnickinnic River – Reach 2															
KKR-21-051	KKR-21-051-00-01-210805	8/5/2021	0 - 1		0.0044 U	0.0048 U	0.0033 U	0.0020 U	**0.11 J+**	0.0040 U	**0.053 J+**	0.0047 U	0.0018 U	**0.16 J**	**0.18 J**
KKR-21-051	KKR-21-051-01-03-210805	8/5/2021	1 - 3		0.0046 U	0.0050 U	0.0035 U	0.0021 U	**1.2**	0.0042 U	**0.3**	0.0050 U	0.0019 U	**1.5**	**1.5**
KKR-21-051	KKR-21-051-03-05-210805	8/5/2021	3 - 5		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.25**	0.0043 U	**0.053**	0.0051 U	0.0019 U	**0.3**	**0.32**
KKR-21-051	KKR-21-051-05-07-210805	8/5/2021	5 - 7		0.0049 U	0.0054 U	0.0037 U	0.0022 U	0.0036 U	0.0045 U	0.0043 U	0.0053 U	0.0020 U	0.0054 U	0.0054 U
KKR-21-052	KKR-21-052-00-01-210805	8/5/2021	0 - 1		0.0068 U	0.0074 U	0.0051 U	0.0031 U	**0.038**	0.0063 U	0.0059 U	0.0073 U	0.0028 U	**0.038**	**0.06**
KKR-21-052	KKR-21-052-01-03-210805	8/5/2021	1 - 3		0.0043 U	0.0047 U	0.0033 U	0.0020 U	**1.3**	0.0040 U	**0.22**	0.0047 U	0.0018 U	**1.5**	**1.5**
KKR-21-052	KKR-21-052-03-05-210805	8/5/2021	3 - 5		0.0046 U	0.0050 U	0.0034 U	0.0021 U	**1.2**	0.0042 U	**0.22**	0.0049 U	0.0019 U	**1.4**	**1.4**
KKR-21-052	KKR-21-052-05-07-210805	8/5/2021	5 - 7		0.0045 U	0.0049 U	0.0034 U	0.0020 U	**0.037**	0.0042 U	0.0040 U	0.0049 U	0.0019 U	**0.037**	**0.052**
KKR-21-053	KKR-21-053-00-01-210805	8/5/2021	0 - 1		0.0045 U	0.0049 U	0.0034 U	0.0020 U	**0.14**	0.0042 U	**0.065**	0.0049 U	0.0019 U	**0.21**	**0.22**
KKR-21-053	KKR-21-053-01-03-210805	8/5/2021	1 - 3		0.0048 U	0.0052 U	0.0036 U	0.0022 U	**0.6**	0.0044 U	**0.12**	0.0052 U	0.0020 U	**0.72**	**0.73**
KKR-21-053	KKR-21-053-03-05-210805	8/5/2021	3 - 5		0.0048 U	0.0052 U	0.0036 U	0.0022 U	**0.13**	0.0044 U	**0.016**	0.0052 U	0.0020 U	**0.15**	**0.16**
Kinnickinnic River – Reach 3															
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9		0.042 U	0.046 U	0.032 U	0.019 U	**3.2**	0.039 U	**4.6**	0.046 U	0.018 U	**7.8**	**7.9**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25		0.046 U	0.050 U	0.034 U	0.021 U	**7.8**	0.042 U	**12**	0.049 U	0.019 U	**20**	**20**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85		0.041 U	0.045 U	0.031 U	0.019 U	**9.9**	0.038 U	**8**	0.045 U	0.017 U	**18**	**18**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1		0.064 U	0.070 U	0.048 U	0.029 U	**7.1**	0.059 U	**6.9**	0.070 U	0.027 U	**14**	**14**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9		0.13 U	0.14 U	0.095 U	0.057 U	**56**	0.12 U	**32**	0.14 U	0.053 U	**88**	**88**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9		0.13 U	0.14 U	0.095 U	0.057 U	**44 J**	0.12 U	**37**	0.14 U	0.053 U	**81 J**	**81 J**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1		0.12 U	0.13 U	0.088 U	0.053 U	**31**	0.11 U	**26**	0.13 U	0.048 U	**57**	**57**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3		0.63 U	0.69 U	0.47 U	0.28 U	**110**	0.58 U	**61**	0.68 U	0.26 U	**170**	**170**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3		0.0069 U	0.0075 U	0.0052 U	0.0031 U	**0.11**	0.0064 U	0.0060 U	0.0075 U	0.0029 U	**0.11**	**0.13**
Kinnickinnic River – Reach 4															
KKR-21-058	KKR-21-058-00-01-210819	8/19/2021	0 - 1		0.0067 U	0.0073 U	0.0050 U	0.0030 U	**1.5**	0.0062 U	**0.33**	0.0073 U	0.0028 U	**1.8**	**1.8**
KKR-21-058	KKR-21-058-01-03-210819	8/19/2021	1 - 3		0.0063 U	0.0069 U	0.0047 U	0.0028 U	**1.3**	0.0058 U	**0.29**	0.0068 U	0.0026 U	**1.6**	**1.6**
KKR-21-058	KKR-21-058-03-4.2-210819	8/19/2021	3 - 4.2		0.0060 U	0.0066 U	0.0045 U	0.0027 U	**0.25**	0.0056 U	**0.13**	0.0065 U	0.0025 U	**0.38**	**0.4**
KKR-21-059	KKR-21-059-00-01-210820	8/20/2021	0 - 1		0.0079 U	0.0086 U	0.0059 U	0.0035 U	**1.4**	0.0073 U	**0.56**	0.0085 U	0.0033 U	**2**	**2**
KKR-21-059	KKR-21-059-01-03-210820	8/20/2021	1 - 3		0.0064 U	0.0069 U	0.0048 U	0.0029 U	**4.6**	0.0059 U	**1.3**	0.0069 U	0.0026 U	**5.9**	**5.9**
KKR-21-059	KKR-21-059-03-04-210820	8/20/2021	3 - 4		0.062 U	0.067 U	0.046 U	0.028 U	**12**	0.057 U	**2.4**	0.067 U	0.026 U	**14**	**15**

Table 5-5
Analytical Results for PCB Aroclors

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	Aroclor 1016 (mg/kg) 12674-11-2 1 5 50	Aroclor 1221 (mg/kg) 11104-28-2 1 5 50	Aroclor 1232 (mg/kg) 11141-16-5 1 5 50	Aroclor 1242 (mg/kg) 53469-21-9 1 5 50	Aroclor 1248 (mg/kg) 12672-29-6 1 5 50	Aroclor 1254 (mg/kg) 11097-69-1 1 5 50	Aroclor 1260 (mg/kg) 11096-82-5 1 5 50	Aroclor 1262 (mg/kg) 37324-23-5 1 5 50	Aroclor 1268 (mg/kg) 11100-14-4 1 5 50	Total PCB Aroclors (U = 0) (mg/kg) -- 1 5 50	Total PCB Aroclors (U = 1/2 maximum limit) (mg/kg) -- 1 5 50
KKR-21-060	KKR-21-060-00-01-210820	8/20/2021	0 - 1		0.0068 U	0.0074 U	0.0051 U	0.0031 U	**1.8**	0.0063 U	**0.45**	0.0073 U	0.0028 U	**2.3**	**2.3**
KKR-21-060	KKR-21-060-01-03-210820	8/20/2021	1 - 3		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.32 J**	0.0043 U	**0.13**	0.0051 U	0.0019 U	**0.45 J**	**0.46 J**
KKR-21-060	FD-202108200805	8/20/2021	1 - 3		0.0045 U	0.0049 U	0.0033 U	0.0020 U	**0.86 J**	0.0041 U	**0.19**	0.0048 U	0.0018 U	**1.1 J**	**1.1 J**
KKR-21-060	KKR-21-060-03-05-210820	8/20/2021	3 - 5		0.0048 U	0.0053 U	0.0036 U	0.0022 U	0.0036 U	0.0045 U	0.0042 U	0.0052 U	0.0020 U	0.0053 U	0.0053 U
KKR-21-060	KKR-21-060-05-07-210820	8/20/2021	5 - 7		0.0046 U	0.0050 U	0.0035 U	0.0021 U	**0.0072 J**	0.0043 U	0.0040 U	0.0050 U	0.0019 U	**0.0072 J**	**0.022 J**
KKR-21-060	KKR-21-060-07-09-210820	8/20/2021	7 - 9		0.0046 U	0.0050 U	0.0034 U	0.0021 U	0.0034 U	0.0042 U	0.0040 U	0.0050 U	0.0019 U	0.0050 U	0.0050 U
KKR-21-060	KKR-21-060-09-10-210820	8/20/2021	9 - 10		0.0050 U	0.0055 U	0.0038 U	0.0023 U	0.0037 U	0.0046 U	0.0044 U	0.0054 U	0.0021 U	0.0055 U	0.0055 U
KKR-21-061	KKR-21-061-00-01-210820	8/20/2021	0 - 1		0.0048 U	0.0052 U	0.0036 U	0.0022 U	**0.89**	0.0044 U	**0.21**	0.0052 U	0.0020 U	**1.1**	**1.1**
KKR-21-061	KKR-21-061-01-03-210820	8/20/2021	1 - 3		0.0054 U	0.0059 U	0.0041 U	0.0024 U	**1.2**	0.0050 U	**0.3**	0.0058 U	0.0022 U	**1.5**	**1.5**
KKR-21-061	KKR-21-061-03-05-210820	8/20/2021	3 - 5		0.0049 U	0.0054 U	0.0037 U	0.0022 U	**2.5**	0.0046 U	**0.39**	0.0053 U	0.0020 U	**2.9**	**2.9**
KKR-21-061	KKR-21-061-05-07-210820	8/20/2021	5 - 7		0.0050 U	0.0055 U	0.0038 U	0.0023 U	**1.5**	0.0046 U	**0.39**	0.0054 U	0.0021 U	**1.9**	**1.9**
KKR-21-061	KKR-21-061-07-09-210820	8/20/2021	7 - 9		0.0052 U	0.0057 U	0.0039 U	0.0024 U	**0.51**	0.0048 U	**0.2**	0.0057 U	0.0022 U	**0.71**	**0.72**
KKR-21-061	KKR-21-061-09-10-210820	8/20/2021	9 - 10		0.0052 U	0.0056 U	0.0039 U	0.0023 U	0.0038 U	**0.33**	0.0045 U	0.0056 U	0.0021 U	**0.33**	**0.35**
KKR-21-062	KKR-21-062-00-01-210820	8/20/2021	0 - 1		0.0044 U	0.0048 U	0.0033 U	0.0020 U	**0.6**	0.0041 U	**0.34**	0.0048 U	0.0018 U	**0.94**	**0.95**
KKR-21-062	KKR-21-062-01-03-210820	8/20/2021	1 - 3		0.0048 U	0.0052 U	0.0036 U	0.0022 U	**0.85**	0.0044 U	**0.46**	0.0052 U	0.0020 U	**1.3**	**1.3**
KKR-21-062	KKR-21-062-03-05-210820	8/20/2021	3 - 5		0.0040 U	0.0043 U	0.0030 U	0.0018 U	**0.065**	0.0036 U	**0.023**	0.0043 U	0.0016 U	**0.088**	**0.099**
KKR-21-062	KKR-21-062-05-07-210820	8/20/2021	5 - 7		0.0039 U	0.0043 U	0.0030 U	0.0018 U	**0.015**	0.0036 U	**0.0060 J**	0.0043 U	0.0016 U	**0.021 J**	**0.032 J**
KKR-21-062	KKR-21-062-07-7.4-210820	8/20/2021	7 - 7.4		0.0035 U	0.0038 U	0.0026 U	0.0016 U	**0.0081 J**	0.0032 U	0.0030 U	0.0038 U	0.0014 U	**0.0081 J**	**0.020 J**
Milwaukee Bay – Nearshore and McKinley Marina															
MKE-21-063	MKE-21-063-00-01-210818	8/18/2021	0 - 1		0.0064 U	0.0070 U	0.0048 U	0.0029 U	**0.16**	0.0059 U	**0.05**	0.0069 U	0.0027 U	**0.21**	**0.23**
MKE-21-063	MKE-21-063-01-2.3-210818	8/18/2021	1 - 2.3		0.0054 U	0.0059 U	0.0040 U	0.0024 U	**0.38**	0.0050 U	**0.061**	0.0058 U	0.0022 U	**0.44**	**0.46**
MKE-21-063	MKE-21-063-2.3-2.6-210818	8/18/2021	2.3 - 2.6		0.0038 U	0.0041 U	0.0028 U	0.0017 U	**0.066**	0.0035 U	**0.018**	0.0041 U	0.0016 U	**0.084**	**0.095**
MKE-21-063	MKE-21-063-2.6-4.6-210818	8/18/2021	2.6 - 4.6		0.0039 U	0.0043 U	0.0029 U	0.0018 U	0.0029 U	0.0036 U	0.0034 U	0.0042 U	0.0016 U	0.0043 U	0.0043 U
MKE-21-063	FD-202108181355	8/18/2021	2.6 - 4.6		0.0041 U	0.0045 U	0.0031 U	0.0019 U	0.0030 U	0.0038 U	0.0036 U	0.0045 U	0.0017 U	0.0045 U	0.0045 U
MKE-21-063	MKE-21-063-4.6-6.6-210818	8/18/2021	4.6 - 6.6		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0024 U	0.0030 U	0.0029 U	0.0036 U	0.0014 U	0.0036 U	0.0036 U
MKE-21-063	*MKE-21-063-6.6-7.2-210818*	8/18/2021	6.6 - 7.2		0.0032 U	0.0035 U	0.0024 U	0.0014 U	0.0024 U	0.0029 U	0.0028 U	0.0035 U	0.0013 U	0.0035 U	0.0035 U
MKE-21-064	MKE-21-064-00-01-210818	8/18/2021	0 - 1		0.0052 U	0.0057 U	0.0039 U	0.0023 U	**0.29**	**0.11**	**0.056**	0.0056 U	0.0022 U	**0.46**	**0.47**
MKE-21-064	MKE-21-064-01-03-210818	8/18/2021	1 - 3		0.0052 U	0.0056 U	0.0039 U	0.0023 U	**0.24**	**0.12**	**0.053**	0.0056 U	0.0021 U	**0.41**	**0.43**
MKE-21-064	MKE-21-064-03-05-210818	8/18/2021	3 - 5		0.0046 U	0.0050 U	0.0035 U	0.0021 U	0.0034 U	0.0043 U	0.0040 U	0.0050 U	0.0019 U	0.0050 U	0.0050 U
MKE-21-064	MKE-21-064-05-6.4-210818	8/18/2021	5 - 6.4		0.0040 U	0.0044 U	0.0030 U	0.0018 U	0.0030 U	0.0037 U	0.0035 U	0.0043 U	0.0017 U	0.0044 U	0.0044 U
MKE-21-065	MKE-21-065-00-01-210818	8/18/2021	0 - 1		0.0040 U	0.0043 U	0.0030 U	0.0018 U	**0.045**	0.0037 U	**0.0068 J**	0.0043 U	0.0016 U	**0.052 J**	**0.063 J**
MKE-21-065	MKE-21-065-01-03-210818	8/18/2021	1 - 3		0.0034 U	0.0038 U	0.0026 U	0.0016 U	0.0025 U	0.0032 U	0.0030 U	0.0037 U	0.0014 U	0.0038 U	0.0038 U
MKE-21-065	MKE-21-065-03-05-210818	8/18/2021	3 - 5		0.0032 U	0.0035 U	0.0024 U	0.0014 U	0.0023 U	0.0029 U	0.0028 U	0.0034 U	0.0013 U	0.0035 U	0.0035 U
MKE-21-065	*MKE-21-065-05-07-210818*	8/18/2021	5 - 7		0.0053 U	0.0058 U	0.0040 U	0.0024 U	0.0039 U	0.0049 U	0.0047 U	0.0058 U	0.0022 U	0.0058 U	0.0058 U

Table 5-5
Analytical Results for PCB Aroclors

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	Aroclor 1016 (mg/kg) 12674-11-2 1 5 50	Aroclor 1221 (mg/kg) 11104-28-2 1 5 50	Aroclor 1232 (mg/kg) 11141-16-5 1 5 50	Aroclor 1242 (mg/kg) 53469-21-9 1 5 50	Aroclor 1248 (mg/kg) 12672-29-6 1 5 50	Aroclor 1254 (mg/kg) 11097-69-1 1 5 50	Aroclor 1260 (mg/kg) 11096-82-5 1 5 50	Aroclor 1262 (mg/kg) 37324-23-5 1 5 50	Aroclor 1268 (mg/kg) 11100-14-4 1 5 50	Total PCB Aroclors (U = 0) (mg/kg) -- 1 5 50	Total PCB Aroclors (U = 1/2 maximum limit) (mg/kg) -- 1 5 50
Milwaukee Bay – North and Summerfest Lagoon															
MKE-21-066	MKE-21-066-00-01-210819	8/19/2021	0 - 1		0.0059 U	0.0064 U	0.0044 U	0.0026 U	**0.059**	0.0054 U	**0.022**	0.0063 U	0.0024 U	**0.081**	**0.098**
MKE-21-066	MKE-21-066-01-03-210819	8/19/2021	1 - 3		0.0056 U	0.0061 U	0.0042 U	0.0025 U	**0.39**	0.0052 U	**0.093**	0.0061 U	0.0023 U	**0.48**	**0.5**
MKE-21-066	FD-202108190930	8/19/2021	1 - 3		0.0056 U	0.0061 U	0.0042 U	0.0025 U	**0.48**	0.0052 U	**0.11**	0.0061 U	0.0023 U	**0.59**	**0.61**
MKE-21-066	MKE-21-066-03-05-210819	8/19/2021	3 - 5		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.016**	0.0043 U	**0.01 J**	0.0051 U	0.0019 U	**0.026 J**	**0.039 J**
MKE-21-066	MKE-21-066-05-07-210819	8/19/2021	5 - 7		0.0046 U	0.0050 U	0.0034 U	0.0021 U	0.0034 U	0.0042 U	0.0040 U	0.0049 U	0.0019 U	0.0050 U	0.0050 U
MKE-21-066	MKE-21-066-07-8.2-210819	8/19/2021	7 - 8.2		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0024 U	0.0030 U	0.0029 U	0.0035 U	0.0014 U	0.0036 U	0.0036 U
MKE-21-066	FR-202108190945	8/19/2021	7 - 8.2		0.0032 U	0.0035 U	0.0024 U	0.0015 U	0.0024 U	0.0030 U	0.0028 U	0.0035 U	0.0013 U	0.0035 U	0.0035 U
MKE-21-066	*MKE-21-066-8.2-8.7-210819*	8/19/2021	8.2 - 8.7		0.0031 U	0.0033 U	0.0023 U	0.0014 U	0.0023 U	0.0028 U	0.0027 U	0.0033 U	0.0013 U	0.0033 U	0.0033 U
MKE-21-067	MKE-21-067-00-01-210818	8/18/2021	0 - 1		0.0067 U	0.0072 U	0.0050 U	0.0030 U	**0.17**	0.0061 U	**0.068**	0.0072 U	0.0027 U	**0.24**	**0.26**
MKE-21-067	MKE-21-067-01-03-210818	8/18/2021	1 - 3		0.0067 U	0.0073 U	0.0050 U	0.0030 U	**0.95**	0.0062 U	**0.19**	0.0073 U	0.0028 U	**1.1**	**1.2**
MKE-21-067	MKE-21-067-03-05-210818	8/18/2021	3 - 5		0.0066 U	0.0072 U	0.0050 U	0.0030 U	**0.079**	0.0061 U	**0.043**	0.0072 U	0.0027 U	**0.12**	**0.14**
MKE-21-067	MKE-21-067-05-7.5-210818	8/18/2021	5 - 7.5		0.0045 U	0.0049 U	0.0034 U	0.0020 U	0.0033 U	0.0042 U	0.0040 U	0.0049 U	0.0019 U	0.0049 U	0.0049 U
MKE-21-067	*MKE-21-067-7.7-9.7-210818*	8/18/2021	7.7 - 9.7		0.0032 U	0.0035 U	0.0024 U	0.0014 U	0.0024 U	0.0030 U	0.0028 U	0.0035 U	0.0013 U	0.0035 U	0.0035 U
MKE-21-068	MKE-21-068-00-01-210818	8/18/2021	0 - 1		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.085**	0.0043 U	**0.038**	0.0051 U	0.0019 U	**0.12**	**0.14**
MKE-21-068	MKE-21-068-01-03-210818	8/18/2021	1 - 3		0.0057 U	0.0062 U	0.0043 U	0.0026 U	**0.94 J**	0.0052 U	**0.16**	0.0061 U	0.0023 U	**1.1 J**	**1.1 J**
MKE-21-068	FD-202108180910	8/18/2021	1 - 3		0.0056 U	0.0060 U	0.0042 U	0.0025 U	**0.27 J**	0.0051 U	**0.058**	0.0060 U	0.0023 U	**0.33 J**	**0.34 J**
MKE-21-068	MKE-21-068-03-05-210818	8/18/2021	3 - 5		0.0052 U	0.0057 U	0.0039 U	0.0024 U	**0.022**	0.0048 U	0.0046 U	0.0057 U	0.0022 U	**0.022**	**0.039**
MKE-21-068	MKE-21-068-05-06-210818	8/18/2021	5 - 6		0.0051 U	0.0056 U	0.0038 U	0.0023 U	0.0038 U	0.0047 U	0.0045 U	0.0055 U	0.0021 U	0.0056 U	0.0056 U
MKE-21-068	*MKE-21-068-06-7.2-210818*	8/18/2021	6 - 7.2		0.0060 U	0.0065 U	0.0045 U	0.0027 U	0.0044 U	0.0055 U	0.0052 U	0.0065 U	0.0025 U	0.0065 U	0.0065 U
MKE-21-069	MKE-21-069-00-01-210817	8/17/2021	0 - 1		0.0051 U	0.0055 U	0.0038 U	0.0023 U	**0.61**	0.0047 U	**0.09**	0.0055 U	0.0021 U	**0.7**	**0.71**
MKE-21-069	MKE-21-069-01-03-210817	8/17/2021	1 - 3		0.0054 U	0.0059 U	0.0041 U	0.0024 U	**0.062**	0.0050 U	**0.016 J**	0.0059 U	0.0022 U	**0.078 J**	**0.093 J**
MKE-21-069	MKE-21-069-03-4.8-210817	8/17/2021	3 - 4.8		0.0046 U	0.0050 U	0.0035 U	0.0021 U	0.0034 U	0.0043 U	0.0041 U	0.0050 U	0.0019 U	0.0050 U	0.0050 U
MKE-21-069	MKE-21-069-4.8-5.6-210817	8/17/2021	4.8 - 5.6		0.0031 U	0.0034 U	0.0023 U	0.0014 U	**0.0094 J**	0.0028 U	0.0027 U	0.0033 U	0.0013 U	**0.0094 J**	**0.020 J**
MKE-21-069	*MKE-21-069-5.6-7.2-210817*	8/17/2021	5.6 - 7.2		0.0031 U	0.0033 U	0.0023 U	0.0014 U	0.0023 U	0.0028 U	0.0027 U	0.0033 U	0.0013 U	0.0033 U	0.0033 U
MKE-21-069	*FD-202108171320*	8/17/2021	5.6 - 7.2		0.0030 U	0.0033 U	0.0023 U	0.0014 U	0.0022 U	0.0028 U	0.0027 U	0.0033 U	0.0013 U	0.0033 U	0.0033 U
MKE-21-070	MKE-21-070-00-1.2-210819	8/19/2021	0 - 1.2		0.0037 U	0.0040 U	0.0027 U	0.0017 U	**0.045**	0.0034 U	**0.0088 J**	0.0040 U	0.0015 U	**0.054 J**	**0.064 J**
MKE-21-070	MKE-21-070-1.2-1.8-210819	8/19/2021	1.2 - 1.8		0.0034 U	0.0037 U	0.0025 U	0.0015 U	**0.04**	0.0031 U	**0.0088 J**	0.0036 U	0.0014 U	**0.049 J**	**0.058 J**
MKE-21-070	MKE-21-070-1.8-3.2-210819	8/19/2021	1.8 - 3.2		0.0045 U	0.0049 U	0.0034 U	0.0020 U	**0.063**	0.0041 U	**0.0098 J**	0.0048 U	0.0019 U	**0.073 J**	**0.086 J**
MKE-21-070	MKE-21-070-3.2-5.2-210819	8/19/2021	3.2 - 5.2		0.0046 U	0.0050 U	0.0035 U	0.0021 U	**0.42**	0.0043 U	**0.081**	0.0050 U	0.0019 U	**0.5**	**0.51**
MKE-21-070	MKE-21-070-5.2-6.2-210819	8/19/2021	5.2 - 6.2		0.0045 U	0.0049 U	0.0034 U	0.0020 U	**0.25**	0.0041 U	**0.076**	0.0049 U	0.0019 U	**0.33**	**0.34**
MKE-21-070	MKE-21-070-6.2-7.5-210819	8/19/2021	6.2 - 7.5		0.0036 U	0.0039 U	0.0027 U	0.0016 U	**0.031**	0.0033 U	**0.01 J**	0.0039 U	0.0015 U	**0.041 J**	**0.051 J**
MKE-21-070	*MKE-21-070-7.5-8.5-210819*	8/19/2021	7.5 - 8.5		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0024 U	0.0031 U	0.0029 U	0.0036 U	0.0014 U	0.0036 U	0.0036 U
MKE-21-071	MKE-21-071-00-01-210819	8/19/2021	0 - 1		0.0046 U	0.0050 U	0.0035 U	0.0021 U	**0.022**	0.0042 U	0.0040 U	0.0050 U	0.0019 U	**0.022**	**0.037**
MKE-21-071	MKE-21-071-01-03-210819	8/19/2021	1 - 3		0.0054 U	0.0059 U	0.0041 U	0.0024 U	**0.31**	0.0050 U	**0.066**	0.0059 U	0.0022 U	**0.38**	**0.39**
MKE-21-071	MKE-21-071-03-4.8-210819	8/19/2021	3 - 4.8		0.0030 U	0.0033 U	0.0023 U	0.0014 U	**0.024**	0.0028 U	0.0026 U	0.0033 U	0.0012 U	**0.024**	**0.034**
MKE-21-071	*MKE-21-071-4.8-5.5-210819*	8/19/2021	4.8 - 5.5		0.0034 U	0.0037 U	0.0026 U	0.0015 U	0.0025 U	0.0031 U	0.0030 U	0.0037 U	0.0014 U	0.0037 U	0.0037 U

Table 5-5
Analytical Results for PCB Aroclors

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	Aroclor 1016 (mg/kg) 12674-11-2 1 5 50	Aroclor 1221 (mg/kg) 11104-28-2 1 5 50	Aroclor 1232 (mg/kg) 11141-16-5 1 5 50	Aroclor 1242 (mg/kg) 53469-21-9 1 5 50	Aroclor 1248 (mg/kg) 12672-29-6 1 5 50	Aroclor 1254 (mg/kg) 11097-69-1 1 5 50	Aroclor 1260 (mg/kg) 11096-82-5 1 5 50	Aroclor 1262 (mg/kg) 37324-23-5 1 5 50	Aroclor 1268 (mg/kg) 11100-14-4 1 5 50	Total PCB Aroclors (U = 0) (mg/kg) -- 1 5 50	Total PCB Aroclors (U = 1/2 maximum limit) (mg/kg) -- 1 5 50
MKE-21-072	MKE-21-072-00-01-210819	8/19/2021	0 - 1		0.0039 U	0.0043 U	0.0029 U	0.0018 U	**0.046**	0.0036 U	**0.011 J**	0.0043 U	0.0016 U	**0.057 J**	**0.068 J**
MKE-21-072	MKE-21-072-01-03-210819	8/19/2021	1 - 3		0.0051 U	0.0056 U	0.0039 U	0.0023 U	**0.25**	0.0047 U	**0.056**	0.0056 U	0.0021 U	**0.31**	**0.32**
MKE-21-072	FD-202108191215	8/19/2021	1 - 3		0.0050 U	0.0055 U	0.0038 U	0.0023 U	**0.28**	0.0046 U	**0.055**	0.0054 U	0.0021 U	**0.34**	**0.35**
MKE-21-072	MKE-21-072-03-3.5-210819	8/19/2021	3 - 3.5		0.0034 U	0.0037 U	0.0025 U	0.0015 U	**0.77**	0.0031 U	**0.1**	0.0037 U	0.0014 U	**0.87**	**0.88**
MKE-21-072	*MKE-21-072-3.5-4.4-210819*	8/19/2021	3.5 - 4.4		0.0033 U	0.0036 U	0.0025 U	0.0015 U	**0.061**	0.0031 U	**0.0095 J**	0.0036 U	0.0014 U	**0.070 J**	**0.080 J**
MKE-21-073	MKE-21-073-00-01-210809	8/9/2021	0 - 1		0.0062 U	0.0067 U	0.0046 U	0.0028 U	**0.031**	0.0057 U	0.0054 U	0.0067 U	0.0026 U	**0.031**	**0.051**
MKE-21-073	MKE-21-073-01-03-210809	8/9/2021	1 - 3		0.0061 U	0.0066 U	0.0045 U	0.0027 U	**1.8**	0.0056 U	**0.16**	0.0065 U	0.0025 U	**2**	**2**
MKE-21-073	MKE-21-073-03-5.1-210809	8/9/2021	3 - 5.1		0.0053 U	0.0058 U	0.0040 U	0.0024 U	**0.12**	0.0049 U	**0.018**	0.0058 U	0.0022 U	**0.14**	**0.15**
MKE-21-074	MKE-21-074-00-01-210809	8/9/2021	0 - 1		0.0053 U	0.0058 U	0.0040 U	0.0024 U	**0.098**	0.0049 U	0.0046 U	0.0057 U	0.0022 U	**0.098**	**0.12**
MKE-21-074	MKE-21-074-01-2.7-210809	8/9/2021	1 - 2.7		0.0049 U	0.0053 U	0.0037 U	0.0022 U	**0.23**	0.0045 U	**0.034**	0.0053 U	0.0020 U	**0.26**	**0.28**
MKE-21-074	MKE-21-074-2.7-4.3-210809	8/9/2021	2.7 - 4.3		0.0032 U	0.0035 U	0.0024 U	0.0015 U	**0.0094 J**	0.0030 U	0.0028 U	0.0035 U	0.0013 U	**0.0094 J**	**0.020 J**
MKE-21-075	MKE-21-075-00-01-210809	8/9/2021	0 - 1		0.0064 U	0.0069 U	0.0048 U	0.0029 U	**0.016 J**	0.0059 U	0.0056 U	0.0069 U	0.0026 U	**0.016 J**	**0.037 J**
MKE-21-075	MKE-21-075-01-03-210809	8/9/2021	1 - 3		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.13**	0.0043 U	0.0041 U	0.0051 U	0.0019 U	**0.13**	**0.15**
MKE-21-075	MKE-21-075-03-05-210809	8/9/2021	3 - 5		0.0033 U	0.0036 U	0.0024 U	0.0015 U	**0.083**	0.0030 U	0.0029 U	0.0035 U	0.0014 U	**0.083**	**0.094**
Milwaukee Bay – South Adjacent to the Port Milwaukee															
MKE-21-076	MKE-21-076-00-01-210817	8/17/2021	0 - 1		0.0050 U	0.0055 U	0.0038 U	0.0023 U	**0.33**	0.0046 U	**0.052**	0.0054 U	0.0021 U	**0.38**	**0.4**
MKE-21-076	FD-202108170815	8/17/2021	0 - 1		0.0047 U	0.0052 U	0.0036 U	0.0021 U	**0.45**	0.0044 U	**0.068**	0.0051 U	0.0020 U	**0.52**	**0.53**
MKE-21-076	MKE-21-076-01-2.3-210817	8/17/2021	1 - 2.3		0.0043 U	0.0047 U	0.0032 U	**0.28**	0.0032 U	0.0039 U	**0.039**	0.0046 U	0.0018 U	**0.32**	**0.33**
MKE-21-076	MKE-21-076-2.3-3.3-210817	8/17/2021	2.3 - 3.3		0.0031 U	0.0034 U	0.0024 U	0.0014 U	**0.051**	0.0029 U	**0.012**	0.0034 U	0.0013 U	**0.063**	**0.072**
MKE-21-076	MKE-21-076-3.3-4.4-210817	8/17/2021	3.3 - 4.4		0.0033 U	0.0036 U	0.0025 U	0.0015 U	0.0025 U	0.0031 U	0.0029 U	0.0036 U	0.0014 U	0.0036 U	0.0036 U
MKE-21-076	FR-202108170830	8/17/2021	3.3 - 4.4		0.0034 U	0.0037 U	0.0025 U	0.0015 U	0.0025 U	0.0031 U	0.0030 U	0.0037 U	0.0014 U	0.0037 U	0.0037 U
MKE-21-077	MKE-21-077-00-01-210817	8/17/2021	0 - 1		0.0053 U	0.0058 U	0.0040 U	0.0024 U	**0.59**	0.0049 U	**0.12**	0.0057 U	0.0022 U	**0.71**	**0.73**
MKE-21-077	MKE-21-077-01-03-210817	8/17/2021	1 - 3		0.0035 U	0.0038 U	0.0026 U	0.0016 U	**0.17**	0.0032 U	**0.031**	0.0038 U	0.0014 U	**0.2**	**0.21**
MKE-21-077	MKE-21-077-03-05-210817	8/17/2021	3 - 5		0.0032 U	0.0035 U	0.0024 U	0.0014 U	0.0024 U	0.0030 U	0.0028 U	0.0035 U	0.0013 U	0.0035 U	0.0035 U
MKE-21-077	MKE-21-077-05-07-210817	8/17/2021	5 - 7		0.0039 U	0.0042 U	0.0029 U	0.0018 U	0.0029 U	0.0036 U	0.0034 U	0.0042 U	0.0016 U	0.0042 U	0.0042 U
MKE-21-077	MKE-21-077-07-09-210817	8/17/2021	7 - 9		0.0038 U	0.0041 U	0.0028 U	0.0017 U	0.0028 U	0.0035 U	0.0033 U	0.0041 U	0.0016 U	0.0041 U	0.0041 U
MKE-21-077	MKE-21-077-09-11-210817	8/17/2021	9 - 11		0.0042 U	0.0046 U	0.0032 U	0.0019 U	0.0031 U	0.0039 U	0.0037 U	0.0046 U	0.0017 U	0.0046 U	0.0046 U
MKE-21-077	MKE-21-077-11-13-210817	8/17/2021	11 - 13		0.0039 U	0.0042 U	0.0029 U	0.0017 U	0.0029 U	0.0036 U	0.0034 U	0.0042 U	0.0016 U	0.0042 U	0.0042 U
MKE-21-077	MKE-21-077-13-14.2-210817	8/17/2021	13 - 14.2		0.0037 U	0.0040 U	0.0027 U	0.0016 U	0.0027 U	0.0034 U	0.0032 U	0.0040 U	0.0015 U	0.0040 U	0.0040 U
MKE-21-078	MKE-21-078-00-01-210817	8/17/2021	0 - 1		0.0049 U	0.0053 U	0.0037 U	0.0022 U	**0.44**	0.0045 U	**0.07**	0.0053 U	0.0020 U	**0.51**	**0.52**
MKE-21-078	MKE-21-078-01-03-210817	8/17/2021	1 - 3		0.0054 U	0.0059 U	0.0040 U	0.0024 U	**0.05**	0.0050 U	**0.012 J**	0.0058 U	0.0022 U	**0.062 J**	**0.077 J**
MKE-21-078	MKE-21-078-03-05-210817	8/17/2021	3 - 5		0.0053 U	0.0058 U	0.0040 U	0.0024 U	**0.033**	0.0049 U	**0.0088 J**	0.0057 U	0.0022 U	**0.042 J**	**0.057 J**
MKE-21-078	FD-202108171430	8/17/2021	3 - 5		0.0054 U	0.0059 U	0.0040 U	0.0024 U	0.0040 U	**0.0069 J**	0.0047 U	0.0058 U	0.0022 U	**0.0069 J**	**0.024 J**
MKE-21-078	MKE-21-078-05-07-210817	8/17/2021	5 - 7		0.0036 U	0.0040 U	0.0027 U	0.0016 U	0.0027 U	0.0034 U	0.0032 U	0.0039 U	0.0015 U	0.0040 U	0.0040 U
MKE-21-078	MKE-21-078-07-8.7-210817	8/17/2021	7 - 8.7		0.0032 U	0.0035 U	0.0024 U	0.0014 U	0.0024 U	0.0030 U	0.0028 U	0.0035 U	0.0013 U	0.0035 U	0.0035 U
MKE-21-078	MKE-21-078-8.7-10.7-210817	8/17/2021	8.7 - 10.7		0.0031 U	0.0034 U	0.0023 U	0.0014 U	0.0023 U	0.0029 U	0.0027 U	0.0034 U	0.0013 U	0.0034 U	0.0034 U
MKE-21-078	MKE-21-078-10.7-12.7-210817	8/17/2021	10.7 - 12.7		0.0031 U	0.0034 U	0.0023 U	0.0014 U	0.0023 U	0.0029 U	0.0027 U	0.0034 U	0.0013 U	0.0034 U	0.0034 U
MKE-21-078	MKE-21-078-12.7-14.7-210817	8/17/2021	12.7 - 14.7		0.0032 U	0.0034 U	0.0024 U	0.0014 U	0.0023 U	0.0029 U	0.0028 U	0.0034 U	0.0013 U	0.0034 U	0.0034 U
MKE-21-078	MKE-21-078-14.7-15.7-210817	8/17/2021	14.7 - 15.7		0.0030 U	0.0033 U	0.0022 U	0.0014 U	0.0022 U	0.0028 U	0.0026 U	0.0032 U	0.0012 U	0.0033 U	0.0033 U

Table 5-5
Analytical Results for PCB Aroclors

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	Aroclor 1016 (mg/kg) 12674-11-2 1 5 50	Aroclor 1221 (mg/kg) 11104-28-2 1 5 50	Aroclor 1232 (mg/kg) 11141-16-5 1 5 50	Aroclor 1242 (mg/kg) 53469-21-9 1 5 50	Aroclor 1248 (mg/kg) 12672-29-6 1 5 50	Aroclor 1254 (mg/kg) 11097-69-1 1 5 50	Aroclor 1260 (mg/kg) 11096-82-5 1 5 50	Aroclor 1262 (mg/kg) 37324-23-5 1 5 50	Aroclor 1268 (mg/kg) 11100-14-4 1 5 50	Total PCB Aroclors (U = 0) (mg/kg) -- 1 5 50	Total PCB Aroclors (U = 1/2 maximum limit) (mg/kg) -- 1 5 50
South Menomonee Canal – East															
SMC-21-001	SMC-21-001-00-01-210821	8/21/2021	0 - 1		0.0085 U	0.0092 U	0.0064 U	0.0038 U	**0.082**	0.0078 U	**0.053**	0.0092 U	0.0035 U	**0.14**	**0.16**
SMC-21-001	SMC-21-001-01-2.5-210821	8/21/2021	1 - 2.5		0.0067 U	0.0073 U	0.0050 U	0.0030 U	**0.15**	0.0062 U	**0.1**	0.0072 U	0.0028 U	**0.25**	**0.27**
SMC-21-001	FD-202108210755	8/21/2021	1 - 2.5		0.0068 U	0.0074 U	0.0051 U	0.0031 U	**0.24**	0.0063 U	**0.17**	0.0073 U	0.0028 U	**0.41**	**0.43**
SMC-21-001	SMC-21-001-2.5-04-210821	8/21/2021	2.5 - 4		0.0058 U	0.0063 U	0.0043 U	0.0026 U	**0.48**	0.0053 U	**0.12**	0.0063 U	0.0024 U	**0.6**	**0.62**
SMC-21-001	SMC-21-001-04-06-210821	8/21/2021	4 - 6		0.0052 U	0.0057 U	0.0039 U	0.0023 U	**0.41**	0.0048 U	**0.093**	0.0056 U	0.0022 U	**0.5**	**0.52**
SMC-21-001	SMC-21-001-06-08-210821	8/21/2021	6 - 8		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.13**	0.0043 U	**0.052**	0.0051 U	0.0019 U	**0.18**	**0.2**
SMC-21-001	SMC-21-001-08-8.3-210821	8/21/2021	8 - 8.3		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.12**	0.0043 U	**0.054**	0.0051 U	0.0019 U	**0.17**	**0.19**
SMC-21-002	SMC-21-002-00-01-210821	8/21/2021	0 - 1		0.0083 U	0.0091 U	0.0062 U	0.0037 U	**0.057**	0.0077 U	**0.028**	0.0090 U	0.0034 U	**0.085**	**0.11**
SMC-21-002	SMC-21-002-01-2.5-210821	8/21/2021	1 - 2.5		0.0051 U	0.0055 U	0.0038 U	0.0023 U	**0.082**	0.0047 U	**0.019**	0.0055 U	0.0021 U	**0.1**	**0.12**
SMC-21-002	FD-202108211055	8/21/2021	1 - 2.5		0.0048 U	0.0053 U	0.0036 U	0.0022 U	**0.063**	0.0045 U	**0.013 J**	0.0052 U	0.0020 U	**0.076 J**	**0.090 J**
SMC-21-002	SMC-21-002-2.5-04-210821	8/21/2021	2.5 - 4		0.0035 U	0.0038 U	0.0026 U	0.0016 U	**0.15**	0.0032 U	**0.031**	0.0038 U	0.0015 U	**0.18**	**0.19**
SMC-21-002	SMC-21-002-04-4.9-210821	8/21/2021	4 - 4.9		0.0037 U	0.0040 U	0.0028 U	0.0017 U	**2.2**	0.0034 U	**0.19**	0.0040 U	0.0015 U	**2.4**	**2.4**
SMC-21-003	SMC-21-003-00-01-210821	8/21/2021	0 - 1		0.0082 U	0.0089 U	0.0061 U	0.0037 U	**0.052**	0.0076 U	**0.04**	0.0089 U	0.0034 U	**0.092**	**0.12**
SMC-21-003	SMC-21-003-01-2.5-210821	8/21/2021	1 - 2.5		0.0078 U	0.0085 U	0.0059 U	0.0035 U	**0.083**	0.0072 U	**0.045**	0.0085 U	0.0032 U	**0.13**	**0.15**
SMC-21-003	SMC-21-003-2.5-04-210821	8/21/2021	2.5 - 4		0.0058 U	0.0063 U	0.0043 U	0.0026 U	**0.29**	0.0053 U	**0.15**	0.0062 U	0.0024 U	**0.44**	**0.46**
SMC-21-003	SMC-21-003-04-5.1-210821	8/21/2021	4 - 5.1		0.0052 U	0.0057 U	0.0039 U	0.0024 U	**0.35**	0.0048 U	**0.092**	0.0057 U	0.0022 U	**0.44**	**0.46**
SMC-21-003	SMC-21-003-5.1-7.1-210821	8/21/2021	5.1 - 7.1		0.0046 U	0.0051 U	0.0035 U	0.0021 U	0.0034 U	0.0043 U	0.0041 U	0.0050 U	0.0019 U	0.0051 U	0.0051 U
SMC-21-003	SMC-21-003-7.1-9.1-210821	8/21/2021	7.1 - 9.1		0.0048 U	0.0052 U	0.0036 U	0.0022 U	0.0036 U	0.0044 U	0.0042 U	0.0052 U	0.0020 U	0.0052 U	0.0052 U
SMC-21-003	SMC-21-003-9.1-9.4-210821	8/21/2021	9.1 - 9.4		0.0052 U	0.0057 U	0.0039 U	0.0024 U	0.0039 U	0.0048 U	0.0046 U	0.0057 U	0.0022 U	0.0057 U	0.0057 U
SMC-21-004	SMC-21-004-00-01-210821	8/21/2021	0 - 1		0.0047 U	0.0052 U	0.0036 U	0.0021 U	0.0035 U	0.0044 U	0.0042 U	0.0051 U	0.0020 U	0.0052 U	0.0052 U
SMC-21-004	SMC-21-004-01-2.5-210821	8/21/2021	1 - 2.5		0.0050 U	0.0054 U	0.0037 U	0.0022 U	**0.084**	0.0046 U	**0.023**	0.0054 U	0.0020 U	**0.11**	**0.12**
SMC-21-004	SMC-21-004-2.5-04-210821	8/21/2021	2.5 - 4		0.0052 U	0.0057 U	0.0039 U	0.0024 U	**0.045**	0.0048 U	**0.013 J**	0.0056 U	0.0022 U	**0.058 J**	**0.073 J**
SMC-21-004	SMC-21-004-04-06-210821	8/21/2021	4 - 6		0.0053 U	0.0058 U	0.0040 U	0.0024 U	**0.21**	0.0049 U	**0.042**	0.0057 U	0.0022 U	**0.25**	**0.27**
SMC-21-004	SMC-21-004-06-08-210821	8/21/2021	6 - 8		0.0046 U	0.0050 U	0.0035 U	0.0021 U	**0.06**	0.0043 U	**0.019**	0.0050 U	0.0019 U	**0.079**	**0.092**
SMC-21-004	SMC-21-004-08-8.8-210821	8/21/2021	8 - 8.8		0.0046 U	0.0050 U	0.0035 U	0.0021 U	0.0034 U	0.0043 U	0.0041 U	0.0050 U	0.0019 U	0.0050 U	0.0050 U
South Menomonee Canal – Middle															
SMC-21-005	SMC-21-005-00-01-210820	8/20/2021	0 - 1		0.0066 U	0.0072 U	0.0050 U	0.0030 U	0.0049 U	0.0061 U	**0.24**	0.0072 U	0.0027 U	**0.24**	**0.26**
SMC-21-005	SMC-21-005-01-2.5-210820	8/20/2021	1 - 2.5		0.0051 U	0.0056 UJ	0.0038 UJ	0.0023 UJ	**0.36 J**	0.0047 UJ	**0.073 J**	0.0055 UJ	0.0021 UJ	**0.43 J**	**0.45 J**
SMC-21-005	SMC-21-005-2.5-04-210820	8/20/2021	2.5 - 4		0.0050 U	0.0055 UJ	0.0038 UJ	0.0023 UJ	**0.85 J**	0.0046 UJ	**0.11 J**	0.0054 UJ	0.0021 UJ	**0.96 J**	**0.97 J**
SMC-21-005	SMC-21-005-04-06-210820	8/20/2021	4 - 6		0.0049 U	0.0053 UJ	0.0036 UJ	0.0022 UJ	**0.46 J**	0.0045 UJ	**0.13 J**	0.0053 UJ	0.0020 UJ	**0.59 J**	**0.60 J**
SMC-21-005	SMC-21-005-06-6.7-210820	8/20/2021	6 - 6.7		0.0052 U	0.0057 UJ	0.0039 UJ	0.0024 UJ	**0.033 J**	0.0048 UJ	**0.014 J**	0.0056 UJ	0.0022 UJ	**0.047 J**	**0.062 J**
SMC-21-005	*SMC-21-005-6.7-8.7-210820*	8/20/2021	6.7 - 8.7		0.0047 U	0.0051 UJ	0.0035 UJ	0.0021 UJ	0.0035 UJ	0.0044 UJ	0.0041 UJ	0.0051 UJ	0.0020 UJ	0.0051 UJ	0.0051 UJ
SMC-21-005	*SMC-21-005-8.7-10.7-210820*	8/20/2021	8.7 - 10.7		0.0045 U	0.0049 UJ	0.0034 UJ	0.0020 UJ	0.0033 UJ	0.0042 UJ	0.0039 UJ	0.0049 UJ	0.0019 UJ	0.0049 UJ	0.0049 UJ
SMC-21-005	*SMC-21-005-10.7-12.7-210820*	8/20/2021	10.7 - 12.7		0.0042 U	0.0046 UJ	0.0031 UJ	0.0019 UJ	0.0031 UJ	0.0039 UJ	0.0037 UJ	0.0045 UJ	0.0017 UJ	0.0046 UJ	0.0046 UJ
SMC-21-005	*FR-202108201505*	8/20/2021	10.7 - 12.7		0.0042 U	0.0045 U	0.0031 U	0.0019 U	0.0031 U	0.0038 U	0.0036 U	0.0045 U	0.0017 U	0.0045 U	0.0045 U
SMC-21-006	*SMC-21-006-0.1-01-210821*	8/21/2021	0.1 - 1		0.0061 U	0.0066 UJ	0.0045 UJ	0.0027 UJ	**0.022 J**	0.0056 UJ	**0.01 J**	0.0065 UJ	0.0025 UJ	**0.032 J**	**0.049 J**

Table 5-5
Analytical Results for PCB Aroclors

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	Aroclor 1016 (mg/kg) 12674-11-2 1 5 50	Aroclor 1221 (mg/kg) 11104-28-2 1 5 50	Aroclor 1232 (mg/kg) 11141-16-5 1 5 50	Aroclor 1242 (mg/kg) 53469-21-9 1 5 50	Aroclor 1248 (mg/kg) 12672-29-6 1 5 50	Aroclor 1254 (mg/kg) 11097-69-1 1 5 50	Aroclor 1260 (mg/kg) 11096-82-5 1 5 50	Aroclor 1262 (mg/kg) 37324-23-5 1 5 50	Aroclor 1268 (mg/kg) 11100-14-4 1 5 50	Total PCB Aroclors (U = 0) (mg/kg) -- 1 5 50	Total PCB Aroclors (U = 1/2 maximum limit) (mg/kg) -- 1 5 50
SMC-21-006	SMC-21-006-01-2.5-210821	8/21/2021	1 - 2.5		0.0068 U	0.0074 UJ	0.0051 UJ	0.0031 UJ	0.0050 UJ	0.0063 UJ	0.0059 UJ	0.0074 UJ	0.0028 UJ	0.0074 UJ	0.0074 UJ
SMC-21-006	SMC-21-006-03-04-210821	8/21/2021	3 - 4		0.0032 U	0.0035 UJ	0.0024 UJ	0.0014 UJ	0.0024 UJ	0.0030 UJ	0.0028 UJ	0.0035 UJ	0.0013 UJ	0.0035 UJ	0.0035 UJ
SMC-21-006	SMC-21-006-04-06-210821	8/21/2021	4 - 6		0.0032 U	0.0034 UJ	0.0024 UJ	0.0014 UJ	0.0023 UJ	0.0029 UJ	0.0028 UJ	0.0034 UJ	0.0013 UJ	0.0034 UJ	0.0034 UJ
SMC-21-006	SMC-21-006-06-08-210821	8/21/2021	6 - 8		0.0032 U	0.0034 UJ	0.0024 UJ	0.0014 UJ	0.0023 UJ	0.0029 UJ	0.0028 UJ	0.0034 UJ	0.0013 UJ	0.0034 UJ	0.0034 UJ
SMC-21-006	SMC-21-006-08-10-210821	8/21/2021	8 - 10		0.0031 U	0.0033 UJ	0.0023 UJ	0.0014 UJ	0.0023 UJ	0.0028 UJ	0.0027 UJ	0.0033 UJ	0.0013 UJ	0.0033 UJ	0.0033 UJ
SMC-21-006	SMC-21-006-10-12-210821	8/21/2021	10 - 12		0.0031 U	0.0034 UJ	0.0023 UJ	0.0014 UJ	0.0023 UJ	0.0029 UJ	0.0027 UJ	0.0034 UJ	0.0013 UJ	0.0034 UJ	0.0034 UJ
SMC-21-006	SMC-21-006-12-12.8-210821	8/21/2021	12 - 12.8		0.0032 U	0.0035 UJ	0.0024 UJ	0.0014 UJ	0.0024 UJ	0.0030 UJ	0.0028 UJ	0.0035 UJ	0.0013 UJ	0.0035 UJ	0.0035 UJ
SMC-21-007	SMC-21-007-00-01-210821	8/21/2021	0 - 1		0.0049 U	0.0054 UJ	0.0037 UJ	0.0022 UJ	0.0036 UJ	0.0046 UJ	0.0043 UJ	0.0053 UJ	0.0020 UJ	0.0054 UJ	0.0054 UJ
SMC-21-007	SMC-21-007-01-2.5-210821	8/21/2021	1 - 2.5		0.0050 U	0.0054 UJ	0.0037 UJ	0.0022 UJ	0.0037 UJ	0.0046 UJ	0.0043 UJ	0.0054 UJ	0.0020 UJ	0.0054 UJ	0.0054 UJ
SMC-21-007	FD-202108211310	8/21/2021	1 - 2.5		0.0050 U	0.0054 UJ	0.0037 UJ	0.0022 UJ	0.0037 UJ	0.0046 UJ	0.0043 UJ	0.0054 UJ	0.0020 UJ	0.0054 UJ	0.0054 UJ
SMC-21-007	SMC-21-007-2.5-04-210821	8/21/2021	2.5 - 4		0.0047 U	0.0051 U	0.0035 U	0.0021 U	0.0034 U	0.0043 U	0.0041 U	0.0050 U	0.0019 U	0.0051 U	0.0051 U
SMC-21-007	SMC-21-007-04-06-210821	8/21/2021	4 - 6		0.0039 U	0.0043 U	0.0029 U	0.0018 U	0.0029 U	0.0036 U	0.0034 U	0.0042 U	0.0016 U	0.0043 U	0.0043 U
SMC-21-007	SMC-21-007-06-7.8-210821	8/21/2021	6 - 7.8		0.0036 U	0.0039 UJ	0.0027 UJ	0.0016 UJ	0.0027 UJ	0.0033 UJ	0.0031 UJ	0.0039 UJ	0.0015 UJ	0.0039 UJ	0.0039 UJ
South Menomonee Canal – West															
SMC-21-008	*SMC-21-008-01-1.5-210821*	8/21/2021	1 - 1.5		0.0035 U	0.0038 U	0.0026 U	0.0016 U	**0.35**	0.0032 U	**0.18**	0.0038 U	0.0014 U	**0.53**	**0.54**
SMC-21-008	*SMC-21-008-1.5-2.5-210821*	8/21/2021	1.5 - 2.5		0.0048 U	0.0052 U	0.0036 U	0.0021 U	**0.014 J**	0.0044 U	**0.0080 J**	0.0051 U	0.0020 U	**0.022 J**	**0.036 J**
SMC-21-008	*SMC-21-008-2.5-04-210821*	8/21/2021	2.5 - 4		0.0046 U	0.0051 U	0.0035 U	0.0021 U	**0.014**	0.0043 U	0.0041 U	0.0050 U	0.0019 U	**0.014**	**0.029**
SMC-21-008	*SMC-21-008-04-06-210821*	8/21/2021	4 - 6		0.0044 U	0.0048 U	0.0033 U	0.0020 U	0.0032 U	0.0040 U	0.0038 U	0.0047 U	0.0018 U	0.0048 U	0.0048 U
SMC-21-008	*SMC-21-008-06-08-210821*	8/21/2021	6 - 8		0.0042 U	0.0046 U	0.0032 U	0.0019 U	0.0031 U	0.0039 U	0.0037 U	0.0046 U	0.0017 U	0.0046 U	0.0046 U
SMC-21-008	*SMC-21-008-08-10-210821*	8/21/2021	8 - 10		0.0041 U	0.0045 U	0.0031 U	0.0019 U	0.0031 U	0.0038 U	0.0036 U	0.0045 U	0.0017 U	0.0045 U	0.0045 U
SMC-21-008	*SMC-21-008-10-10.6-210821*	8/21/2021	10 - 10.6		0.0032 U	0.0035 U	0.0024 U	0.0014 U	0.0024 U	0.0029 U	0.0028 U	0.0035 U	0.0013 U	0.0035 U	0.0035 U
SMC-21-008	*SMC-21-008-10.6-12.6-210821*	8/21/2021	10.6 - 12.6		0.0032 U	0.0035 U	0.0024 U	0.0014 U	0.0023 U	0.0029 U	0.0028 U	0.0034 U	0.0013 U	0.0035 U	0.0035 U
SMC-21-008	*SMC-21-008-12.6-13.6-210821*	8/21/2021	12.6 - 13.6		0.0032 U	0.0034 U	0.0024 U	0.0014 U	**0.0056 J**	0.0029 U	0.0028 U	0.0034 U	0.0013 U	**0.0056 J**	**0.016 J**
South Menomonee Canal – Entrance to Burnham Canal															
SMC-21-010	SMC-21-010-00-01-210811	8/11/2021	0 - 1		0.0069 U	0.0076 U	0.0052 U	0.0031 U	**0.063**	0.0064 U	**0.028**	0.0075 U	0.0029 U	**0.091**	**0.11**
SMC-21-010	SMC-21-010-01-1.6-210811	8/11/2021	1 - 1.6		0.0047 U	0.0051 U	0.0035 U	0.0021 U	**0.11**	0.0043 U	**0.031**	0.0051 U	0.0019 U	**0.14**	**0.15**
SMC-21-011	SMC-21-011-00-01-210811	8/11/2021	0 - 1		0.0035 U	0.0038 U	0.0026 U	0.0016 U	0.0026 U	0.0032 U	**0.0065 J**	0.0038 U	0.0014 U	**0.0065 J**	**0.018 J**
SMC-21-011	SMC-21-011-01-02-210811	8/11/2021	1 - 2		0.0034 U	0.0037 U	0.0026 U	0.0016 U	0.0025 U	0.0032 U	0.0030 U	0.0037 U	0.0014 U	0.0037 U	0.0037 U

Table 5-5
Analytical Results for PCB Aroclors

Notes:
1. Validated results were screened against the 1 mg/kg, 5 mg/kg, and 50 mg/kg as provided by DNR.
2. Total PCBs are the sum of Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1248, Aroclor 1254, Aroclor 1260, Aroclor 1262, and Aroclor 1268.
3. Total PCBs were calculated by summing the result values, with non-detects treated as zero values (U=0) or non-detect values treated as one-half of the detection limit (U=1/2 maximum limit). If all results were below detection, the highest detection limit was reported with a U-qualifier to indicate the total is below detection. Non-detect values treated as one-half the detection limit tend to produce results that are biased high.
4. Sample intervals defined as native material based on visual observations are shown in italics.

Screening Criteria:
Detected concentration is greater than 1 mg/kg
Detected concentration is greater than 5 mg/kg
Detected concentration is greater than 50 mg/kg
Bold: detected result

Abbreviations:
CAS: Chemical Abstracts System
DNR: Wisconsin Department of Natural Resources
FD: field duplicate sample
FR: field replicate sample
ft bss: feet below sediment surface
J: indicates an estimated value
J-: indicates an estimated value with a potentially low bias
J+: indicates an estimated value with a potentially high bias
mg/kg: milligrams per kilogram
PCB: polychlorinated biphenyl
PEC: probable effects concentration
QAPP: Quality Assurance Project Plan
U: indicates the compound analyzed for but not detected above detection limit
UJ: indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	PCB-001 (ng/kg) -- -- --	PCB-002 (ng/kg) -- -- --	PCB-003 (ng/kg) -- -- --	PCB-004 (ng/kg) -- -- --	PCB-005 (ng/kg) -- -- --	PCB-006 (ng/kg) -- -- --	PCB-007 (ng/kg) -- -- --	PCB-008 (ng/kg) -- -- --	PCB-009 (ng/kg) -- -- --	PCB-010 (ng/kg) -- -- --	PCB-011 (ng/kg) -- -- --	PCB-012/013 (ng/kg) -- -- --	PCB-014 (ng/kg) -- -- --	PCB-015 (ng/kg) -- -- --
Upstream Kinnickinnic River																		
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		940 U	1000 U	**1700 J**	2400 U	1700 U	1700 U	1600 U	**8100 J**	1900 U	1900 U	**6400 J**	1600 U	1500 U	**4700 J**
Kinnickinnic River – Reach 1																		
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**85000**	**35000**	**57000**	**1800000**	**94000**	**4400000**	**130000**	**4600000**	**300000**	**93000**	**230000**	**540000**	6800 U	**1500000**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**22000 J**	**5600 J**	**9300 J**	**530000**	**15000 J**	**1100000**	**17000 J**	**670000**	**37000**	**16000 J**	**30000 J**	**120000**	2700 U	**210000**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**9300**	**1800 J**	**5500 J**	**70000**	**2300 J**	**110000**	**3000 J**	**140000**	**7900**	**3100 J**	**2500 J**	**14000**	710 U	**45000**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**290 J**	**330 J**	**450 J**	**7100**	210 U	**15000**	**580 J**	**17000**	**1200 J**	**350 J**	**680 J**	**2800 J**	170 U	**8400**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**17000**	**2600 J**	**12000 J**	**42000**	**1300 J**	**37000**	**5700 J**	**130000**	**6900 J**	920 U	**1300 J**	**8800 J**	710 U	**51000**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**25000**	**4100 J**	**18000**	**64000**	**2700 J**	**34000**	**5500 J**	**200000**	**10000 J**	**2700 J**	**1500 J**	**9100 J**	740 U	**69000**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**15000**	**2900 J**	**13000 J**	**25000 J**	**1400 J**	**11000 J**	**2800 J**	**87000**	**3200 J**	**1500 J**	**1600 J**	**4100 J**	730 U	**43000**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**2900 J**	**1300 J**	**2500 J**	**30000**	**2000 J**	**80000**	**3600 J**	**91000**	**4000 J**	1300 U	**3000 J**	**8900 J**	1000 U	**26000**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**35000**	**13000 J**	**22000**	**1400000**	**36000**	**2400000**	**62000**	**2200000**	**150000**	**65000**	**63000**	**370000**	1200 U	**630000**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**74000**	**17000 J**	**35000**	**1400000**	**44000**	**2500000**	**69000**	**2800000**	**170000**	**43000**	**43000 J**	**330000**	3500 U	**880000**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**16000**	**2000 J**	**7100 J**	**160000**	**7000 J**	**490000**	**6000 J**	**320000**	**17000**	**4600 J**	**13000 J**	**59000**	1100 U	**110000**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**2300 J**	**710 J**	**1500 J**	**28000**	1000 U	**88000**	**2300 J**	**75000**	**4700 J**	1100 U	**3500 J**	**14000 J**	840 U	**22000**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**2900 J**	**810 J**	**2300 J**	**18000**	430 U	**30000**	**1100 J**	**64000**	**1900 J**	460 U	**1600 J**	**7400 J**	360 U	**28000**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**5900 J**	**1100 J**	**4700 J**	**16000**	620 U	**16000**	**1600 J**	**49000**	**2400 J**	670 U	**3900 J**	**4300 J**	520 U	**22000**
Kinnickinnic River – Reach 3																		
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**800 J**	**480 J**	**760 J**	**2700 J**	310 U	**7500**	290 U	**4900 J**	340 U	330 U	**1500 J**	**2600 J**	260 U	**11000**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**1800 J**	380 U	**2400 J**	**14000 J**	1100 U	**56000**	**2400 J**	**42000**	**1800 J**	1100 U	**3800 J**	**18000 J**	890 U	**39000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**1600 J**	320 U	**2700 J**	**45000**	**1000 J**	**110000**	**1400 J**	**79000**	1000 U	**1800 J**	**17000 J**	**35000**	770 U	**91000**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**9100 J**	**3800 J**	**10000 J**	**78000**	1600 U	**410000**	**3200 J**	**200000**	**5900 J**	1700 U	**30000 J**	**110000**	1400 U	**150000**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**44000 J**	**11000 J**	**34000 J**	**1200000**	7800 U	**2300000**	**17000 J**	**1400000**	**31000 J**	**35000 J**	**260000**	**770000**	6500 U	**3500000 J**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**34000 J**	**9600 J**	**20000 J**	**920000**	11000 U	**1900000**	11000 U	**1100000**	**31000 J**	**33000 J**	**350000**	**530000**	9500 U	**2100000 J**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**14000 J**	1900 U	**9600 J**	**270000**	6000 U	**540000**	5600 U	**730000**	**24000 J**	6400 U	**78000 J**	**86000 J**	5000 U	**240000**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**31000 J**	**9100 J**	**16000 J**	**440000**	**16000 J**	**640000**	8200 U	**1600000**	**31000 J**	**15000 J**	**220000 J**	**96000 J**	7300 U	**340000**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**2000 J**	**760 J**	**1900 J**	**33000**	1200 U	**66000**	**1400 J**	**81000**	**5000 J**	1200 U	**1900 J**	**8600 J**	960 U	**23000**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	PCB-016 (ng/kg)	PCB-017 (ng/kg)	PCB-018/030 (ng/kg)	PCB-019 (ng/kg)	PCB-020/028 (ng/kg)	PCB-021/033 (ng/kg)	PCB-022 (ng/kg)	PCB-023 (ng/kg)	PCB-024 (ng/kg)	PCB-025 (ng/kg)	PCB-026/029 (ng/kg)	PCB-027 (ng/kg)
				1 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
				5 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
				50 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
Upstream Kinnickinnic River																
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		**2000 J**	**3500 J**	**4100 J**	650 U	**9200 J**	1900 U	2100 U	2000 UJ	400 U	2000 U	2000 U	400 U
Kinnickinnic River – Reach 1																
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**3500000**	**3500000**	**7800000 J**	**950000**	**11000000**	**2400000**	**4100000**	16000 UJ	**150000**	**2300000**	**3700000**	**570000**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**630000**	**970000**	**2500000 J**	**340000**	**3500000**	**590000**	**1000000**	6900 UJ	**23000 J**	**1100000**	**1700000**	**160000**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**200000**	**240000**	**590000 J**	**52000**	**910000**	**330000**	**280000**	3700 UJ	**4800 J**	**89000**	**160000**	**33000**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**23000**	**24000**	**53000 J**	**5700**	**86000**	**23000**	**28000**	450 UJ	**1200 J**	**12000**	**21000**	**4000**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**250000**	**270000**	**710000 J**	**46000**	**1000000**	**460000**	**330000**	5300 UJ	**6000 J**	**83000**	**150000**	**34000**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**340000**	**350000**	**930000 J**	**59000**	**1400000**	**670000**	**440000**	5200 UJ	**6700 J**	**62000**	**140000**	**44000**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**300000**	**330000**	**910000 J**	**52000**	**1500000**	**680000**	**460000**	7600 UJ	**5500 J**	**47000**	**130000**	**36000**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**84000**	**88000**	**210000 J**	**19000**	**360000**	**120000**	**120000**	2100 UJ	**3700 J**	**42000**	**75000**	**13000**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**1100000**	**2000000**	**4400000 J**	**740000**	**5600000**	**540000**	**1900000**	**11000 J**	**43000**	**1400000**	**2100000**	**360000**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**2500000**	**2800000**	**5700000 J**	**700000**	**8000000**	**2000000**	**2800000**	**12000 J**	**90000**	**1500000**	**2500000**	**440000**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**450000**	**540000**	**1300000 J**	**120000**	**2100000**	**430000**	**620000**	5600 UJ	**10000 J**	**650000**	**970000**	**73000**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**89000**	**100000**	**230000 J**	**25000**	**370000**	**97000**	**110000**	1400 UJ	**3600 J**	**130000**	**180000**	**14000**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**180000**	**210000**	**530000 J**	**36000**	**800000**	**360000**	**270000**	4300 U	**3100 J**	**100000**	**160000**	**27000**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**110000**	**120000**	**300000 J**	**21000**	**430000**	**210000**	**150000**	2300 U	**2100 J**	**46000**	**78000**	**15000**
Kinnickinnic River – Reach 3																
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**11000**	**18000**	**34000 J**	**9800**	**160000**	**20000**	**29000**	1100 UJ	**410 J**	**38000**	**40000**	**6300 J**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**110000**	**210000**	**340000 J**	**63000**	**890000**	**130000**	**180000**	4100 UJ	**3000 J**	**320000**	**290000**	**35000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**160000**	**410000**	**510000 J**	**110000**	**1600000**	**130000**	**330000**	6700 U	**4800 J**	**680000**	**660000**	**59000**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**210000**	**530000**	**740000 J**	**130000**	**2400000**	**200000**	**510000**	5200 UJ	**3900 J**	**940000**	**1000000**	**86000**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**2000000**	**6300000**	**7700000 J**	**2000000**	**18000000**	**1100000**	**4800000**	26000 UJ	**31000 J**	**13000000**	**12000000**	**1100000**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**1700000**	**4900000**	**6000000 J**	**1400000**	**15000000**	**770000**	**3700000**	24000 U	**60000 J**	**10000000**	**9100000**	**830000**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**1000000**	**2400000**	**3000000 J**	**550000**	**7200000**	**1100000**	**1800000**	32000 U	**35000 J**	**1600000**	**1700000**	**290000**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**2000000**	**5400000**	**6100000 J**	**1300000**	**16000000**	**2500000**	**4500000**	79000 U	**60000 J**	**2000000**	**2100000**	**650000**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**72000**	**110000**	**180000 J**	**31000**	**350000**	**63000**	**110000**	1700 UJ	**3600 J**	**48000**	**67000**	**14000**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	PCB-031 (ng/kg)	PCB-032 (ng/kg)	PCB-034 (ng/kg)	PCB-035 (ng/kg)	PCB-036 (ng/kg)	PCB-037 (ng/kg)	PCB-038 (ng/kg)	PCB-039 (ng/kg)	PCB-040/041/071 (ng/kg)	PCB-042 (ng/kg)	PCB-043/073 (ng/kg)	PCB-044/047/065 (ng/kg)
				1 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
				5 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
				50 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
Upstream Kinnickinnic River																
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		**7200 J**	**4300 J**	2100 U	2000 U	1800 U	**4600 J**	2000 U	1800 U	**10000 J**	**5500 J**	1800 UJ	**22000 J**
Kinnickinnic River – Reach 1																
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**9600000**	**2200000**	**69000**	**120000**	14000 U	**1800000**	16000 U	**52000**	**3400000**	**1800000**	**320000 J**	**5300000**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**3100000**	**680000**	**32000**	**33000**	6200 U	**420000**	6700 U	**20000 J**	**1600000**	**890000 J**	**160000 J**	**2700000**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**850000**	**180000**	**5400 J**	3600 U	3300 U	**150000**	3600 U	**7300**	**610000**	**290000 J**	**45000 J**	**1000000**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**79000**	**15000**	**700 J**	**680 J**	400 U	**18000**	440 U	**480 J**	**73000**	**35000**	**7900 J**	**220000**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**1000000**	**210000**	**7700 J**	5200 U	4700 U	**180000**	5100 U	**9600 J**	**760000**	**350000 J**	**57000 J**	**1300000**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**1400000**	**280000**	**8900 J**	5100 U	4600 U	**240000**	5000 U	**11000 J**	**1000000**	**450000 J**	**67000 J**	**1700000**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**1500000**	**290000**	7800 U	7500 U	6800 U	**260000**	7400 U	**15000**	**1200000**	**560000 J**	**84000 J**	**2100000**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**330000**	**63000**	**2900 J**	**4700 J**	1800 U	**59000**	2000 U	**3100 J**	**220000**	**110000**	**21000 J**	**440000**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**4600000**	**1400000**	**51000**	**38000**	3600 U	**680000**	3900 U	**16000 J**	**1200000**	**740000 J**	**120000 J**	**1900000**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**6700000**	**1700000**	**59000**	**74000**	8700 U	**1400000**	9400 U	**37000**	**2400000**	**1200000 J**	**200000 J**	**3700000**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**1900000**	**370000**	**21000**	**20000**	5000 U	**250000**	5400 U	**14000**	**1200000**	**610000 J**	**99000 J**	**2100000**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**330000**	**70000**	**3900 J**	**4200 J**	1300 U	**43000**	1400 U	**1600 J**	**190000**	**100000**	**17000 J**	**330000**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**800000**	**160000**	**5400 J**	4300 U	3900 U	**130000**	4200 U	**6500 J**	**610000**	**290000 J**	**47000 J**	**980000**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**420000**	**92000**	**2800 J**	2300 U	2100 U	**75000**	2300 U	**3900 J**	**320000**	**150000 J**	**23000 J**	**530000**
Kinnickinnic River – Reach 3																
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**92000**	**37000**	1100 U	**1700 J**	950 U	**33000**	1000 U	940 U	**390000**	**260000**	**20000 J**	**980000**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**600000**	**180000**	**6700 J**	**7600 J**	3700 U	**110000**	4000 U	**4700 J**	**930000**	**550000**	**53000 J**	**2000000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**1000000**	**520000**	**11000 J**	**10000 J**	6000 U	**130000**	6500 U	6000 U	**1300000**	**740000 J**	**68000 J**	**2800000**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**1500000**	**760000**	**11000 J**	**18000 J**	4700 U	**200000**	5100 U	**8500 J**	**1400000**	**790000**	**130000 J**	**3200000**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**13000000**	**11000000**	**150000**	**95000 J**	23000 U	**1100000**	25000 U	23000 U	**16000000**	**8800000**	**500000 J**	**38000000**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**10000000**	**7800000**	**99000 J**	**71000 J**	21000 U	**790000**	23000 U	**76000 J**	**12000000**	**6800000**	**1100000 J**	**28000000**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**4800000**	**1900000**	**50000 J**	**37000 J**	29000 U	**700000**	31000 U	28000 U	**5400000**	**3200000 J**	**240000 J**	**11000000**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**11000000**	**3800000**	**120000**	78000 U	71000 U	**1600000**	77000 U	70000 U	**12000000**	**7600000 J**	**640000 J**	**23000000**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**260000**	**76000**	**3100 J**	**3200 J**	1500 U	**44000**	1700 U	1500 U	**200000**	**120000**	**13000 J**	**360000**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	PCB-045/051 (ng/kg) -- -- --	PCB-046 (ng/kg) -- -- --	PCB-048 (ng/kg) -- -- --	PCB-049/069 (ng/kg) -- -- --	PCB-050/053 (ng/kg) -- -- --	PCB-052 (ng/kg) -- -- --	PCB-054 (ng/kg) -- -- --	PCB-055 (ng/kg) -- -- --	PCB-056 (ng/kg) -- -- --	PCB-057 (ng/kg) -- -- --	PCB-058 (ng/kg) -- -- --	PCB-059/062/075 (ng/kg) -- -- --
Upstream Kinnickinnic River																
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		**3600 J**	2400 U	1900 UJ	**8700 J**	2000 U	**21000 J**	650 U	1300 U	**7700 J**	1400 U	1300 U	1300 U
Kinnickinnic River – Reach 1																
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**1500000**	**530000**	**1100000 J**	**3300000 J**	**1000000**	**5700000 J**	**17000 J**	**230000**	**1600000**	**46000**	**17000 J**	**620000**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**570000**	**250000**	**420000 J**	**1900000 J**	**570000**	**3400000 J**	**13000 J**	**69000**	**710000**	**26000 J**	**8500 J**	**240000**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**200000**	**72000**	**220000 J**	**610000 J**	**150000**	**1400000 J**	**2900 J**	**32000**	**430000**	**4600 J**	**2900 J**	**82000**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**21000**	**7600**	**24000 J**	**120000 J**	**21000**	**510000 J**	360 U	**4400**	**59000**	**970 J**	**17000**	**10000**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**250000**	**87000**	**290000 J**	**730000 J**	**200000**	**1500000 J**	**3800 J**	**30000**	**560000**	**5500 J**	1800 U	**100000**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**320000**	**120000**	**380000 J**	**950000 J**	**250000**	**2100000 J**	**4200 J**	**40000**	**760000**	**4200 J**	**2800 J**	**130000**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**380000**	**140000**	**470000 J**	**1200000 J**	**300000**	**2800000 J**	**3900 J**	**52000**	**930000**	**7100 J**	**2000 J**	**160000**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**70000**	**27000**	**80000 J**	**250000 J**	**58000**	**720000 J**	**1500 J**	**16000**	**160000**	1300 U	1200 U	**31000**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**450000**	**210000**	**200000 J**	**1500000 J**	**540000**	**2300000 J**	**18000**	**43000**	**390000**	**23000**	**5200 J**	**180000**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**950000**	**350000**	**760000 J**	**2300000 J**	**720000**	**4100000 J**	**16000 J**	**120000**	**1200000**	**29000**	**7600 J**	**390000**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**420000**	**160000**	**340000 J**	**1300000 J**	**340000**	**2500000 J**	**5100 J**	**43000**	**590000**	**17000**	**6800 J**	**170000**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**73000**	**28000**	**56000 J**	**210000 J**	**60000**	**390000 J**	**1100 J**	**8000 J**	**86000**	**2700 J**	**1200 J**	**29000**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**200000**	**75000**	**220000 J**	**580000 J**	**160000**	**1100000 J**	**2100 J**	**26000**	**420000**	**4900 J**	**1900 J**	**82000**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**110000**	**39000**	**120000 J**	**300000 J**	**80000**	**610000 J**	**1100 J**	**21000**	**220000**	1000 U	**1300 J**	**45000**
Kinnickinnic River – Reach 3																
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**150000**	**57000**	**28000 J**	**670000 J**	**220000**	**1100000 J**	**6500 J**	**8700**	**79000**	1000 U	**2800 J**	**44000**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**340000**	**160000**	**140000 J**	**1400000 J**	**460000**	**2200000 J**	**8400 J**	**38000**	**330000**	2500 U	**8100 J**	**100000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**650000**	**290000**	**99000 J**	**2300000 J**	**910000**	**2400000 J**	**33000**	1300 U	**270000**	**22000**	**13000 J**	**110000**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**720000**	**270000**	**130000 J**	**2400000 J**	**910000**	**2500000 J**	**41000**	**20000 J**	**370000**	**25000**	**14000 J**	**120000**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**11000000**	**3900000**	200000 UJ	**31000000 J**	**15000000**	**25000000 J**	**590000**	140000 U	**730000**	**320000**	140000 U	**1000000**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**8000000**	**2900000**	**340000 J**	**23000000 J**	**11000000**	**18000000**	**440000**	**170000**	**600000**	**250000**	**160000**	**870000**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**1900000**	**1100000**	**390000 J**	**9300000 J**	**3500000**	**9000000 J**	**45000 J**	**260000**	**1500000**	12000 U	**43000 J**	**440000**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**3600000**	**2600000**	**1100000 J**	**20000000 J**	**7100000**	**23000000 J**	**89000 J**	26000 U	**4100000**	26000 U	**110000 J**	**1000000**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**65000**	**47000**	**29000 J**	**300000 J**	**110000**	**390000 J**	**1800 J**	**6400 J**	**76000**	1000 U	**1300 J**	**21000 J**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	PCB-060 (ng/kg)	PCB-061/070/074/076 (ng/kg)	PCB-063 (ng/kg)	PCB-064 (ng/kg)	PCB-066 (ng/kg)	PCB-067 (ng/kg)	PCB-068 (ng/kg)	PCB-072 (ng/kg)	PCB-077 (ng/kg)	PCB-078 (ng/kg)	PCB-079 (ng/kg)	PCB-080 (ng/kg)	PCB-081 (ng/kg)
				1 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--
				5 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--
				50 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--
Upstream Kinnickinnic River																	
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		1300 U	**16000 J**	1200 U	**7200 J**	**11000 J**	1300 U	1200 U	1300 U	**1900 J**	1300 U	1100 U	1200 U	1200 U
Kinnickinnic River – Reach 1																	
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**1100000**	**5400000**	**200000**	**2300000 J**	**3100000**	**180000**	**13000 J**	**31000**	**280000**	5000 U	**15000 J**	4500 U	**7200 J**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**370000**	**2600000**	**100000**	**1200000 J**	**1500000**	**81000**	**15000 J**	**25000 J**	**140000**	3500 U	**12000 J**	3100 U	**5000 J**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**210000**	**1700000**	**36000**	**440000 J**	**900000**	**25000**	720 U	**6100 J**	**67000**	800 U	**9900**	710 U	**1700 J**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**30000**	**410000**	**4800**	**73000 J**	**140000**	**3200**	**1500 J**	**1700 J**	**8500**	360 U	**4700**	320 U	**450 J**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**290000**	**2000000**	**44000**	**550000 J**	**1100000**	**32000**	**3100 J**	**8100 J**	**87000**	1800 U	**8600 J**	1600 U	**3100 J**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**360000**	**2700000**	**55000**	**740000 J**	**1500000**	**32000**	**4000 J**	**8600 J**	**110000**	1100 U	**13000 J**	1000 U	**3300 J**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**510000**	**3600000**	**69000**	**930000 J**	**1900000**	**41000**	**3100 J**	**10000 J**	**150000**	1500 U	**19000**	1300 U	**5500 J**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**89000**	**740000**	**14000**	**180000**	**350000**	**8400 J**	1100 U	1200 U	**26000**	1200 U	**6800 J**	1100 U	**1600 J**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**200000**	**1400000**	**87000**	**740000 J**	**910000**	**45000**	**11000 J**	**23000**	**120000**	1700 U	**3900 J**	1500 U	1600 U
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**700000**	**4000000**	**130000**	**1500000 J**	**2300000**	**120000**	**15000 J**	**21000 J**	**250000**	3000 U	**15000 J**	2600 U	**10000 J**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**310000**	**2100000**	**74000**	**870000 J**	**1200000**	**61000**	**7600 J**	**18000**	**100000**	1900 U	**12000 J**	1700 U	**3300 J**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**44000**	**300000**	**13000**	**130000**	**170000**	**8500 J**	**1600 J**	**2800 J**	**16000**	770 U	660 U	680 U	690 U
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**230000**	**1400000**	**14000**	**430000 J**	**780000**	**24000**	**2600 J**	**5600 J**	**59000**	1000 U	**5900 J**	900 UJ	**2000 J**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**110000**	**750000**	**17000**	**230000 J**	**410000**	**13000**	890 U	1000 U	**32000**	990 U	**3300 J**	880 UJ	950 U
Kinnickinnic River – Reach 3																	
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**20000**	**290000**	**4800 J**	**100000 J**	**400000**	**4400 J**	**9700**	**11000**	**38000**	960 U	**9300**	860 U	**1100 J**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**110000**	**1300000**	**31000**	**430000 J**	**1000000**	**46000**	**20000**	**25000**	**88000**	2400 U	**13000 J**	2100 U	2300 U
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**73000**	**1200000**	**70000**	**420000 J**	**1100000**	**29000**	**42000**	**51000**	**73000**	1300 U	**12000 J**	1100 UJ	1200 U
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**120000**	**1500000**	**82000**	**500000 J**	**1300000**	**40000**	**42000**	**49000**	**96000**	2300 U	**14000 J**	2000 U	2200 U
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**170000**	**4700000**	**810000**	**2400000 J**	**6800000**	130000 U	**580000**	**560000**	**470000**	140000 U	120000 U	120000 U	130000 U
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**180000**	**3700000**	**580000**	**2100000**	**5100000**	110000 U	**390000**	**460000**	**340000**	120000 U	98000 U	100000 U	110000 U
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**360000**	**6800000**	**260000**	**2000000 J**	**6200000**	**96000 J**	**110000**	**160000**	**340000**	11000 U	**54000 J**	10000 UJ	11000 U
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**960000**	**20000000**	**590000**	**5300000 J**	**16000000**	**130000**	**230000**	**300000**	**870000**	25000 U	**130000**	22000 UJ	**35000 J**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**26000**	**340000**	**11000 J**	**97000**	**250000**	**3600 J**	**2500 J**	**5400 J**	**16000**	980 U	**2200 J**	870 U	980 U

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	PCB-082 (ng/kg) -- -- --	PCB-083/099 (ng/kg) -- -- --	PCB-084 (ng/kg) -- -- --	PCB-085/116/117 (ng/kg) -- -- --	PCB-086/087/097/109/119/125 (ng/kg) -- -- --	PCB-088/091 (ng/kg) -- -- --	PCB-089 (ng/kg) -- -- --	PCB-090/101/113 (ng/kg) -- -- --	PCB-092 (ng/kg) -- -- --
Upstream Kinnickinnic River													
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		2500 U	**23000 J**	**12000 J**	**8700 J**	**21000 J**	**15000 J**	2500 U	**28000 J**	**6800 J**
Kinnickinnic River – Reach 1													
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**320000**	**900000**	**560000**	**350000**	**1000000**	**330000**	**65000**	**1200000**	**270000**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**210000**	**730000**	**430000**	**260000**	**770000**	**250000**	**45000**	**870000**	**210000**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**150000**	**600000**	**320000**	**200000**	**710000**	**160000**	**19000**	**910000**	**170000**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**72000**	**310000**	**170000**	**93000**	**390000**	**75000**	**6100**	**580000**	**110000**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**160000**	**500000**	**280000**	**180000**	**590000**	**140000**	**25000**	**660000**	**120000**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**230000**	**740000**	**400000**	**270000**	**890000**	**210000**	**37000**	**1000000**	**190000**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**340000**	**1200000**	**600000**	**420000**	**1400000**	**320000**	**52000**	**1700000**	**310000**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**100000**	**410000**	**220000**	**130000**	**520000**	**100000**	**11000**	**700000**	**130000**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**81000**	**290000**	**160000**	**100000**	**280000**	**120000**	**17000 J**	**330000**	**110000**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**250000**	**790000**	**460000**	**290000**	**920000**	**270000**	**45000**	**1100000**	**230000**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**200000**	**610000**	**390000**	**230000**	**710000**	**210000**	**46000**	**810000**	**190000**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**22000**	**69000**	**47000**	**26000 J**	**74000**	**27000**	**4900 J**	**84000**	**21000**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**93000 J**	**270000**	**160000**	**110000**	**310000**	**89000**	**19000**	**310000**	**64000**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**58000 J**	**170000**	**100000**	**63000**	**200000**	**53000**	**11000**	**230000**	**45000**
Kinnickinnic River – Reach 3													
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**140000**	**780000**	**300000**	**210000**	**730000**	**280000**	**16000**	**1200000**	**290000**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**210000**	**1200000**	**490000**	**300000**	**1100000**	**480000**	**28000**	**1800000**	**470000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**110000 J**	**1000000**	**350000**	**220000**	**710000**	**690000**	**15000**	**1200000**	**480000**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**150000**	**1100000**	**400000**	**270000**	**860000**	**770000**	**20000 J**	**1400000**	**530000**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**300000**	**7100000**	**2200000**	**1400000**	**3500000**	**9700000**	5700 U	**6100000**	**4900000**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**220000 J**	**5200000**	**1700000**	**1000000**	**2700000**	**7100000**	7500 U	**4600000**	**3600000**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**480000 J**	**4900000**	**1600000**	**920000**	**3200000**	**3000000**	**45000 J**	**5300000**	**1900000**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**1400000 J**	**11000000**	**4100000**	**2300000**	**7800000**	**5800000**	**150000**	**12000000**	**3900000**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**21000**	**140000**	**59000**	**35000 J**	**110000**	**60000**	**2600 J**	**160000**	**46000**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	PCB-093/100 (ng/kg) -- -- --	PCB-094 (ng/kg) -- -- --	PCB-095 (ng/kg) -- -- --	PCB-096 (ng/kg) -- -- --	PCB-098/102 (ng/kg) -- -- --	PCB-103 (ng/kg) -- -- --	PCB-104 (ng/kg) -- -- --	PCB-105 (ng/kg) -- -- --	PCB-106 (ng/kg) -- -- --	PCB-107 (ng/kg) -- -- --	PCB-108/124 (ng/kg) -- -- --	PCB-110/115 (ng/kg) -- -- --	PCB-111 (ng/kg) -- -- --
Upstream Kinnickinnic River																	
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		2300 U	2500 U	**52000**	1900 U	2300 U	2100 U	1700 U	**11000 J**	2400 U	2300 U	2400 U	**61000 J**	1500 U
Kinnickinnic River – Reach 1																	
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**30000 J**	**19000 J**	**1200000**	**41000**	**130000**	**17000 J**	610 U	**530000**	**7000 J**	**85000**	**44000 J**	**1400000**	**6300 J**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**36000 J**	**19000 J**	**910000**	**30000**	**94000**	**13000 J**	1500 U	**400000**	2800 U	**65000**	**34000 J**	**1200000**	**5800 J**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**13000 J**	**7500**	**780000**	**12000**	**47000**	**5800 J**	350 U	**380000**	**1200 J**	**60000**	**35000**	**1100000**	310 U
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**7300**	**1800 J**	**520000**	**3400**	**18000**	**2900**	370 U	**220000**	600 U	**38000**	**26000**	**620000**	330 U
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**17000 J**	**6900 J**	**590000**	**14000 J**	**50000**	**4400 J**	560 U	**330000**	1000 U	**49000**	**26000 J**	**820000**	500 U
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**24000 J**	**10000 J**	**930000**	**18000**	**71000**	**8000 J**	360 U	**460000**	**1200 J**	**71000**	**38000**	**1300000**	320 U
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**35000**	**11000 J**	**1500000**	**25000**	**92000**	**11000 J**	510 U	**780000**	1500 U	**110000**	**69000**	**2100000**	450 U
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**12000 J**	**4000 J**	**580000**	**7000 J**	**27000**	**3700 J**	630 U	**270000**	1100 U	**42000**	**30000**	**800000**	560 U
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**15000 J**	**13000 J**	**330000**	**14000 J**	**45000**	**10000 J**	570 U	**150000**	1300 U	**30000**	**13000 J**	**450000**	510 U
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**29000 J**	**16000 J**	**1100000**	**32000**	**100000**	**14000 J**	1000 U	**470000**	2000 U	**76000**	**39000 J**	**1300000**	890 U
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**22000 J**	**14000**	**850000**	**24000**	**70000**	**12000 J**	540 U	**360000**	**2300 J**	**59000**	**28000**	**1100000**	**4400 J**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**4300 J**	**1200 J**	**95000**	**3400 J**	**7600 J**	570 U	450 U	**47000**	620 U	**7400 J**	**3100 J**	**130000**	400 U
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**7500 J**	**5500 J**	**320000**	**10000**	**33000**	**3900 J**	160 U	**180000**	**880 J**	**26000**	**14000**	**430000**	140 U
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**3800 J**	**2500 J**	**210000**	**5400 J**	**18000**	**2300 J**	300 U	**110000**	**1100 J**	**16000**	**9200 J**	**290000**	270 U
Kinnickinnic River – Reach 3																	
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**42000**	**26000**	**940000**	**24000**	**64000**	**24000**	**610 J**	**160000**	1200 U	**54000**	**29000**	**1300000**	220 U
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**60000**	**47000**	**1500000**	**46000**	**120000**	**48000**	**870 J**	**400000**	4000 U	**110000**	**53000**	**2000000**	620 U
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**130000**	**100000**	**840000**	**79000**	**130000**	**75000**	**6000 J**	**340000**	3400 U	**120000**	**37000**	**1400000**	**7000 J**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**150000**	**110000**	**1000000**	**85000**	**150000**	**88000**	**5300 J**	**400000**	4800 U	**140000**	**40000 J**	**1600000**	920 U
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**1500000**	**1700000**	**2800000**	**1300000**	**1300000**	**1200000**	**55000 J**	**1100000**	15000 U	**880000**	**140000 J**	**6200000**	**70000 J**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**1200000**	**1200000**	**2100000**	**900000**	**960000**	**860000**	**38000 J**	**820000**	**18000 J**	**650000**	**100000 J**	**4900000**	**47000 J**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**350000**	**290000**	**4300000**	**290000**	**610000**	**280000**	**11000 J**	**1600000**	12000 U	**560000**	**190000 J**	**7000000**	**40000 J**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**600000**	**500000**	**11000000**	**500000**	**1200000**	**470000**	**6900 J**	**4200000**	19000 U	**1200000**	**500000**	**17000000**	**79000 J**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**7100 J**	**4800 J**	**150000**	**4600 J**	**14000 J**	**4400 J**	640 U	**65000**	900 U	**16000**	**6900 J**	**230000**	570 U

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	PCB-112 (ng/kg) -- -- --	PCB-114 (ng/kg) -- -- --	PCB-118 (ng/kg) -- -- --	PCB-120 (ng/kg) -- -- --	PCB-121 (ng/kg) -- -- --	PCB-122 (ng/kg) -- -- --	PCB-123 (ng/kg) -- -- --	PCB-126 (ng/kg) -- -- --	PCB-127 (ng/kg) -- -- --	PCB-128/166 (ng/kg) -- -- --	PCB-129/138/160/163 (ng/kg) -- -- --	PCB-130 (ng/kg) -- -- --	PCB-131 (ng/kg) -- -- --
Upstream Kinnickinnic River																	
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		1600 U	2200 U	**17000 J**	1500 U	1600 U	2600 U	2100 U	2400 U	2300 U	**18000 J**	**91000 J**	**7400 J**	2100 U
Kinnickinnic River – Reach 1																	
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**13000 J**	**44000**	**930000**	540 U	590 U	**30000**	**29000**	**4000 J**	1900 U	**99000**	**700000**	**52000**	**14000 J**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**15000 J**	**34000**	**750000**	**3400 J**	1500 U	**22000 J**	**21000 J**	2800 U	2700 U	**68000**	**480000**	**35000**	**9000 J**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**9100**	**24000**	**800000**	310 U	330 U	**16000**	**16000**	**1800 J**	**2400 J**	**120000**	**600000**	**44000**	**12000 J**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**3100**	**14000**	**530000**	320 U	350 U	**9300**	**8700**	**950 J**	**1200 J**	**110000**	**640000**	**49000**	**13000**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**7300 J**	**23000**	**590000**	490 U	530 U	**16000**	**15000 J**	**1900 J**	960 U	**66000**	**350000**	**26000**	**6500 J**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**9600 J**	**31000**	**900000**	320 U	340 U	**21000**	**17000**	**2500 J**	1000 U	**100000**	**590000**	**45000**	**11000 J**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**10000 J**	**53000**	**1500000**	450 U	480 U	**34000**	**34000**	**3700 J**	1400 U	**200000**	**1100000**	**80000**	**22000 J**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**3700 J**	**20000**	**610000**	**2400 J**	600 U	**11000**	**9100 J**	**1500 J**	**1700 J**	**110000**	**550000**	**41000**	**12000 J**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**3600 J**	**14000 J**	**270000**	500 U	550 U	**8800 J**	**7100 J**	1300 U	1300 U	**30000 J**	**230000**	**17000 J**	**2600 J**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**13000 J**	**38000**	**840000**	880 U	950 U	**24000 J**	**22000 J**	**3000 J**	1900 U	**110000**	**740000**	**48000**	**15000 J**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**11000 J**	**30000**	**670000**	**6400 J**	510 U	**20000**	**15000**	**2900 J**	970 U	**72000**	**450000**	**30000**	**8500 J**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**1400 J**	**4200 J**	**84000**	390 U	430 U	**1300 J**	**2400 J**	670 U	590 U	**7700 J**	**41000**	**3500 J**	**1000 J**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**2300 J**	**14000**	**290000**	140 U	150 U	**9100**	**6400 J**	**1700 J**	400 U	**21000**	**110000**	**9000**	**2500 J**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		290 U	**8800**	**200000**	260 U	280 U	**5600 J**	**4700 J**	**730 J**	600 U	**22000**	**120000**	**8800**	**2400 J**
Kinnickinnic River – Reach 3																	
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		240 U	**6900 J**	**630000**	**6100 J**	230 U	**16000**	**16000**	**2600 J**	1200 U	**210000**	**1600000**	**94000**	**19000**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		680 U	**25000**	**1200000**	**11000 J**	660 U	**21000**	**24000**	**5600 J**	3800 U	**340000**	**2700000**	**150000**	**29000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		530 U	**25000**	**990000**	**12000 J**	**3800 J**	**18000**	**21000**	3400 U	3300 U	**250000**	**1900000**	**110000**	**22000 J**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**12000 J**	**25000**	**1100000**	**12000 J**	980 U	**17000 J**	**15000 J**	4600 U	4600 U	**270000**	**2200000**	**120000**	**20000 J**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		3800 U	**100000 J**	**3700000**	**87000 J**	**38000 J**	**48000 J**	**84000 J**	**17000 J**	14000 U	**1400000**	**12000000**	**580000**	**85000 J**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**65000 J**	**75000 J**	**2800000**	**72000 J**	**20000 J**	**44000 J**	**84000 J**	13000 U	11000 U	**1000000**	**9000000**	**430000**	**76000 J**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**97000 J**	**120000**	**5000000**	**43000 J**	3700 U	**95000 J**	**95000 J**	**19000 J**	**13000 J**	**1200000**	**8600000**	**510000**	**98000 J**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		4000 U	**310000**	**12000000**	**100000 J**	3900 U	**220000**	**240000**	**27000 J**	**46000 J**	**2400000**	**16000000**	**940000**	**200000 J**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**660 J**	**4900 J**	**170000**	560 U	610 U	**3100 J**	**3600 J**	910 U	860 U	**30000**	**170000**	**12000**	**2400 J**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	PCB-132 (ng/kg) -- -- --	PCB-133 (ng/kg) -- -- --	PCB-134/143 (ng/kg) -- -- --	PCB-135/151 (ng/kg) -- -- --	PCB-136 (ng/kg) -- -- --	PCB-137 (ng/kg) -- -- --	PCB-139/140 (ng/kg) -- -- --	PCB-141 (ng/kg) -- -- --	PCB-142 (ng/kg) -- -- --	PCB-144 (ng/kg) -- -- --	PCB-145 (ng/kg) -- -- --	PCB-146 (ng/kg) -- -- --	PCB-147/149 (ng/kg) -- -- --
Upstream Kinnickinnic River																	
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		**36000 J**	1900 U	**5100 J**	**31000 J**	**12000 J**	**5000 J**	1700 U	**13000 J**	2000 U	**5500 J**	770 U	**9800 J**	**76000 J**
Kinnickinnic River – Reach 1																	
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**270000 J**	**13000 J**	**53000 J**	**340000**	**120000 J**	**28000**	**13000 J**	**180000**	1500 U	**46000**	460 UJ	**110000**	**680000**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**180000**	**7900 J**	**32000 J**	**180000 J**	**70000 J**	**21000 J**	**11000 J**	**93000**	1700 U	**27000 J**	**1200 J**	**66000**	**400000**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**230000**	**7800**	**44000 J**	**160000 J**	**76000 J**	**38000**	**14000**	**100000**	870 U	**27000**	**1400 J**	**68000**	**410000**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**250000**	**7700**	**46000 J**	**150000 J**	**68000 J**	**41000**	**15000**	**120000**	650 U	**24000**	**750 J**	**70000**	**460000**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**130000**	**5200 J**	**25000 J**	**110000 J**	**46000 J**	**21000**	**6600 J**	**67000**	860 U	**16000**	**370 J**	**40000**	**250000**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**220000**	**7800 J**	**40000 J**	**170000 J**	**73000 J**	**37000**	**13000 J**	**110000**	930 U	**26000**	**770 J**	**68000**	**410000**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**420000**	**13000 J**	**75000 J**	**280000 J**	**140000 J**	**69000**	**25000 J**	**180000**	900 U	**47000**	**1600 J**	**120000**	**690000**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**210000 J**	**7900 J**	**39000 J**	**140000 J**	**67000 J**	**35000**	**13000 J**	**100000**	1200 U	**25000**	430 U	**60000**	**370000**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**79000**	**4600 J**	**18000 J**	**120000 J**	**38000 J**	**9900 J**	**4900 J**	**53000**	710 U	**13000 J**	**280 J**	**36000**	**220000**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**280000**	**12000 J**	**53000 J**	**330000 J**	**120000 J**	**30000**	**13000 J**	**180000**	1500 U	**44000**	470 U	**110000**	**690000**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**180000**	**9000 J**	**33000 J**	**180000 J**	**70000 J**	**22000**	**10000 J**	**91000**	850 U	**22000**	**730 J**	**70000**	**380000**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**18000 J**	**1400 J**	**3700 J**	**18000 J**	**5600 J**	**1800 J**	**960 J**	**6700 J**	580 U	**1300 J**	110 U	**7200 J**	**33000**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**45000 J**	**1800 J**	**8100 J**	**37000 J**	**16000 J**	**7100**	**2400 J**	**20000**	350 UJ	**4400 J**	76 UJ	**15000**	**83000**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**46000 J**	**2100 J**	**7800 J**	**37000 J**	**15000 J**	**6100 J**	**2900 J**	**24000**	330 UJ	**5200 J**	**110 J**	**16000**	**88000**
Kinnickinnic River – Reach 3																	
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**500000**	**26000**	**98000 J**	**710000 J**	**240000 J**	**58000**	**23000**	**350000**	1100 U	**83000**	**940 J**	**230000**	**1400000**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**880000**	**51000**	**170000 J**	**1400000 J**	**450000 J**	**84000**	**40000**	**670000**	2900 U	**160000**	300 U	**430000**	**2700000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**520000 J**	**47000**	**140000 J**	**850000 J**	**290000 J**	**74000**	**35000**	**360000**	2700 UJ	**83000 J**	160 UJ	**270000**	**1700000**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**560000**	**50000**	**140000 J**	**1000000 J**	**340000 J**	**85000**	**37000 J**	**430000**	3300 U	**100000**	710 U	**320000**	**1900000**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**1900000**	**410000**	**1000000 J**	**6700000 J**	**2000000 J**	**510000**	**260000**	**1700000**	15000 U	**380000**	3700 U	**1800000**	**12000000**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**1500000 J**	**330000**	**870000 J**	**5100000**	**1600000 J**	**390000**	**190000 J**	**1400000**	13000 U	**320000**	**6600 J**	**1300000**	**9000000**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**2300000 J**	**160000**	**670000 J**	**3800000 J**	**1400000 J**	**380000**	**170000 J**	**1700000**	19000 UJ	**380000 J**	**14000 J**	**1200000**	**7500000**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**4500000 J**	**250000**	**1200000 J**	**6100000 J**	**2400000 J**	**800000**	**320000**	**3000000**	19000 UJ	**690000 J**	3100 UJ	**2000000**	**13000000**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**55000 J**	**3100 J**	**13000 J**	**53000 J**	**23000 J**	**9900 J**	**3900 J**	**32000**	590 U	**6700 J**	220 U	**20000**	**130000**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	PCB-148 (ng/kg) -- -- --	PCB-150 (ng/kg) -- -- --	PCB-152 (ng/kg) -- -- --	PCB-153/168 (ng/kg) -- -- --	PCB-154 (ng/kg) -- -- --	PCB-155 (ng/kg) -- -- --	PCB-156/157 (ng/kg) -- -- --	PCB-158 (ng/kg) -- -- --	PCB-159 (ng/kg) -- -- --	PCB-161 (ng/kg) -- -- --	PCB-162 (ng/kg) -- -- --	PCB-164 (ng/kg) -- -- --	PCB-165 (ng/kg) -- -- --	PCB-167 (ng/kg) -- -- --
Upstream Kinnickinnic River																		
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		1000 U	690 U	740 UJ	**58000 J**	890 U	710 U	**3300 J**	**7600 J**	1200 U	1300 U	1200 U	**12000 J**	1500 U	**3600 J**
Kinnickinnic River – Reach 1																		
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**1300 J**	420 UJ	**460 J**	**590000**	**8200 J**	420 U	**73000**	**79000**	**12000 J**	1000 U	**1700 J**	**54000**	1200 U	**24000 J**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**1100 J**	**1700 J**	**1100 J**	**320000**	**6200 J**	330 U	**56000 J**	**54000**	**4400 J**	1100 U	1000 U	**33000**	1300 U	**16000 J**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**220 J**	**640 J**	**520 J**	**390000**	**5100 J**	140 U	**81000**	**69000**	**3200 J**	570 U	**2500 J**	**39000**	650 U	**24000**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		460 U	310 U	330 UJ	**440000**	**4000**	310 U	**84000**	**77000**	**2700**	420 U	**1800 J**	**42000**	480 U	**23000**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		320 U	220 U	**310 J**	**240000**	**3700 J**	220 U	**48000**	**41000**	**3400 J**	560 U	530 U	**25000**	640 U	**13000 J**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**460 J**	**560 J**	**940 J**	**380000**	**5600 J**	210 U	**79000**	**66000**	**4100 J**	600 U	570 U	**40000**	690 U	**22000**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**740 J**	**1100 J**	**1300 J**	**680000**	**7500 J**	120 U	**150000**	**130000**	**5900 J**	590 U	560 U	**71000**	670 U	**43000**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		570 U	390 UJ	410 UJ	**350000**	**5100 J**	390 U	**75000**	**66000**	**3500 J**	780 U	**1900 J**	**34000**	890 U	**21000**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**350 J**	**1000 J**	**1100 J**	**180000**	**6100 J**	120 U	**22000 J**	**24000**	**3900 J**	460 U	440 U	**16000 J**	530 U	**7100 J**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		630 U	**1100 J**	**920 J**	**600000**	**11000 J**	430 U	**82000**	**81000**	**12000 J**	950 U	900 U	**54000**	1100 U	**25000 J**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**480 J**	**440 J**	**880 J**	**320000**	**9000 J**	210 U	**51000**	**49000**	**5100 J**	**590 J**	530 U	**31000**	630 U	**14000**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		140 U	98 UJ	100 UJ	**28000**	**1200 J**	99 U	**5400 J**	**4500 J**	**680 J**	380 U	360 U	**3100 J**	430 U	**1300 J**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**170 J**	68 UJ	**120 J**	**71000**	**1700 J**	69 U	**14000**	**11000**	**1100 J**	230 U	**380 J**	**7800**	260 U	**3500 J**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		130 U	87 UJ	93 UJ	**81000**	**1500 J**	89 U	**15000**	**13000**	**1300 J**	220 U	210 U	**8800**	250 U	**4200 J**
Kinnickinnic River – Reach 3																		
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**2900 J**	**4800 J**	**4000 J**	**1400000**	**30000**	**200 J**	**110000**	**150000**	**27000**	690 U	**3000 J**	**110000**	**1400 J**	**51000**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**3300 J**	**11000 J**	**8600 J**	**2500000**	**60000**	280 U	**220000**	**270000**	**53000**	1900 U	1800 U	**200000**	2100 U	**84000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**10000 J**	**24000 J**	**18000 J**	**1500000**	**66000**	**580 J**	**190000**	**180000**	**36000**	1800 U	**6400 J**	**130000**	**6700 J**	**63000**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**11000 J**	**27000**	**19000 J**	**1800000**	**82000**	**820 J**	**220000**	**210000**	**37000**	2200 U	**6600 J**	**150000**	**6900 J**	**73000**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**110000**	**350000**	**320000 J**	**8900000**	**750000**	**5300 J**	**1200000**	**1000000**	**200000**	9800 U	**40000 J**	**680000**	**80000 J**	**400000**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**96000 J**	**240000**	**240000 J**	**6900000**	**490000**	**7800 J**	**910000**	**820000**	**160000**	**26000 J**	8100 U	**580000**	**94000 J**	**320000**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**19000 J**	**74000 J**	**56000 J**	**7000000**	**260000**	3200 U	**910000**	**880000**	**140000**	12000 U	**25000 J**	**620000**	14000 U	**300000**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**38000 J**	**98000 J**	**68000 J**	**12000000**	**310000**	2800 U	**1900000**	**1700000**	**190000**	13000 U	**55000 J**	**1100000**	**21000 J**	**590000**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		290 U	**630 J**	**460 J**	**120000**	**2700 J**	200 U	**24000 J**	**19000**	**1300 J**	390 U	370 U	**11000 J**	440 U	**6400 J**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No. 1 mg/kg 5 mg/kg 50 mg/kg	PCB-169 (ng/kg) -- -- --	PCB-170 (ng/kg) -- -- --	PCB-171/173 (ng/kg) -- -- --	PCB-172 (ng/kg) -- -- --	PCB-174 (ng/kg) -- -- --	PCB-175 (ng/kg) -- -- --	PCB-176 (ng/kg) -- -- --	PCB-177 (ng/kg) -- -- --	PCB-178 (ng/kg) -- -- --	PCB-179 (ng/kg) -- -- --	PCB-180/193 (ng/kg) -- -- --	PCB-181 (ng/kg) -- -- --	PCB-182 (ng/kg) -- -- --
Upstream Kinnickinnic River																	
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		930 U	**24000 J**	**7700 J**	**3900 J**	**23000 J**	**1200 J**	**3600 J**	**13000 J**	**4300 J**	**9800 J**	**49000 J**	390 U	370 U
Kinnickinnic River – Reach 1																	
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		810 U	**220000**	**75000**	**46000**	**290000 J**	**10000 J**	**35000**	**160000**	**52000**	**130000 J**	**520000**	**2500 J**	210 U
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		820 U	**100000**	**33000 J**	**19000 J**	**120000**	**6200 J**	**14000 J**	**72000**	**24000 J**	**54000**	**230000**	**1600 J**	**2300 J**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		420 U	**78000**	**27000**	**12000**	**76000**	**2500 J**	**9000**	**44000**	**12000**	**28000**	**150000**	**990 J**	37 U
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		300 U	**84000**	**27000**	**12000**	**78000 J**	**3200**	**9600**	**44000 J**	**12000**	**30000**	**130000**	**1200 J**	500 U
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		410 U	**62000**	**22000 J**	**11000 J**	**70000**	**2500 J**	**7600 J**	**37000**	**11000 J**	**26000**	**140000**	**940 J**	**1100 J**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		450 U	**96000**	**29000**	**13000 J**	**91000**	**3500 J**	**9700 J**	**53000**	**16000**	**33000**	**190000**	**1200 J**	**640 J**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		430 U	**140000**	**44000**	**23000**	**130000**	**4000 J**	**14000 J**	**74000**	**18000**	**47000**	**250000**	**2200 J**	210 U
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		570 U	**69000**	**22000**	**11000**	**67000 J**	**2500 J**	**7600 J**	**38000 J**	**11000**	**26000 J**	**130000**	**1300 J**	720 U
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		340 U	**75000**	**23000 J**	**14000 J**	**93000**	**4100 J**	**13000 J**	**52000**	**20000**	**43000**	**170000**	97 U	**880 J**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		700 U	**210000**	**78000**	**41000**	**290000**	**12000 J**	**34000**	**150000**	**55000**	**120000**	**520000**	**2800 J**	**2900 J**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		410 U	**98000**	**31000**	**18000**	**120000**	**3900 J**	**13000**	**64000**	**23000**	**50000**	**210000**	43 U	**1500 J**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		290 U	**11000**	**3400 J**	**1900 J**	**12000 J**	290 U	**1300 J**	**6800 J**	**2300 J**	**4400 J**	**23000**	280 U	260 U
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		170 U	**21000**	**6200 J**	**3500 J**	**22000 J**	**980 J**	**2600 J**	**13000**	**3800 J**	**10000**	**44000**	79 U	**210 J**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		160 U	**21000**	**6200 J**	**3900 J**	**25000 J**	**980 J**	**2800 J**	**14000**	**4000 J**	**11000**	**48000**	54 U	**260 J**
Kinnickinnic River – Reach 3																	
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		500 U	**490000**	**170000**	**96000**	**670000 J**	**25000**	**74000**	**360000 J**	**130000**	**280000**	**1200000**	37 U	**6800 J**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		1400 U	**990000**	**340000**	**200000**	**1400000 J**	**49000**	**160000**	**730000 J**	**270000**	**580000**	**2500000**	190 U	180 U
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**3800 J**	**660000**	**220000**	**130000**	**810000 J**	**32000**	**88000**	**450000**	**170000**	**350000**	**1500000**	**7800 J**	**6900 J**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		1600 U	**830000**	**260000**	**160000**	**990000 J**	**43000**	**110000**	**550000 J**	**220000**	**440000**	**2000000**	280 U	**11000 J**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		7200 U	**4700000**	**1500000**	**930000**	**5200000 J**	**240000**	**600000**	**3100000 J**	**1400000**	**2800000**	**11000000**	**73000 J**	**56000 J**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		6600 U	**3700000**	**1100000**	**680000**	**4000000**	**170000**	**530000**	**2300000**	**1000000**	**2100000**	**8500000**	**50000 J**	**54000 J**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		9000 U	**2600000**	**820000**	**480000**	**3300000 J**	**130000**	**360000**	**1800000**	**660000**	**1400000**	**6200000**	**38000 J**	460 U
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		9300 U	**3900000**	**1300000**	**720000**	**4600000 J**	**180000**	**530000**	**2500000**	**940000**	**2000000**	**8700000**	**46000 J**	**48000 J**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		300 U	**31000**	**10000 J**	**5100 J**	**32000 J**	**1200 J**	**3900 J**	**19000 J**	**6500 J**	**14000 J**	**64000**	**480 J**	330 U

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	PCB-183/185 (ng/kg)	PCB-184 (ng/kg)	PCB-186 (ng/kg)	PCB-187 (ng/kg)	PCB-188 (ng/kg)	PCB-189 (ng/kg)	PCB-190 (ng/kg)	PCB-191 (ng/kg)	PCB-192 (ng/kg)	PCB-194 (ng/kg)	PCB-195 (ng/kg)	PCB-196 (ng/kg)	PCB-197 (ng/kg)	PCB-198/199 (ng/kg)
				1 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				5 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				50 mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Upstream Kinnickinnic River																		
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		**14000 J**	310 U	300 U	**27000 J**	290 U	1400 U	290 U	**1100 J**	310 U	**11000 J**	**4300 J**	**5200 J**	480 U	**8900 J**
Kinnickinnic River – Reach 1																		
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**180000 J**	180 U	170 U	**320000**	160 U	**7200 J**	**43000**	**14000 J**	170 U	**120000**	**51000**	**73000**	**5800 J**	**170000**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**72000 J**	390 U	380 U	**140000**	360 U	**4500 J**	**19000 J**	**4400 J**	380 U	**68000**	**26000 J**	**34000**	**3600 J**	**83000**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**46000 J**	32 U	31 U	**74000**	29 U	**3400 J**	**15000**	**3300 J**	31 U	**34000**	**13000**	**15000**	**1000 J**	**31000**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**49000**	430 U	420 U	**69000**	370 U	**3300**	**13000**	**3200**	420 U	**23000**	**8100**	**12000**	**790 J**	**24000**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**44000 J**	120 U	110 U	**74000**	110 U	**2600 J**	**14000 J**	**3100 J**	110 U	**45000**	**16000**	**21000**	**1200 J**	**49000**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**57000 J**	190 U	190 U	**93000**	180 U	**3800 J**	**18000**	**4300 J**	190 U	**50000**	**18000**	**22000**	**1100 J**	**48000**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**76000 J**	180 U	170 U	**110000**	160 U	**5300 J**	**29000**	**6100 J**	180 U	**59000**	**22000**	**28000**	**1400 J**	**54000**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**42000 J**	620 U	590 U	**65000**	550 U	**2900 J**	**13000**	**3300 J**	600 U	**22000**	**9300 J**	**13000**	**710 J**	**28000**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**60000 J**	79 U	76 U	**110000**	72 U	**3100 J**	**16000 J**	**3500 J**	77 U	**46000**	**20000**	**26000**	**1800 J**	**56000**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**170000 J**	230 U	220 U	**310000**	210 U	**7900 J**	**49000**	**8500 J**	220 U	**130000**	**51000**	**76000**	**5000 J**	**170000**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**70000 J**	35 U	34 U	**130000**	32 U	**3700 J**	**19000**	**4000 J**	34 U	**59000**	**24000**	**30000**	**2500 J**	**66000**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**6700 J**	230 U	220 U	**12000**	210 U	**500 J**	**1400 J**	**640 J**	220 U	**7800 J**	**2400 J**	**2700 J**	**330 J**	**6600 J**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**13000**	64 U	61 U	**25000**	58 U	**960 J**	**4000 J**	**820 J**	63 U	**16000**	**5600 J**	**5700 J**	**190 J**	**16000**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**16000**	44 U	42 U	**29000**	**69 J**	**890 J**	**4600 J**	**800 J**	43 U	**15000**	**5300 J**	**7700**	**280 J**	**18000**
Kinnickinnic River – Reach 3																		
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**390000**	30 U	29 U	**740000**	**770 J**	**17000**	**110000**	**25000**	29 U	**270000**	**120000**	**160000**	**10000**	**350000**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**840000**	160 U	150 U	**1600000**	**1800 J**	**37000**	**220000**	**53000**	150 U	**600000**	**260000**	**350000**	**28000**	**770000**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**480000**	170 U	160 U	**930000**	**4100 J**	**24000**	**140000**	**35000**	160 U	**420000**	**180000**	**230000**	**15000**	**500000**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**630000**	230 U	220 U	**1200000**	**3200 J**	**32000**	**180000**	**44000**	220 U	**560000**	**230000**	**300000**	**17000 J**	**640000**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**3600000**	1800 U	1700 U	**7000000**	**54000 J**	**190000**	**1000000**	**210000**	1800 U	**3200000**	**1300000**	**1800000**	**100000 J**	**3800000**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**2700000 J**	1300 U	1200 U	**5300000**	**37000 J**	**140000**	**770000**	**210000**	1200 U	**2400000**	**1100000**	**1300000**	**90000 J**	**2900000**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**2100000**	390 U	380 U	**3800000**	**7800 J**	**93000 J**	**530000**	**130000**	390 U	**1600000**	**640000**	**890000**	**64000 J**	**2000000**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**2800000**	1900 U	1800 U	**5100000**	**12000 J**	**150000**	**760000**	**210000**	1800 U	**2100000**	**920000**	**1200000**	**92000 J**	**2700000**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**22000 J**	280 U	270 U	**38000**	240 U	**1300 J**	**5400 J**	**1600 J**	280 U	**17000**	**6200 J**	**8700 J**	**290 J**	**22000 J**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	PCB-200 (ng/kg)	PCB-201 (ng/kg)	PCB-202 (ng/kg)	PCB-203 (ng/kg)	PCB-204 (ng/kg)	PCB-205 (ng/kg)	PCB-206 (ng/kg)	PCB-207 (ng/kg)	PCB-208 (ng/kg)	PCB-209 (ng/kg)	Total PCB Congeners (U = 0) (ng/kg)
				1 mg/kg	--	--	--	--	--	--	--	--	--	--	1,000,000
				5 mg/kg	--	--	--	--	--	--	--	--	--	--	5,000,000
				50 mg/kg	--	--	--	--	--	--	--	--	--	--	50,000,000
Upstream Kinnickinnic River															
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		**2400 J**	510 U	**2700 J**	**7900 J**	520 U	500 U	4900 U	3300 U	3700 U	**1900 J**	**1000000 J**
Kinnickinnic River – Reach 1															
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**18000 J**	**18000 J**	**31000**	**94000**	810 U	**6000 J**	**77000**	**5000 J**	**8800 J**	**4700 J**	**120000000 J**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**6400 J**	**7500 J**	**13000 J**	**43000**	290 U	**3600 J**	**28000**	2300 U	**6600 J**	**2300 J**	**50000000 J**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**3600 J**	**4100 J**	**5400 J**	**21000**	140 U	**2000 J**	**12000**	**1300 J**	**2400 J**	**3200 J**	**23000000 J**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**2600**	**3000**	**5200**	**15000**	470 U	**1000 J**	**9000**	**780 J**	**2500**	**6500**	**9500000 J**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**4900 J**	**5700 J**	**9800 J**	**30000**	250 U	**2200 J**	**21000**	**2200 J**	**4400 J**	**3000 J**	**23000000 J**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**4600 J**	**5400 J**	**7000 J**	**29000**	250 U	**2300 J**	**16000**	**1800 J**	**3400 J**	**3100 J**	**32000000 J**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**5700 J**	**4500 J**	**8100 J**	**33000**	250 U	**3400 J**	**21000**	**2000 J**	**3700 J**	**3900 J**	**43000000 J**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**3400 J**	**3500 J**	**5400 J**	**16000**	360 U	**1200 J**	**9100 J**	850 U	**2400 J**	**5300 J**	**13000000 J**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**7700 J**	**6000 J**	**10000 J**	**33000**	210 U	**2200 J**	**16000 J**	700 U	**4300 J**	**1800 J**	**53000000 J**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**23000 J**	**18000 J**	**36000**	**100000**	630 U	**6500 J**	**49000**	**7000 J**	**12000 J**	**3400 J**	**90000000 J**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**7500 J**	**6800 J**	**13000**	**42000**	340 U	**3700 J**	**23000**	**2500 J**	**5000 J**	**2500 J**	**36000000 J**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**510 J**	**770 J**	**1200 J**	**3700 J**	170 U	**260 J**	**5900 J**	600 U	640 U	**650 J**	**5400000 J**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**1500 J**	**1400 J**	**2600 J**	**10000**	83 U	**750 J**	**7400**	220 U	**1300 J**	**1000 J**	**15000000 J**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**2100 J**	**2200 J**	**3500 J**	**12000**	120 U	**790 J**	**11000**	670 U	**2600 J**	**1500 J**	**9000000 J**
Kinnickinnic River – Reach 3															
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**44000**	**41000**	**62000**	**200000**	220 U	**14000**	**66000**	**8400**	**13000**	**2900 J**	**26000000 J**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**96000**	**100000**	**140000**	**440000**	270 U	**30000**	**160000**	**20000**	**30000**	**4300 J**	**54000000 J**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**64000**	**61000**	**89000**	**290000**	410 U	**21000**	**120000**	**13000 J**	**22000**	**4800 J**	**48000000 J**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**80000**	**69000**	**110000**	**370000**	600 U	**28000**	**140000**	**18000 J**	**24000**	**3400 J**	**58000000 J**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**470000**	**480000**	**740000**	**2300000**	3400 U	**160000**	**980000**	**140000**	**200000**	**39000 J**	**440000000 J**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**360000**	**360000**	**530000**	**1700000**	3200 U	**120000**	**750000**	**91000 J**	**140000**	**22000 J**	**340000000 J**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**260000**	**260000**	**420000**	**1300000**	3300 U	**80000 J**	**630000**	**69000 J**	**140000**	**35000 J**	**210000000 J**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**330000**	**310000**	**510000**	**1600000**	4900 U	**110000 J**	**700000**	**81000 J**	**130000**	**31000 J**	**430000000 J**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**2800 J**	**2600 J**	**5300 J**	**14000**	160 U	**760 J**	**21000**	**2200 J**	**7700 J**	**55000**	**6600000 J**

Table 5-6
Analytical Results for PCB Congeners

Location ID	Sample ID	Date	Depth Interval (ft bss)	CAS No.	Total PCB Congeners (U = 1/2 maximum limit) (ng/kg)	Total PCB Congeners (U = 0) (mg/kg)	Total PCB Congeners (U = 1/2 maximum limit) mg/kg
				1 mg/kg	1,000,000	1	1
				5 mg/kg	5,000,000	5	5
				50 mg/kg	50,000,000	50	50
Upstream Kinnickinnic River							
KKR-21-020	KKR-21-020-210813	8/13/2021	0 - 0.1 ft		**1100000 J**	**1**	**1.1**
Kinnickinnic River – Reach 1							
KKR-21-035	KKR-21-035-00-01-210806	8/6/2021	0 - 1 ft		**120000000 J**	**120**	**120**
KKR-21-035	KKR-21-035-01-03-210806	8/6/2021	1 - 3 ft		**50000000 J**	**50**	**50**
KKR-21-035	KKR-21-035-03-5.5-210806	8/6/2021	3 - 5.5 ft		**23000000 J**	**23**	**23**
KKR-21-035	KKR-21-035-5.5-7.8-210806	8/6/2021	5.5 - 7.8 ft		**9500000 J**	**9.5**	**9.5**
KKR-21-037	KKR-21-037-00-01-210806	8/6/2021	0 - 1 ft		**23000000 J**	**23**	**23**
KKR-21-037	KKR-21-037-01-03-210806	8/6/2021	1 - 3 ft		**32000000 J**	**32**	**32**
KKR-21-037	KKR-21-037-03-05-210806	8/6/2021	3 - 5 ft		**43000000 J**	**43**	**43**
KKR-21-037	KKR-21-037-05-6.5-210806	8/6/2021	5 - 6.5 ft		**13000000 J**	**13**	**13**
KKR-21-039	KKR-21-039-00-0.4-210807	8/7/2021	0 - 0.4 ft		**53000000 J**	**53**	**53**
KKR-21-039	KKR-21-039-0.4-1.7-210807	8/7/2021	0.4 - 1.7 ft		**90000000 J**	**90**	**90**
KKR-21-039	KKR-21-039-1.7-03-210807	8/7/2021	1.7 - 3 ft		**36000000 J**	**36**	**36**
KKR-21-046	KKR-21-046-00-1.3-210807	8/7/2021	0 - 1.3 ft		**5400000 J**	**5.4**	**5.4**
KKR-21-046	KKR-21-046-1.3-1.8-210807	8/7/2021	1.3 - 1.8 ft		**15000000 J**	**15**	**15**
KKR-21-046	KKR-21-046-1.8-04-210807	8/7/2021	1.8 - 4 ft		**9000000 J**	**9**	**9**
Kinnickinnic River – Reach 3							
KKR-21-054	KKR-21-054-0.6-0.9-210809	8/9/2021	0.6 - 0.9 ft		**26000000 J**	**26**	**26**
KKR-21-055A	KKR-21-55A-0.5-1.25-210810	8/10/2021	0.5 - 1.25 ft		**54000000 J**	**54**	**54**
KKR-21-055	KKR-21-055-00-0.85-210808	8/8/2021	0 - 0.85 ft		**48000000 J**	**48**	**48**
KKR-21-056	KKR-21-056-00-01-210809	8/9/2021	0 - 1 ft		**58000000 J**	**58**	**58**
KKR-21-056	KKR-21-056-01-2.9-210809	8/9/2021	1 - 2.9 ft		**450000000 J**	**440**	**450**
KKR-21-056	FD-202108091055	8/9/2021	1 - 2.9 ft		**340000000 J**	**340**	**340**
KKR-21-057	KKR-21-057-00-01-210808	8/8/2021	0 - 1 ft		**210000000 J**	**210**	**210**
KKR-21-057	KKR-21-057-01-03-210808	8/8/2021	1 - 3 ft		**430000000 J**	**430**	**430**
KKR-21-057	KKR-21-057-03-4.3-210808	8/8/2021	3 - 4.3 ft		**6700000 J**	**6.6**	**6.7**

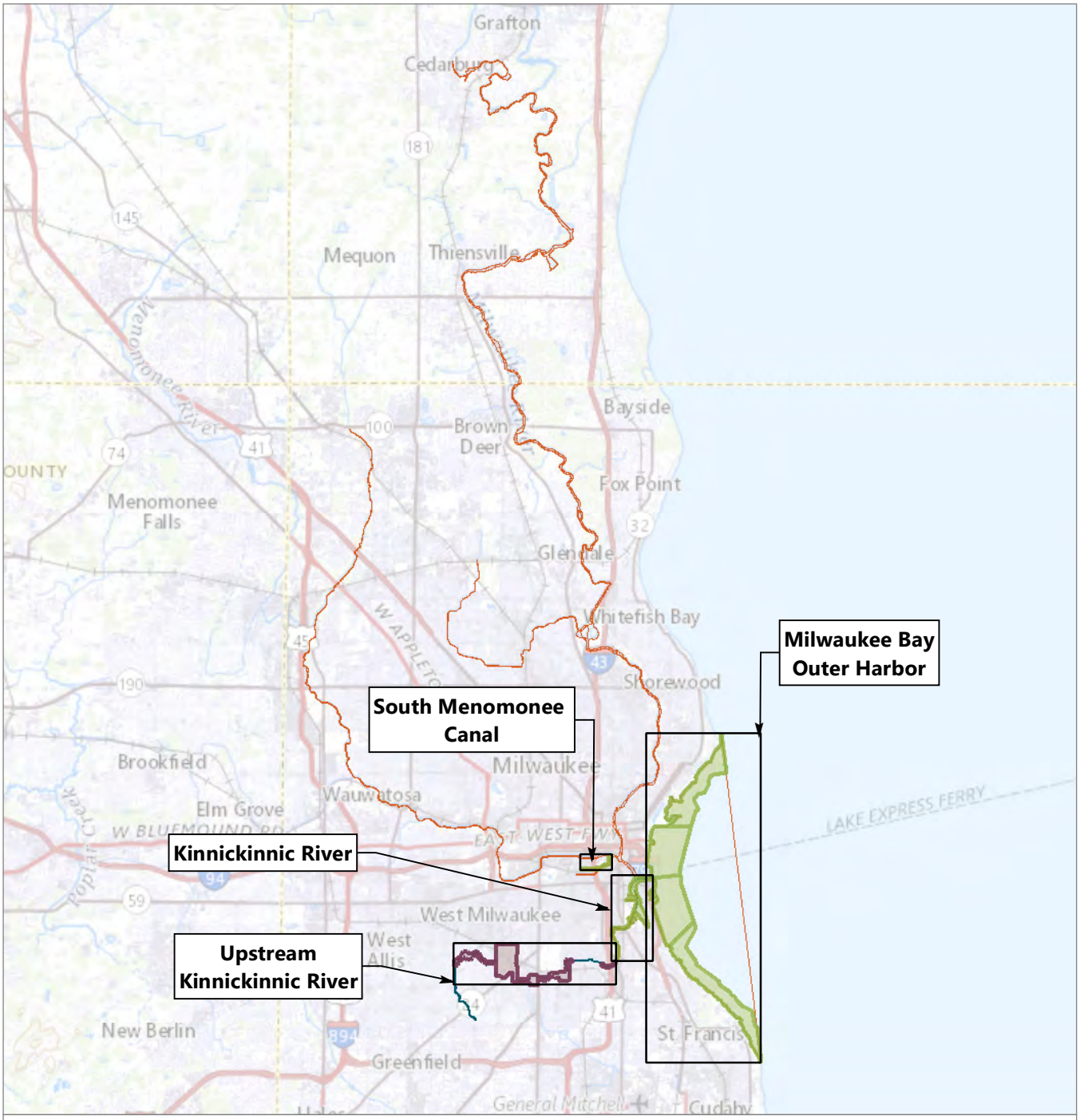
Table 5-6
Analytical Results for PCB Congeners

Notes:
1. Validated results were screened against the 1 mg/kg, 5 mg/kg, and 50 mg/kg as provided by DNR.
2. Sample intervals defined as native material based on visual observations are shown in italics.

Screening Criteria:
Detected concentration is greater than 1 mg/kg
Detected concentration is greater than 5 mg/kg
Detected concentration is greater than 50 mg/kg
Bold: detected result

Abbreviations:
CAS: Chemical Abstracts System
DNR: Wisconsin Department of Natural Resources
FD: field duplicate sample
ft bss: feet below sediment surface
J: indicates an estimated value
mg/kg: milligrams per kilogram
ng/kg: nanograms per kilogram
U: indicates the compound analyzed for but not detected above detection limit
UJ: indicates the compound or analyte was analyzed for but not detected and the specified limit reported is estimated

Figures



LEGEND:

- Milwaukee Estuary AOC
- South Menomonee Canal, Kinnickinnic River, and Milwaukee Bay Project Area
- Upstream Kinnickinnic River

NOTES:
1. Basemap: Esri, USGS The National Map

0 8
Miles

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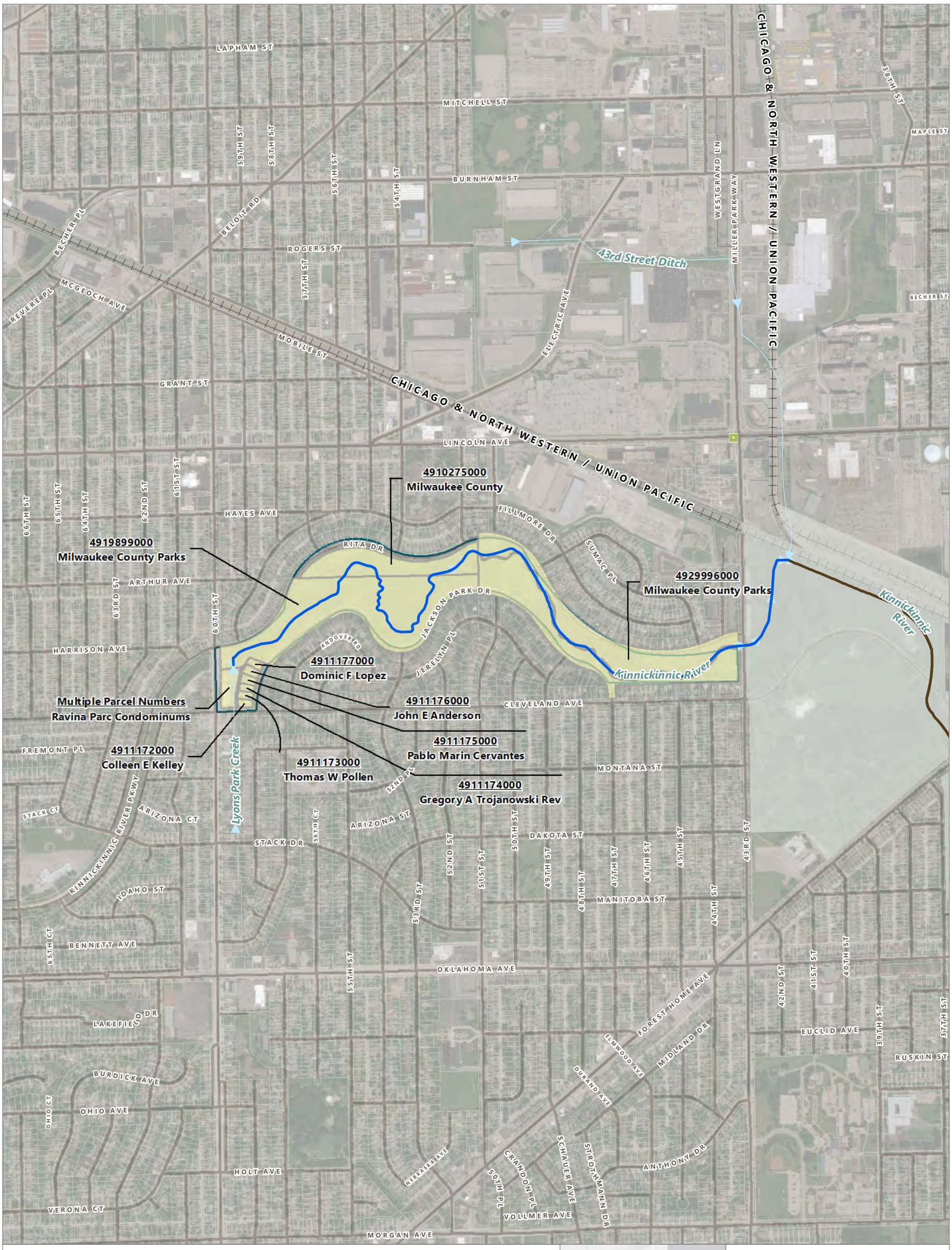
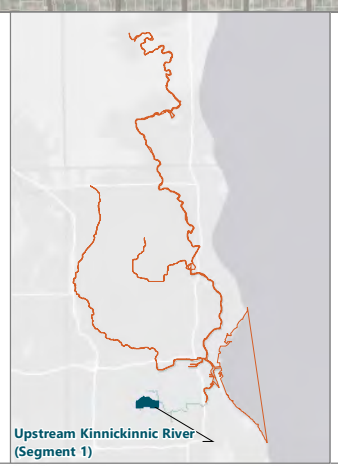
Figure 1-1
Site Location Map
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream Kinnickinnic River (Segment 1)
- Parcel Boundary (adjacent)
- Concrete Channel
- Natural Channel
- Flow direction (downstream)
- Sanitary Sewer Overflow
- Street Centerlines
- Railroad Lines



NOTES:

1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Upstream KKR Segment 1 includes the Kinnickinnic River upstream from bridge at South 43rd Street to the bridge at South 60th Street.

0 1,850

Feet

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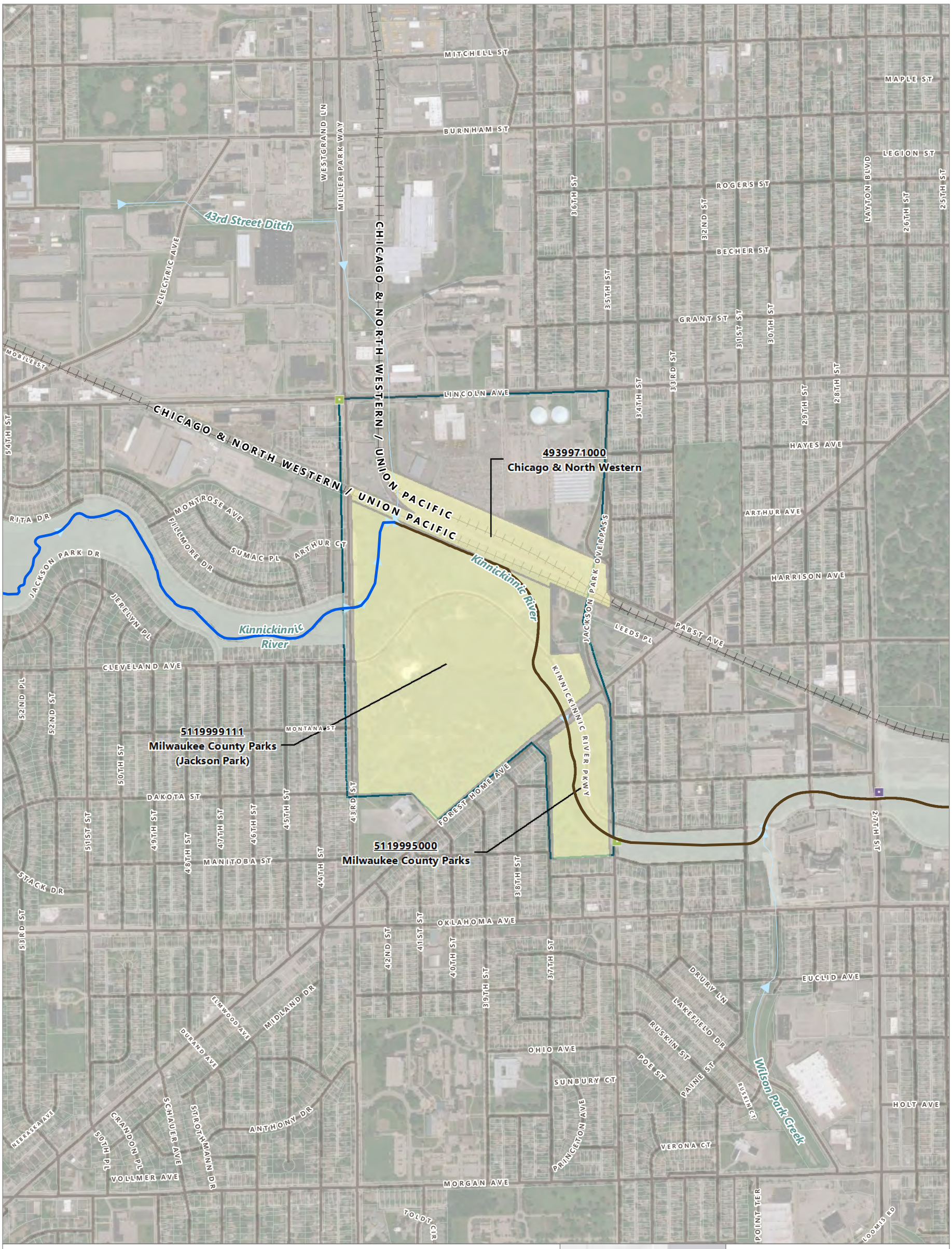
Figure 2-1

Site Description - Upstream Kinnickinnic River (Segment 1)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream Kinnickinnic River (Segment 2)
- Parcel Boundary (adjacent)
- Concrete Channel
- Natural Channel
- Flow direction (downstream)
- Combined Sewer Overflow
- Sanitary Sewer Overflow
- Street Centerlines
- Railroad Lines

NOTES:

1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Upstream KKR Segment 2 includes the Kinnickinnic River upstream through Jackson Park from the bridge at South 35th Street to the bridge at South 43rd Street as well as the 43rd Street Ditch north of Jackson Park.

0 1,850

Feet

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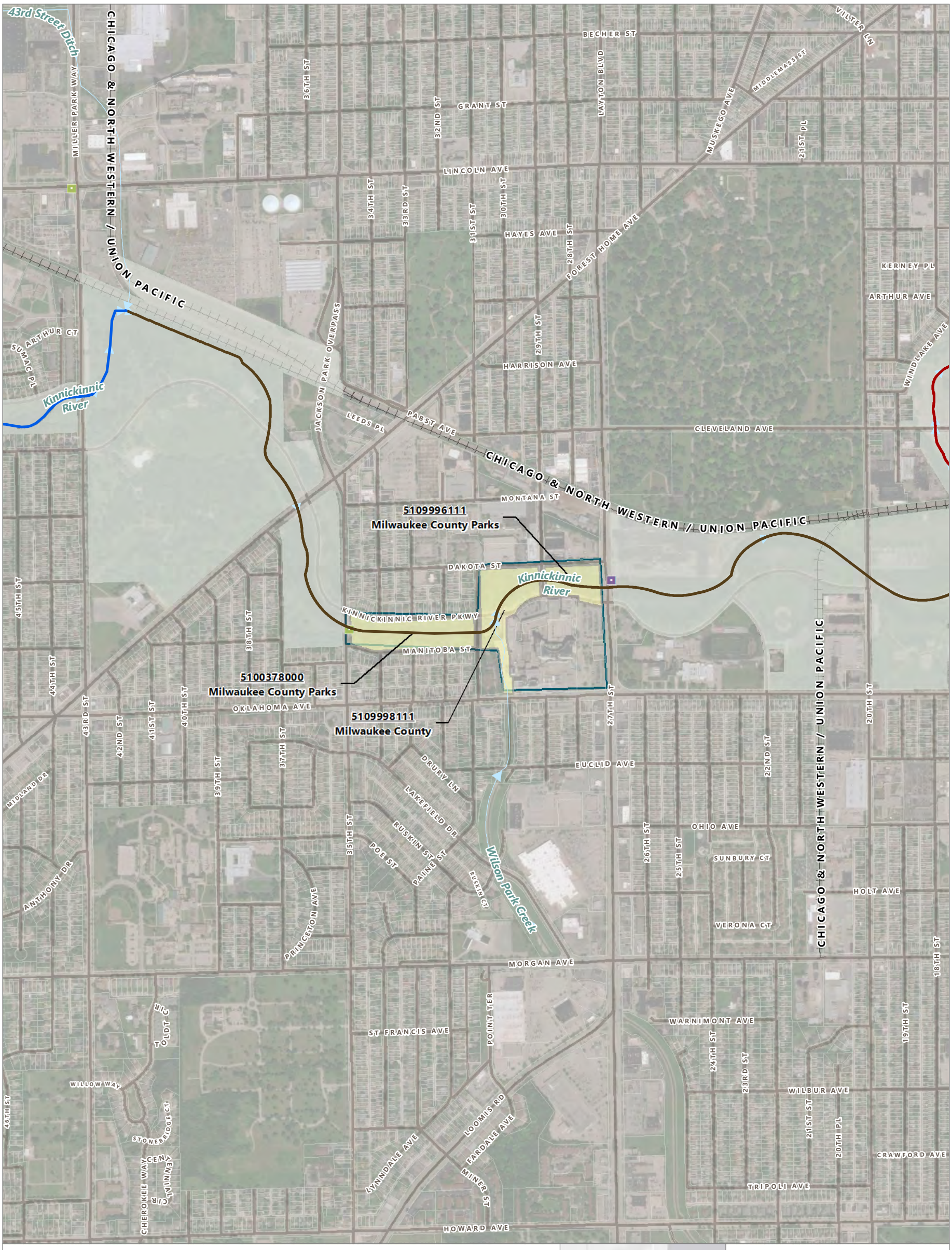
Figure 2-2

Site Description - Upstream Kinnickinnic River (Segment 2)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream Kinnickinnic River (Segment 3)
- Parcel Boundary (adjacent)
- Concrete Channel
- Natural Channel
- Riprap Channel
- Flow direction (downstream)
- Combined Sewer Overflow
- Sanitary Sewer Overflow
- Street Centerlines
- Railroad Lines

NOTES:

1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Upstream KKR Segment 3 includes the Upstream Kinnickinnic River upstream from the bridge at South 27th Avenue to the bridge at South 35th Street as well as the confluence of Wilson Park Creek.

0 1,850

Feet

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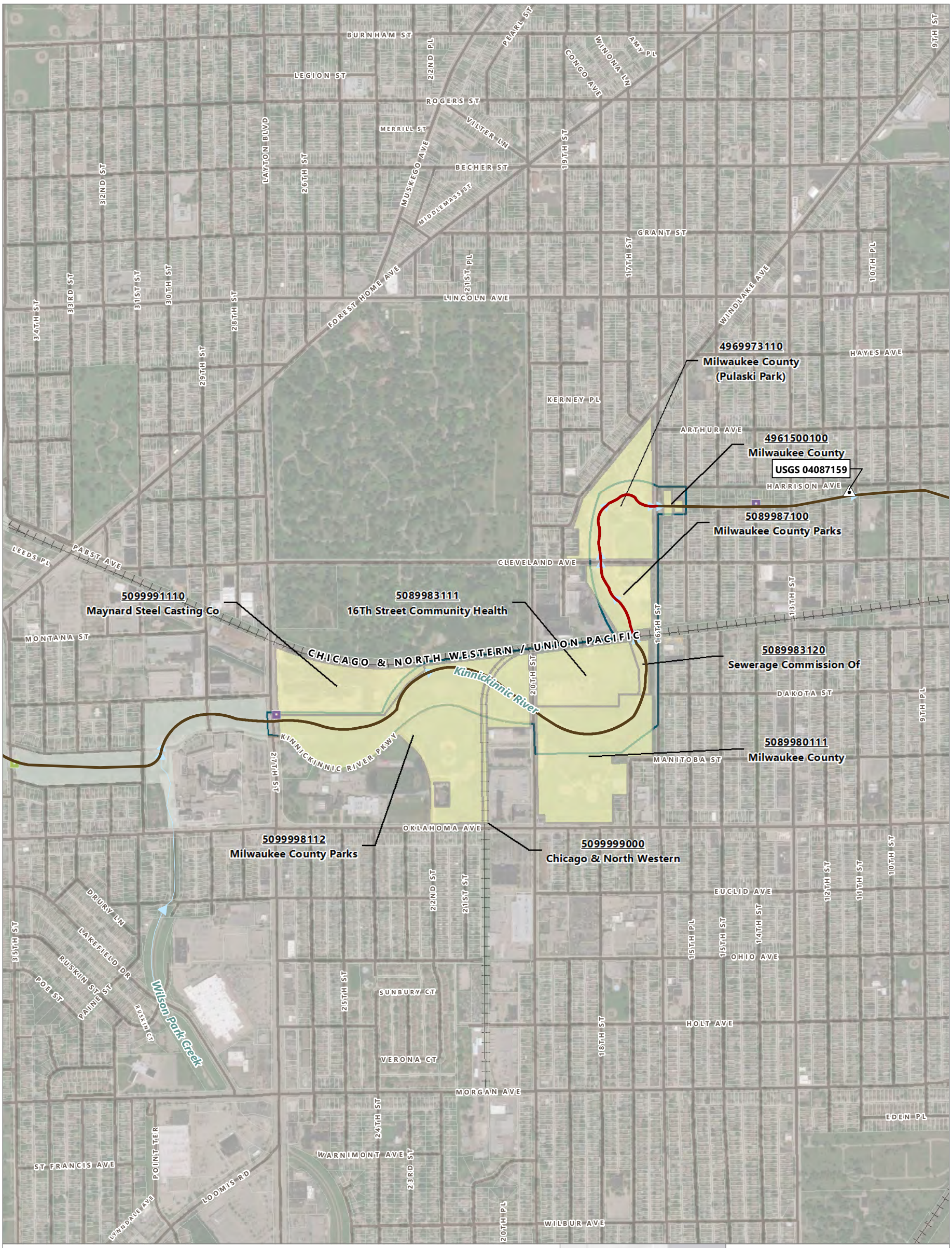
Figure 2-3

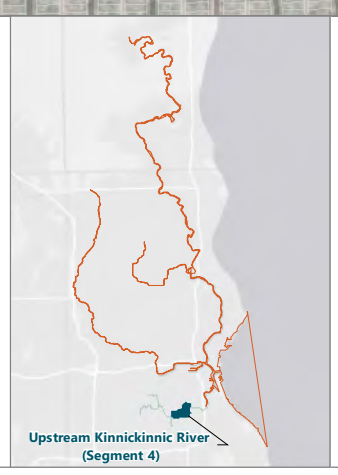
Site Description - Upstream Kinnickinnic River (Segment 3)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream Kinnickinnic River (Segment 4)
- Parcel Boundary (adjacent)
- Concrete Channel
- Riprap Channel
- Flow direction (downstream)
- Gauge Station
- Combined Sewer Overflow
- Sanitary Sewer Overflow
- Street Centerlines
- Railroad Lines



NOTES:

1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Upstream KKR Segment 4 includes the Kinnickinnic River upstream through Pulaski Park from the bridge at South 15th Place to the bridge at South 27th Street.

0 1,850

Feet

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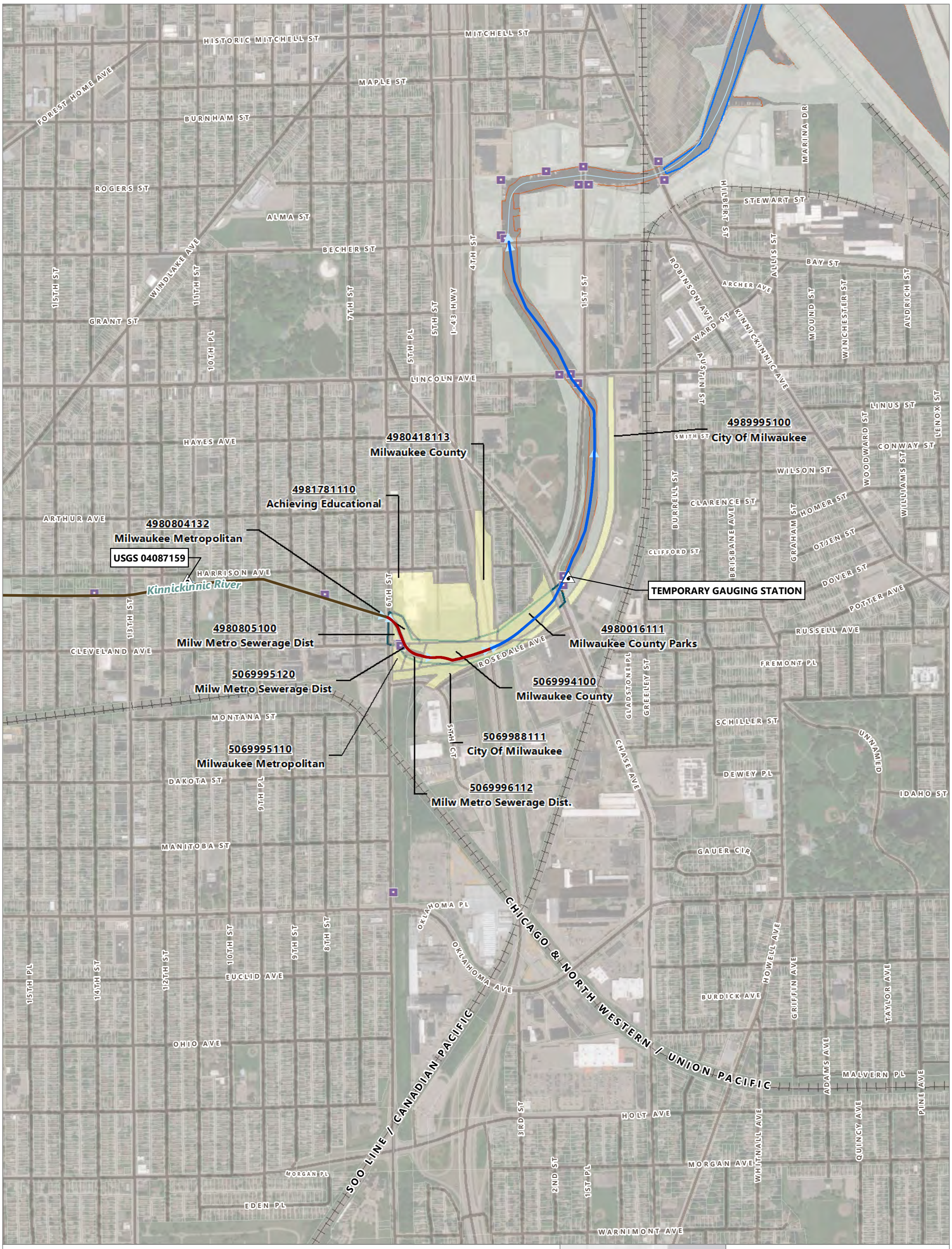
Figure 2-4

Site Description - Upstream Kinnickinnic River (Segment 4)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- Upstream Kinnickinnic River (Segment 5)
- Parcel Boundary (adjacent)
- Milwaukee Solvay Coke and Gas Site
- Concrete Channel
- Natural Channel
- Riprap Channel
- Flow direction (downstream)
- Gauge Station
- Federal Navigation Channel
- Combined Sewer Overflow
- Street Centerlines
- Railroad Lines

NOTES:

1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Upstream KKR Segment 5 includes the Kinnickinnic River upstream from the bridge at South Chase Avenue to the bridge at South 6th Street.

0 1,850

Feet

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Figure 2-5

Site Description - Upstream Kinnickinnic River (Segment 5)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

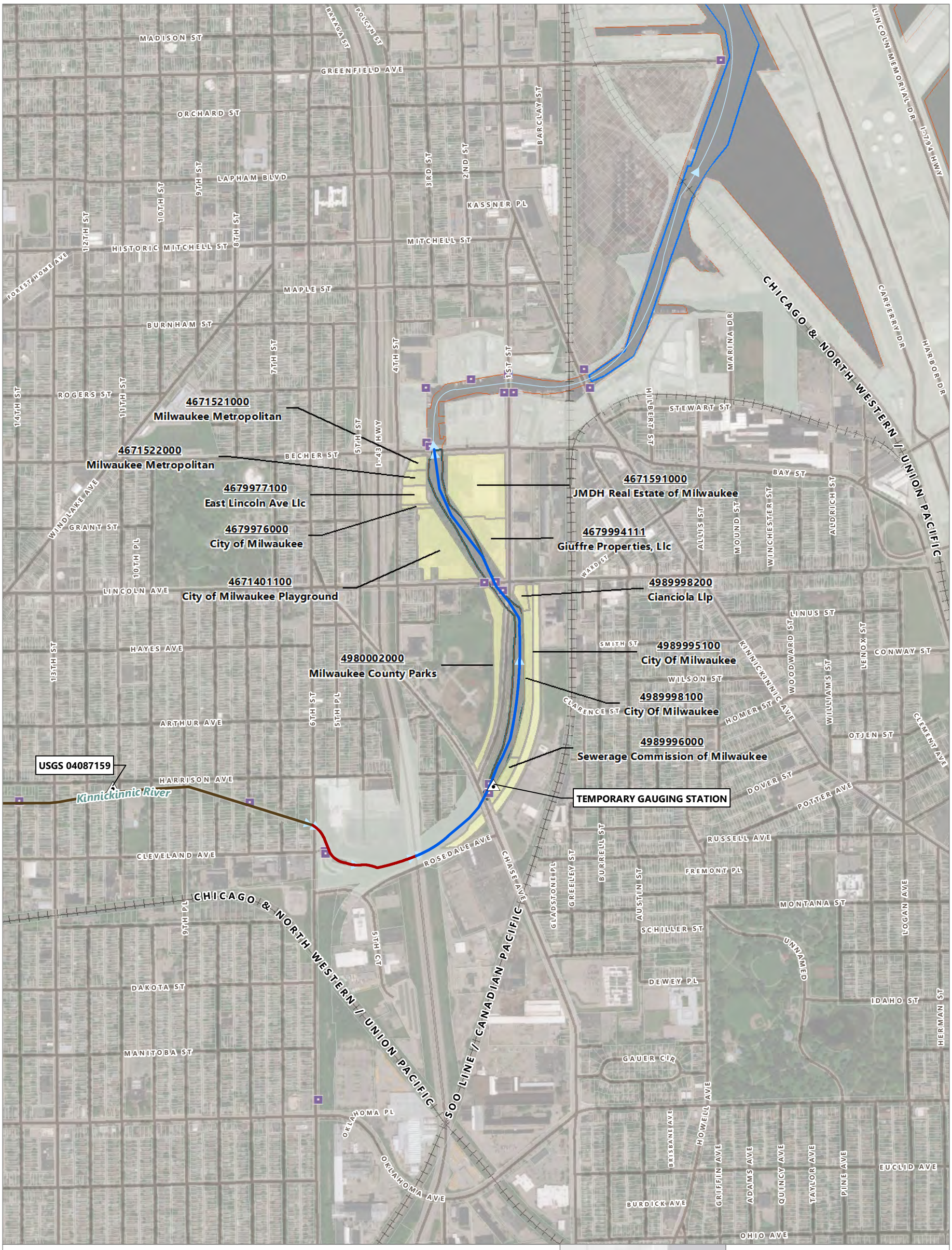

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Figure 2-6
Site Description - Kinnickinnic River (Reach 1)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

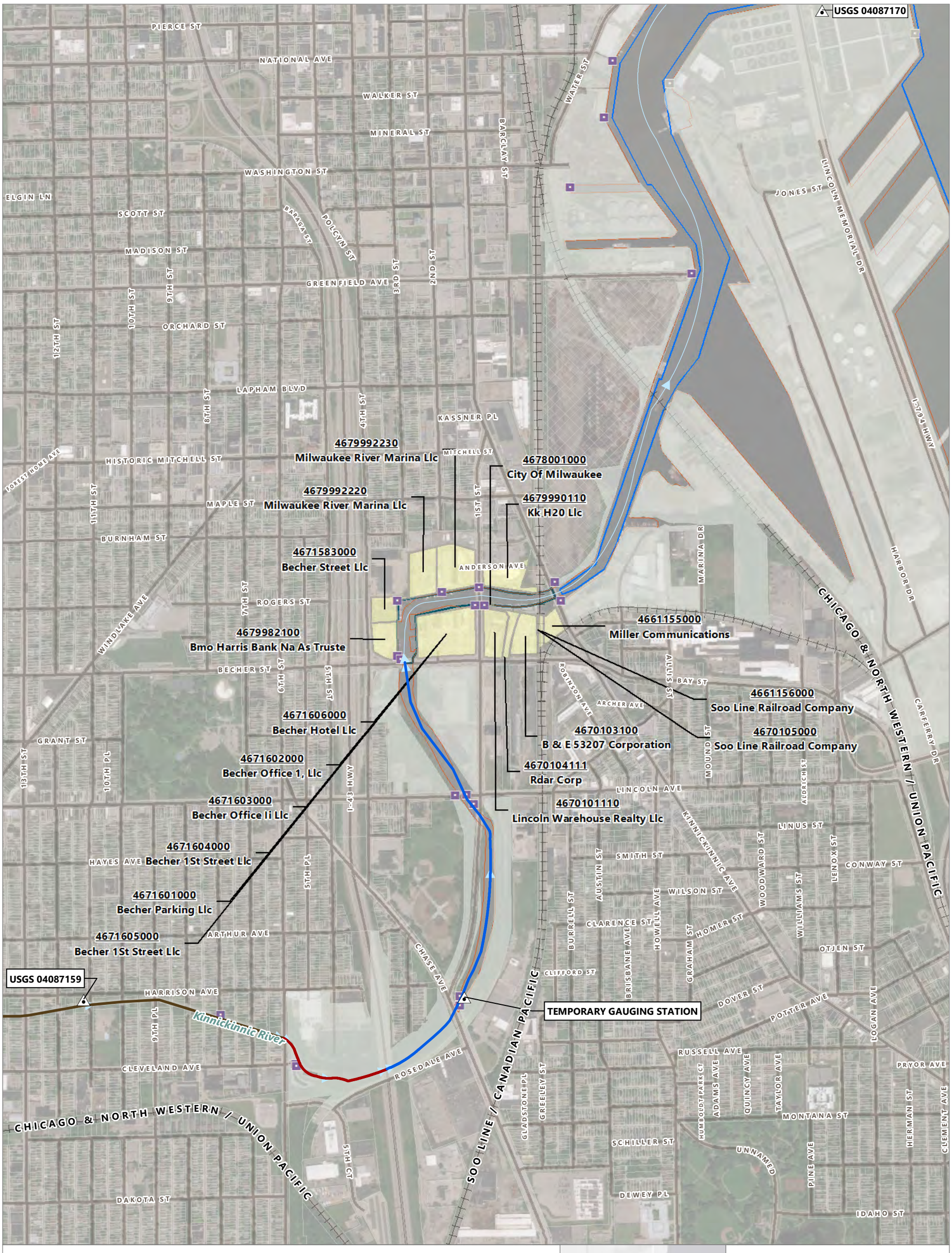

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Figure 2-7
Site Description - Kinnickinnic River (Reach 2)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

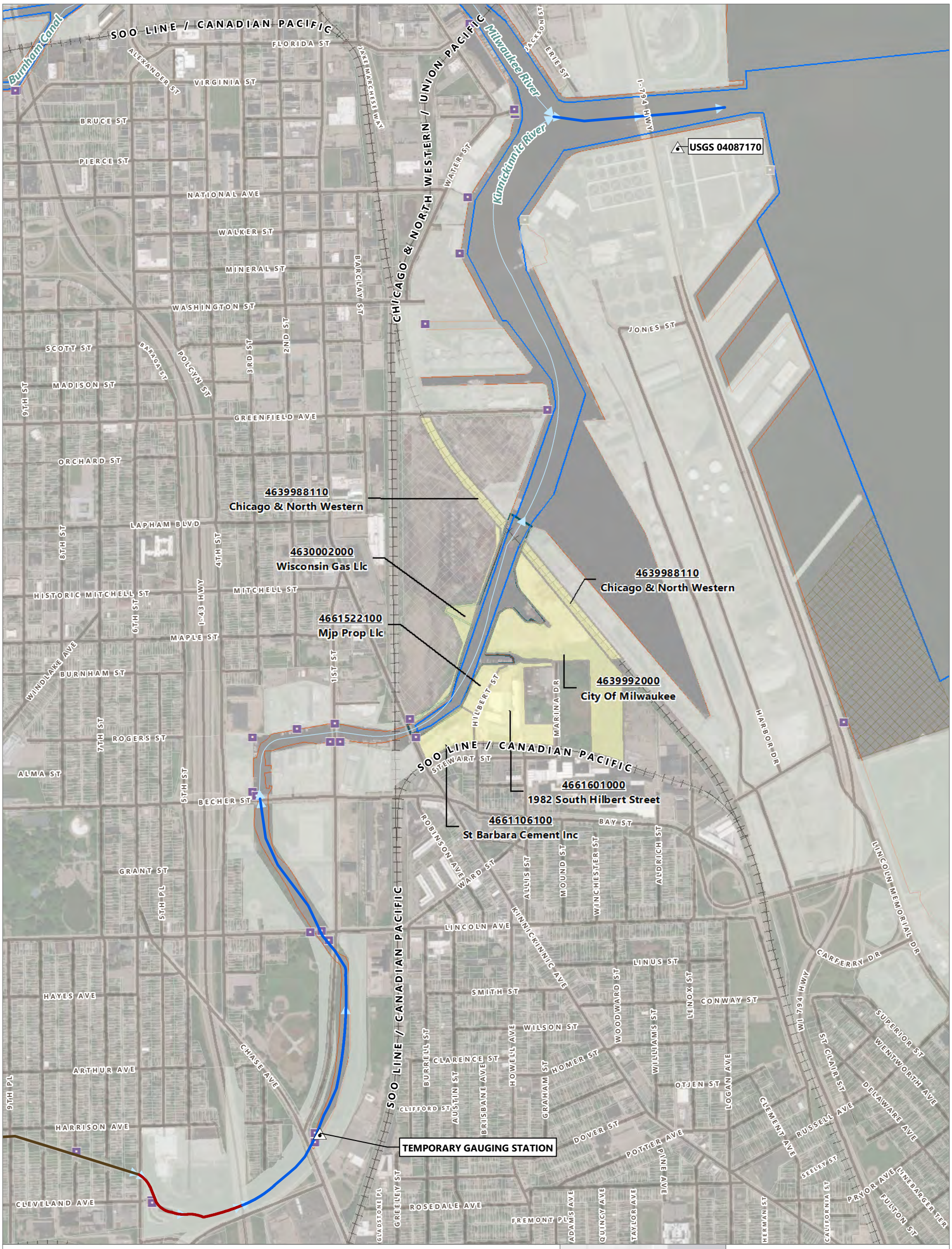

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Figure 2-8
Site Description - Kinnickinnic River (Reach 3)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

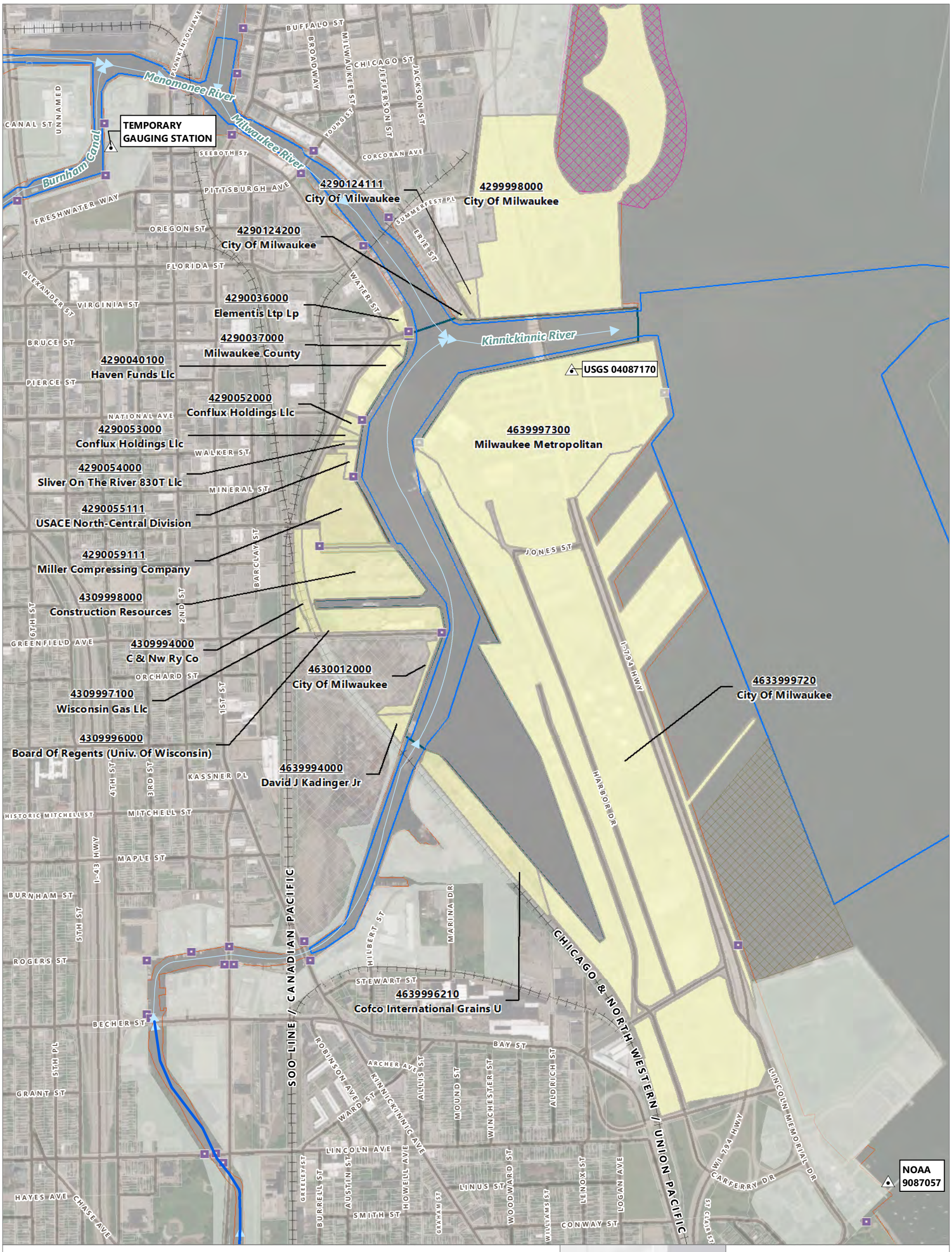

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Figure 2-9
Site Description - Kinnickinnic River (Reach 4)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

LEGEND:

- Milwaukee Estuary AOC
- Milwaukee Bay Nearshore and McKinley Marina
- Parcel Boundary (adjacent)
- McKinley Marina
- Flow direction (downstream)
- Combined Sewer Overflow
- Street Centerlines

NOTES:
1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Reach 5 includes Milwaukee Bay Nearshore and McKinley Marina.

0 1,850
Feet

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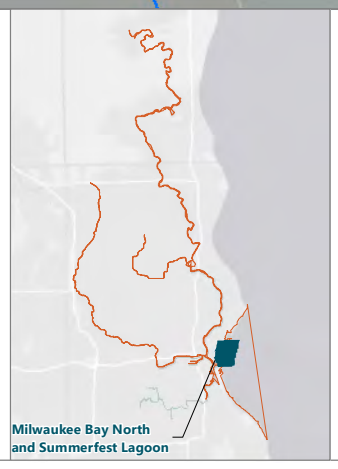
Figure 2-10
Site Description - Milwaukee Bay Nearshore and McKinley Marina
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

LEGEND:

- Milwaukee Estuary AOC
- Milwaukee Bay North and Summerfest Lagoon
- Parcel Boundary (adjacent)
- McKinley Marina
- Summerfest Lagoon
- Natural Channel
- Flow direction (downstream)
- Gauge Station
- Federal Navigation Channel
- Unspecified Outfall Location
- Combined Sewer Overflow
- Sanitary Sewer Overflow
- Street Centerlines
- Railroad Lines



NOTES:

1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Reach 6 includes Milwaukee Bay Nearshore and Summerfest Lagoon (Maritime Basin and Quite Water Basin)..

0 1,850

Feet

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Figure 2-11

Site Description - Milwaukee Bay North and Summerfest Lagoon

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

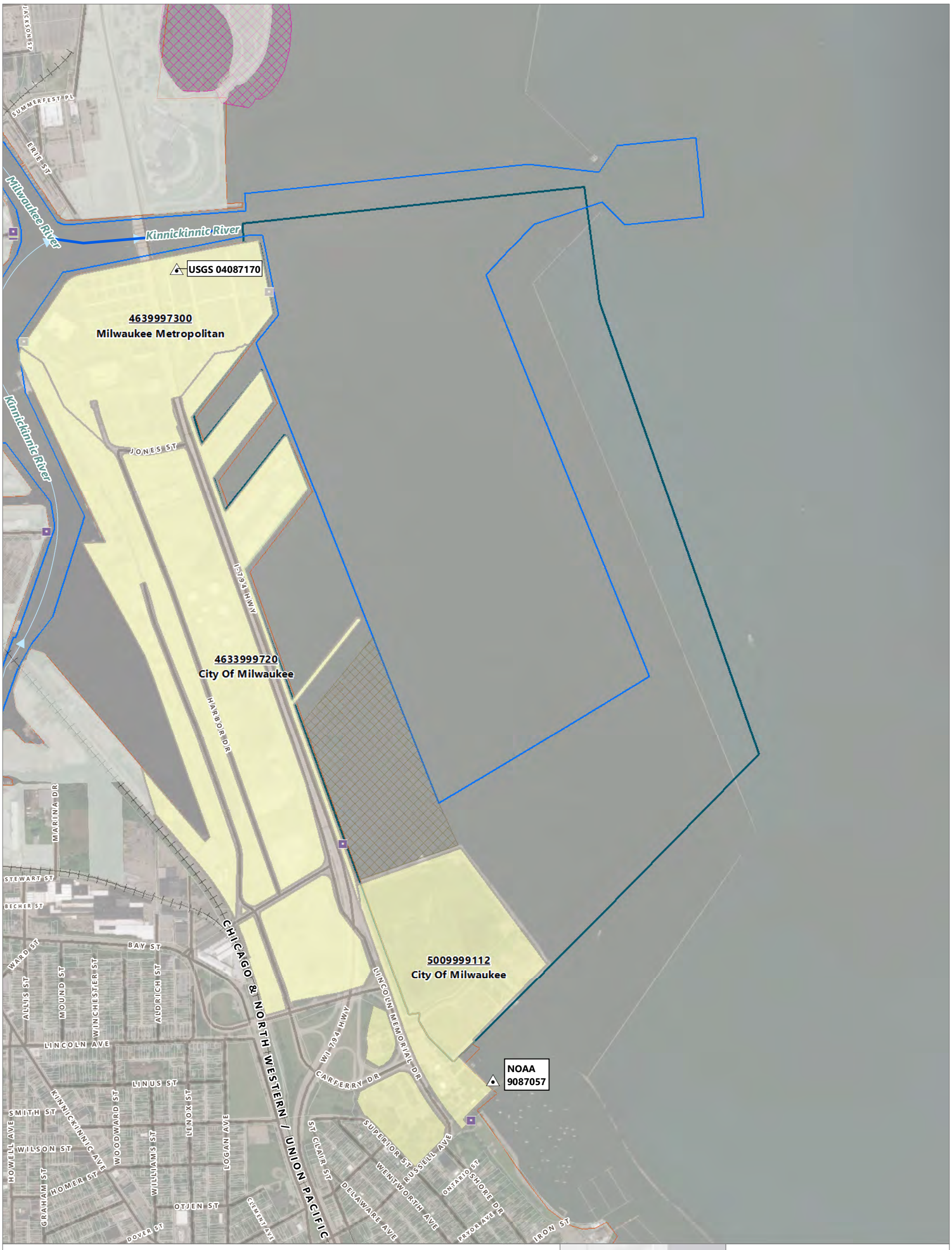

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Figure 2-12

Site Description - Milwaukee Bay South Adjacent to Port Milwaukee

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

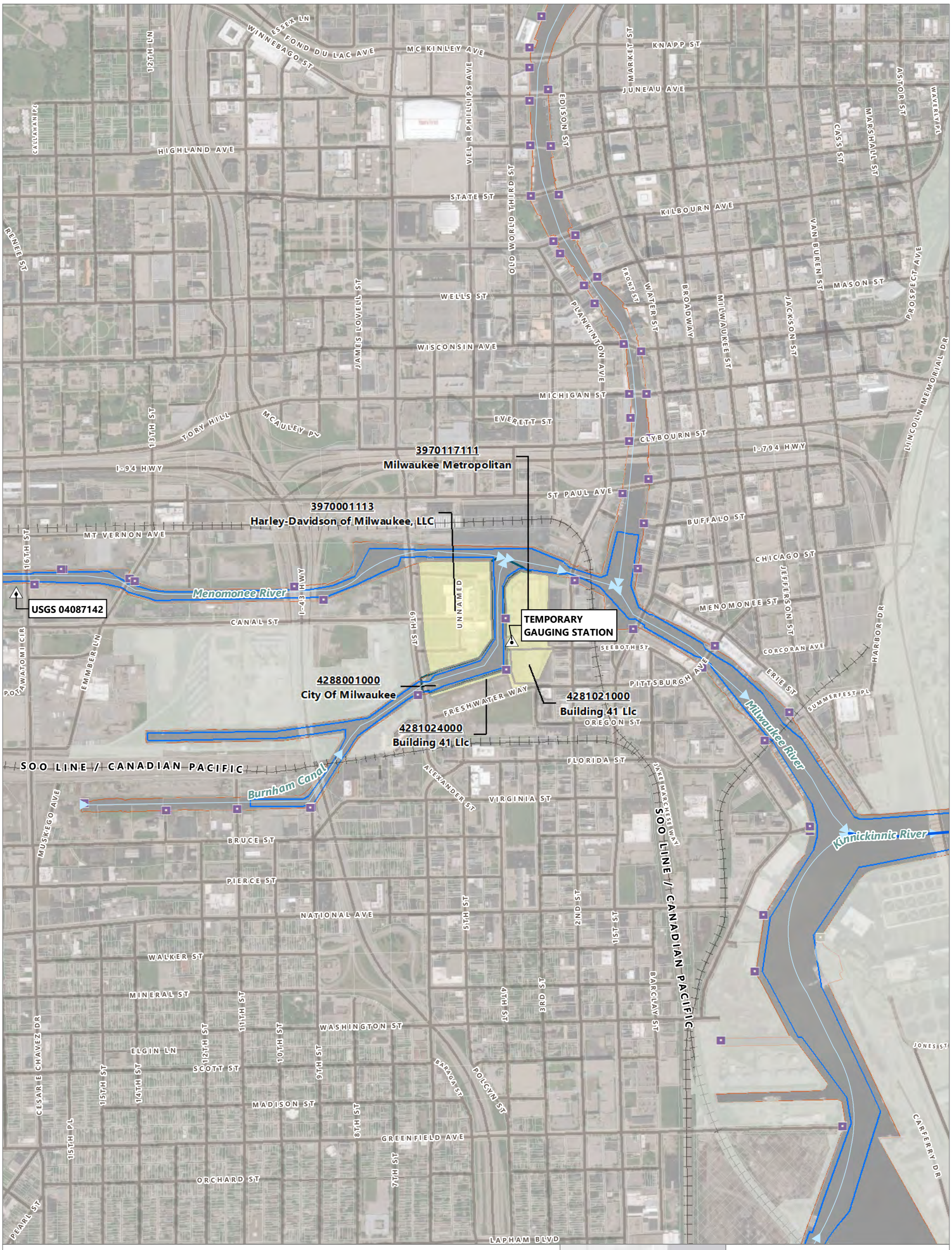

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Figure 2-13
Site Description - South Menomonee Canal – East
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

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Figure 2-14
Site Description - South Menomonee Canal – Middle
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

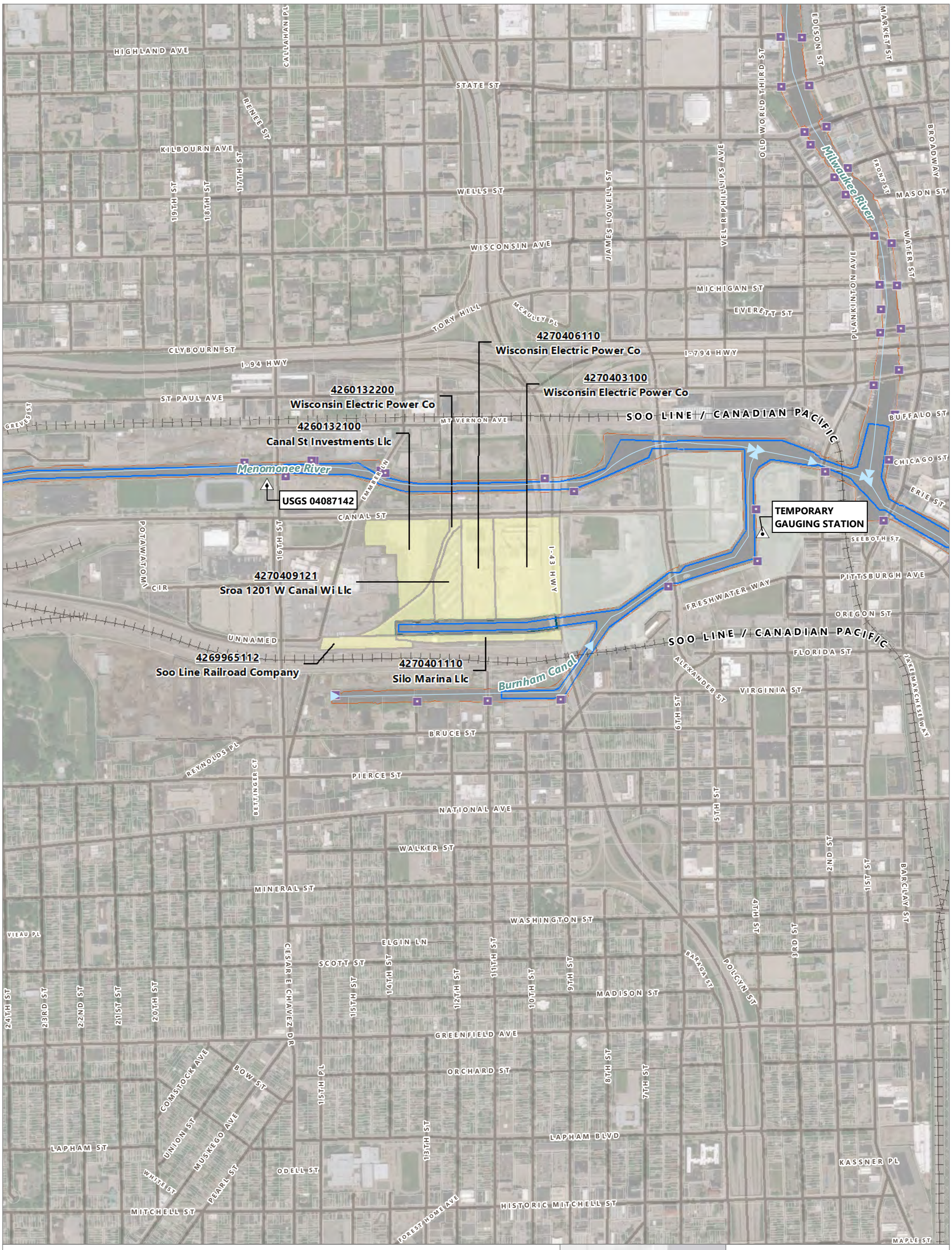

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Figure 2-15
Site Description - South Menomonee Canal – West
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

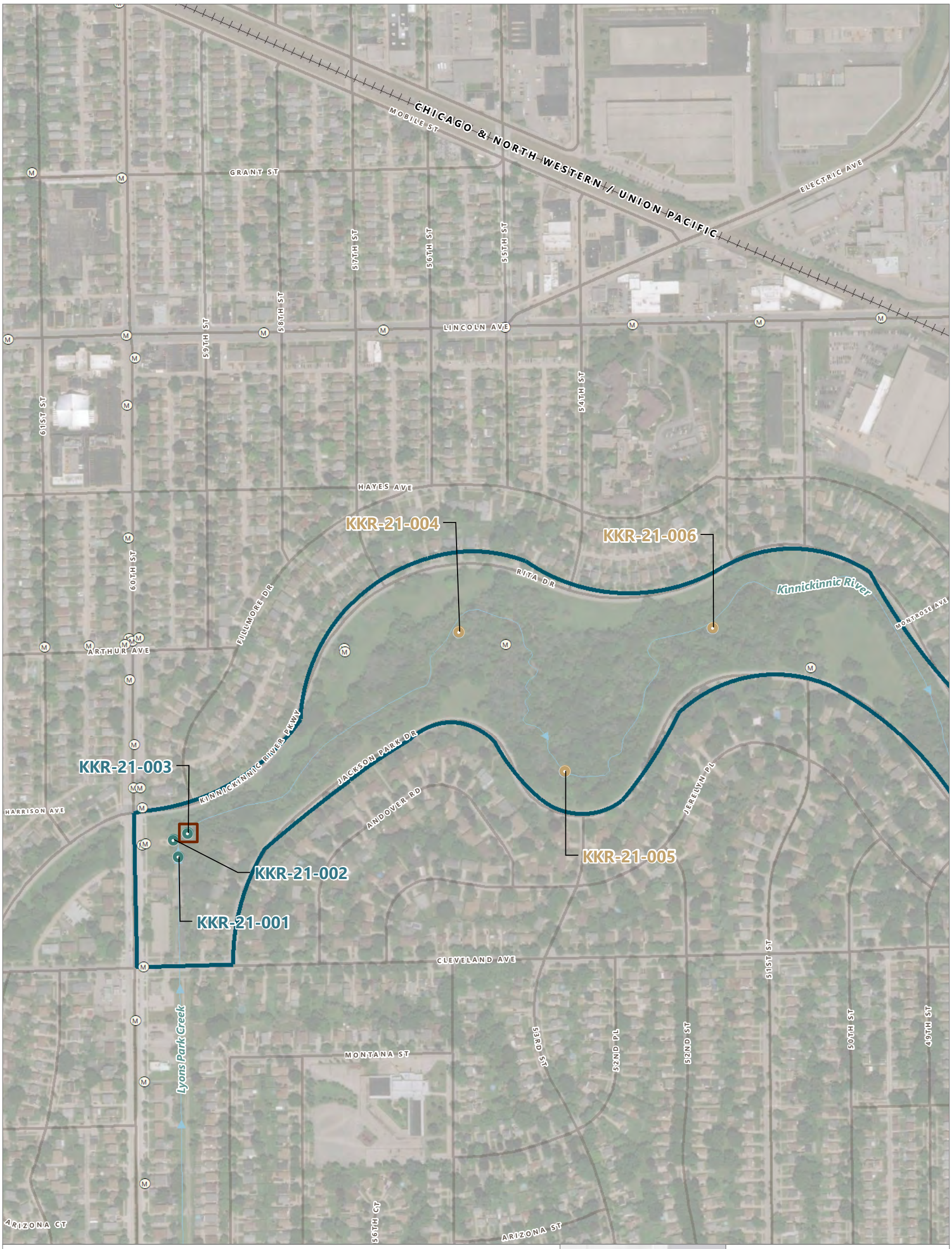

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Figure 3-1
Sampling Locations in Upstream Kinnickinnic River (Segment 1)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

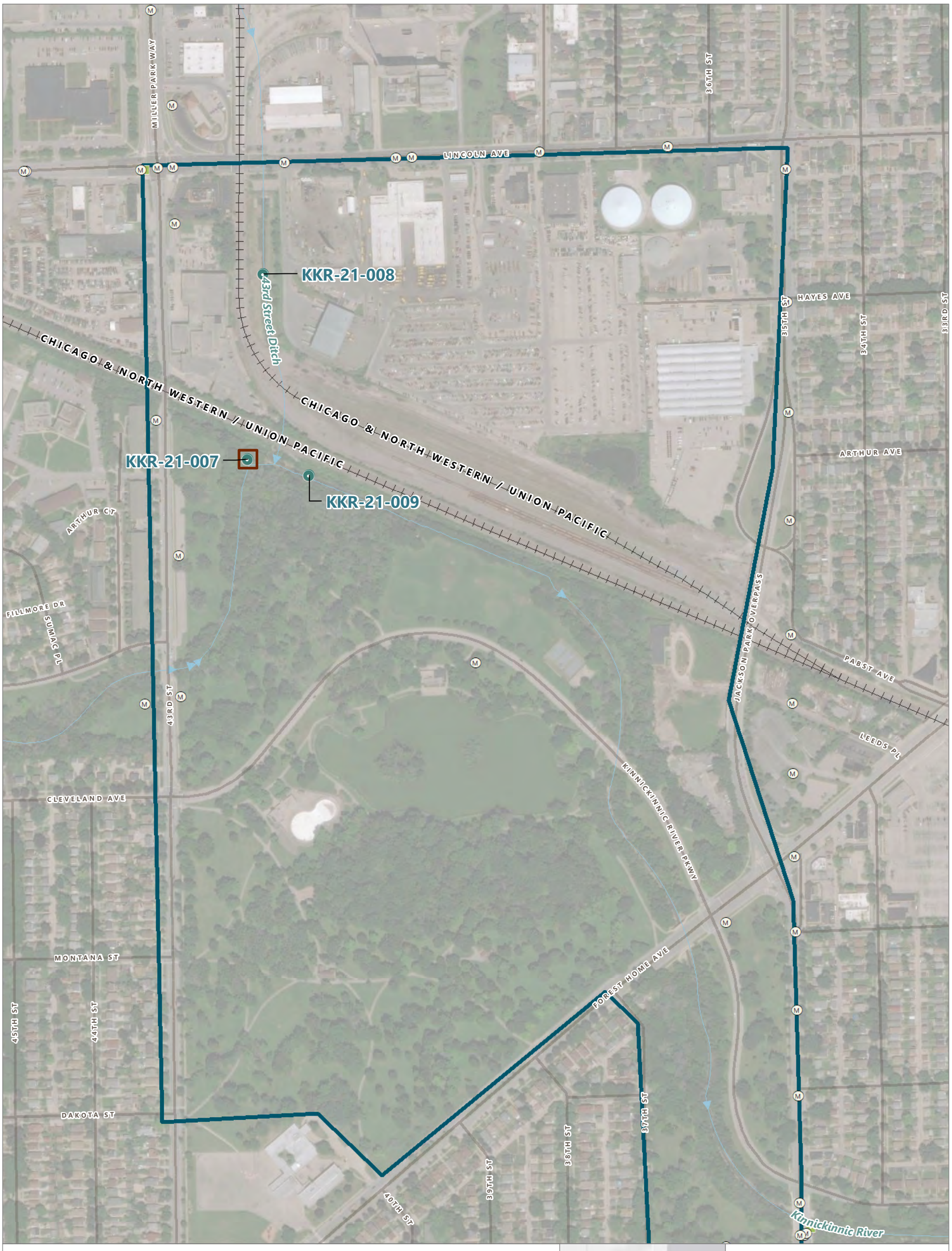

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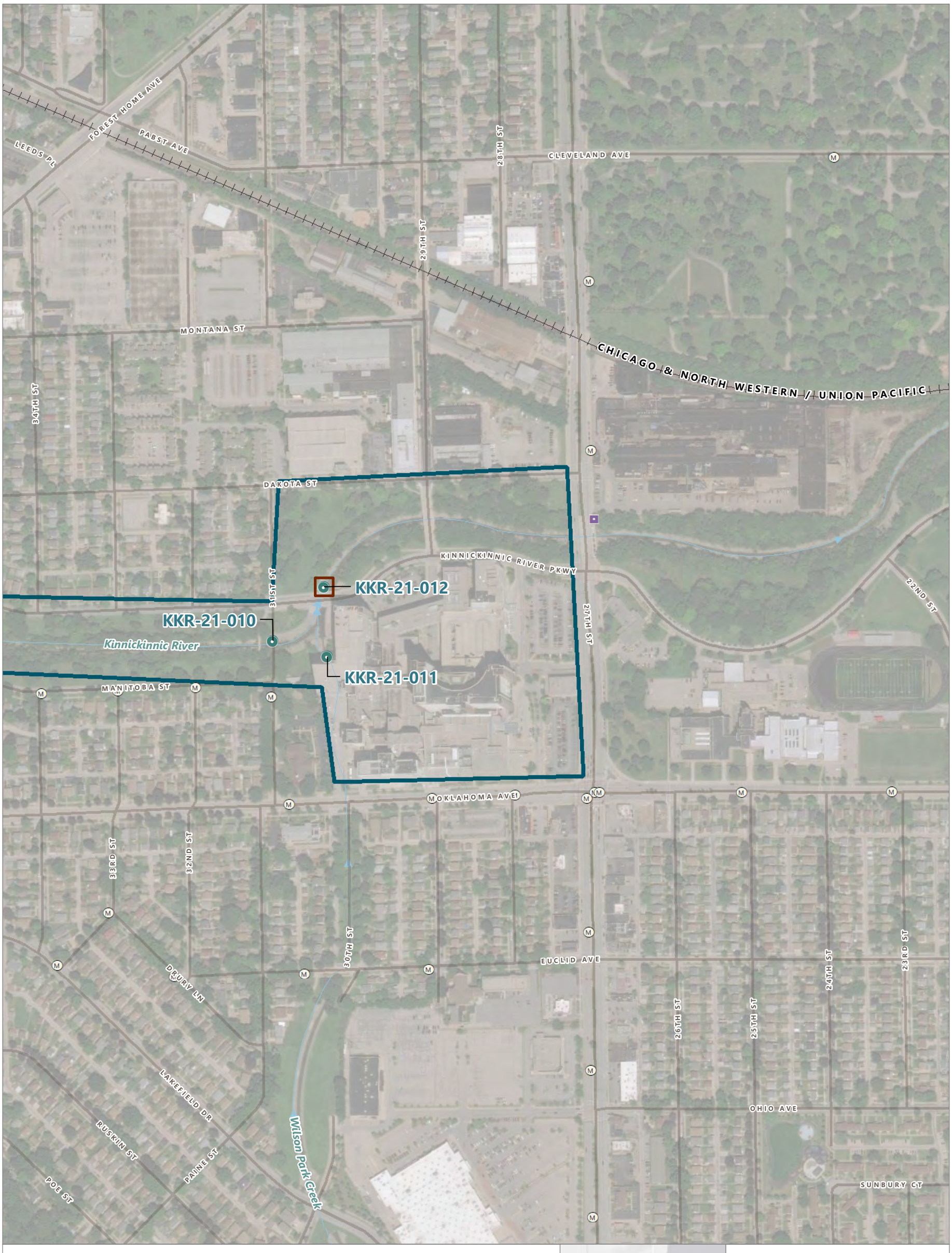
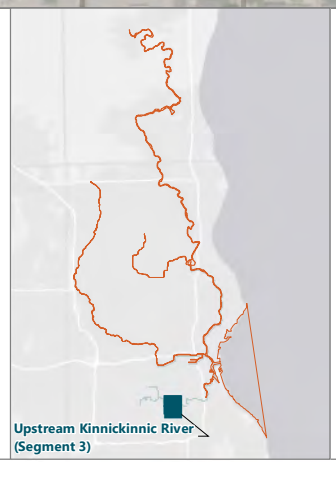
Figure 3-2
Sampling Locations in Upstream Kinnickinnic River (Segment 2)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream KKR (Segment 3)
- Flow direction (downstream)
- Combined Sewer Overflow
- MMSD Manhole
- Surface Sediment (n=3)
- Geotechnical (n=1)



NOTES:

1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Upstream Kinnickinnic River Segment 3 includes the Upstream Kinnickinnic River upstream from the bridge at South 27th Avenue to the bridge at South 35th Street as well as the confluence of Wilson Park Creek.

0 800
Feet

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Figure 3-3
Sampling Locations in Upstream Kinnickinnic River (Segment 3)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

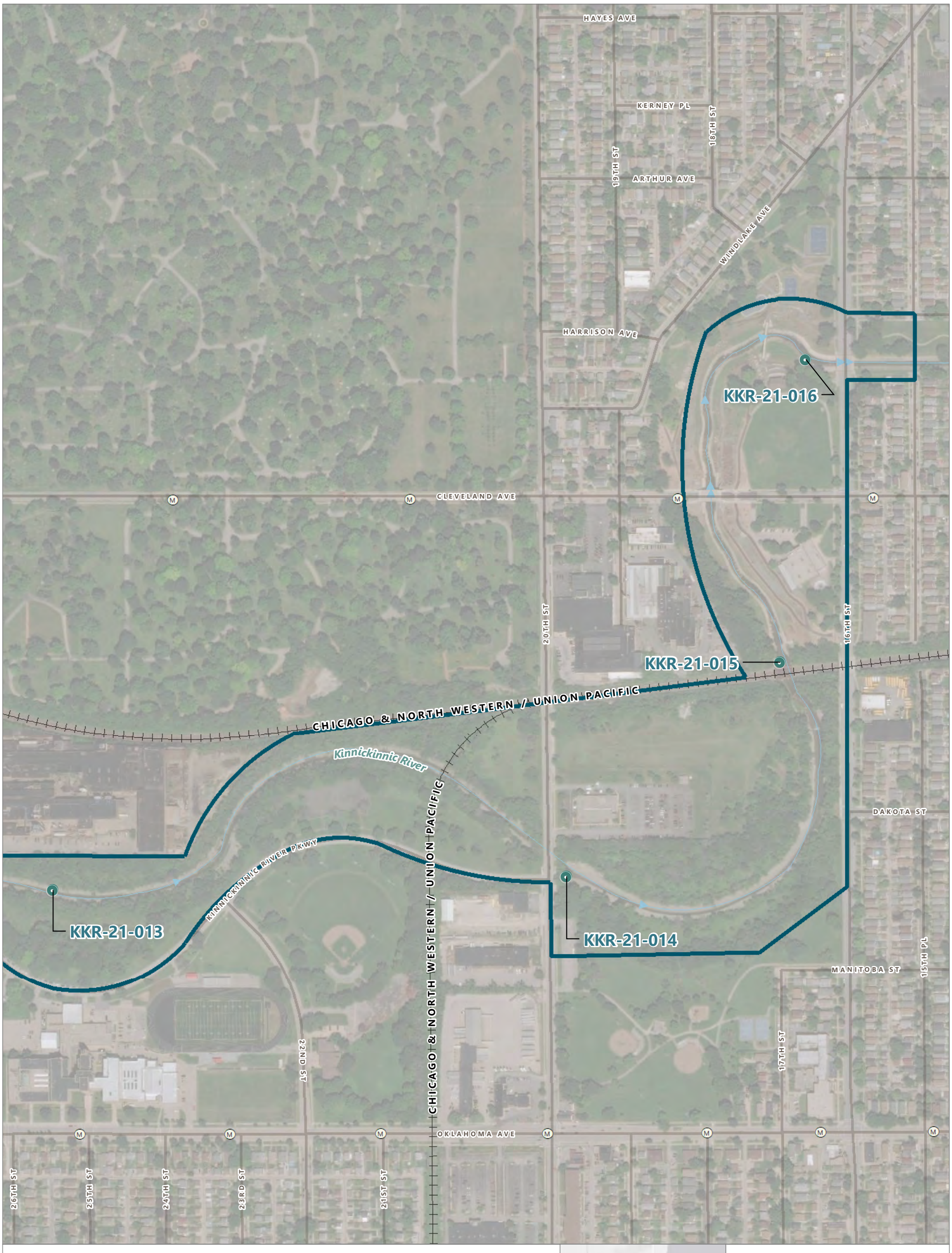

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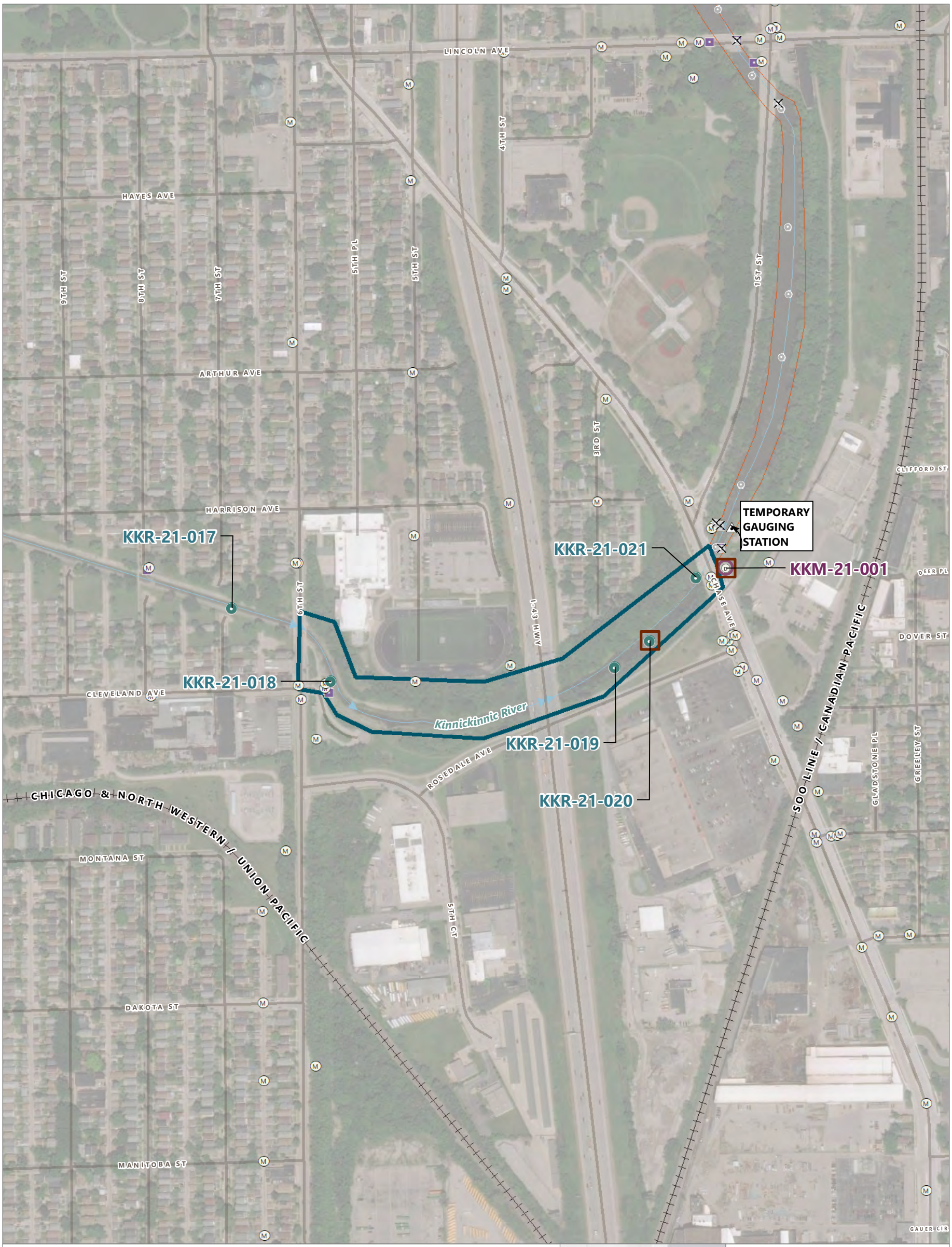
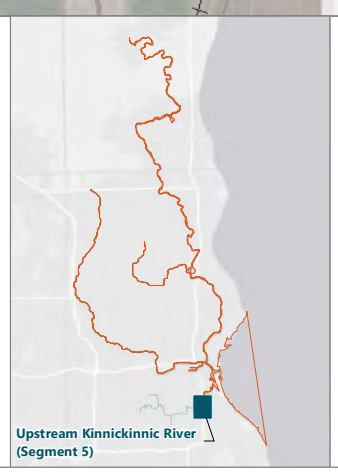
Figure 3-4
Sampling Locations in Upstream Kinnickinnic River (Segment 4)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- Upstream KKR (Segment 5)
- Flow direction (downstream)
- Gauge Station
- Combined Sewer Overflow
- MMSD Manhole
- Surface Sediment (n=5)
- Diversion Sediment (n=1)
- Geotechnical (n=2)
- Abandoned Sample Location (n=5)
- Previously Sampled Location



NOTES:

1. Street and railroad names are from Milwaukee County GIS and Land Information, refreshed 2/12/2021.
2. Upstream Kinnickinnic River Segment 5 includes the Kinnickinnic River upstream from the bridge at South Chase Avenue to the bridge at South 6th Street.

0 800

Feet

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Figure 3-5
Sampling Locations in Upstream Kinnickinnic River (Segment 5)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

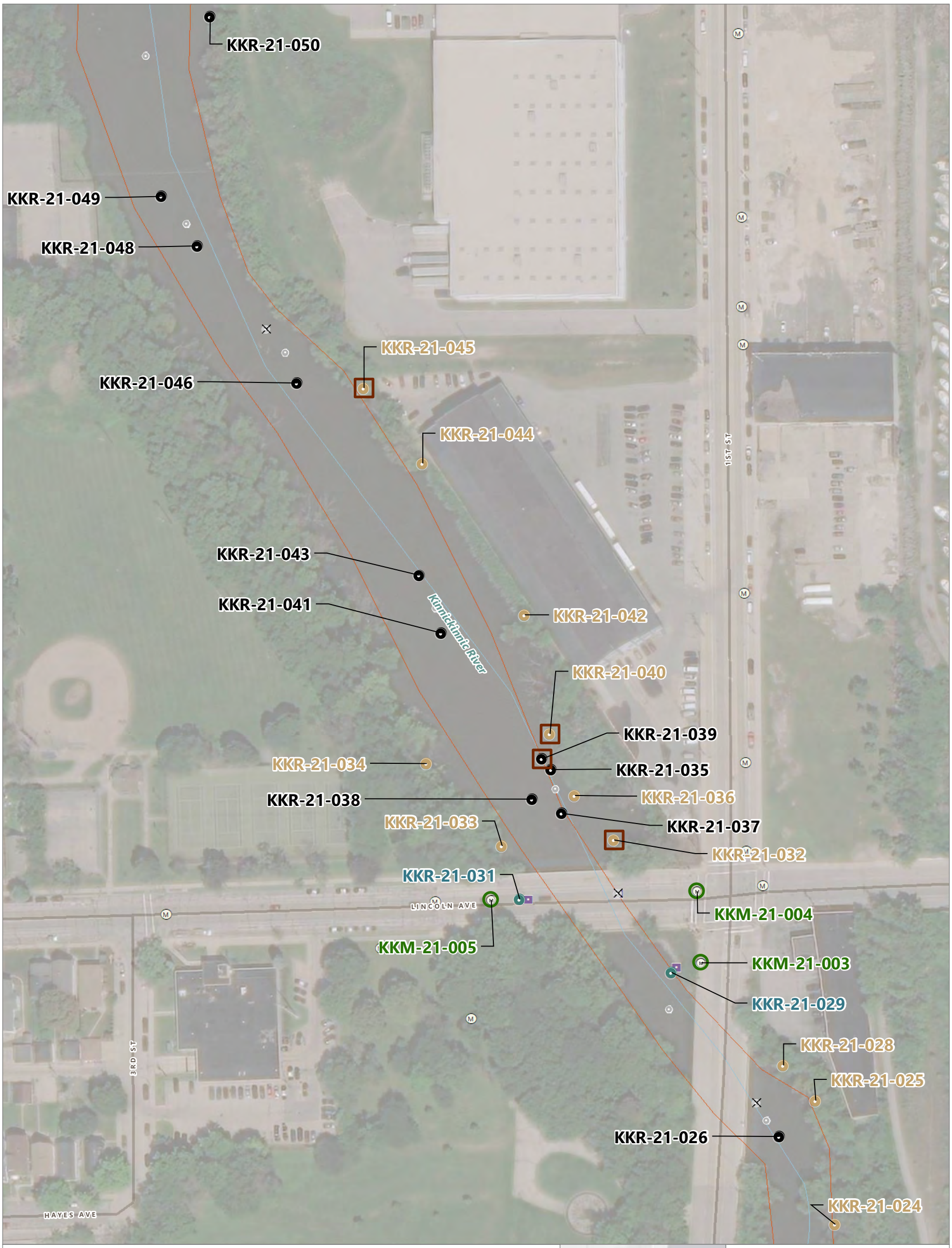

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Figure 3-6
Sampling Locations in Kinnickinnic River (Reach 1)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

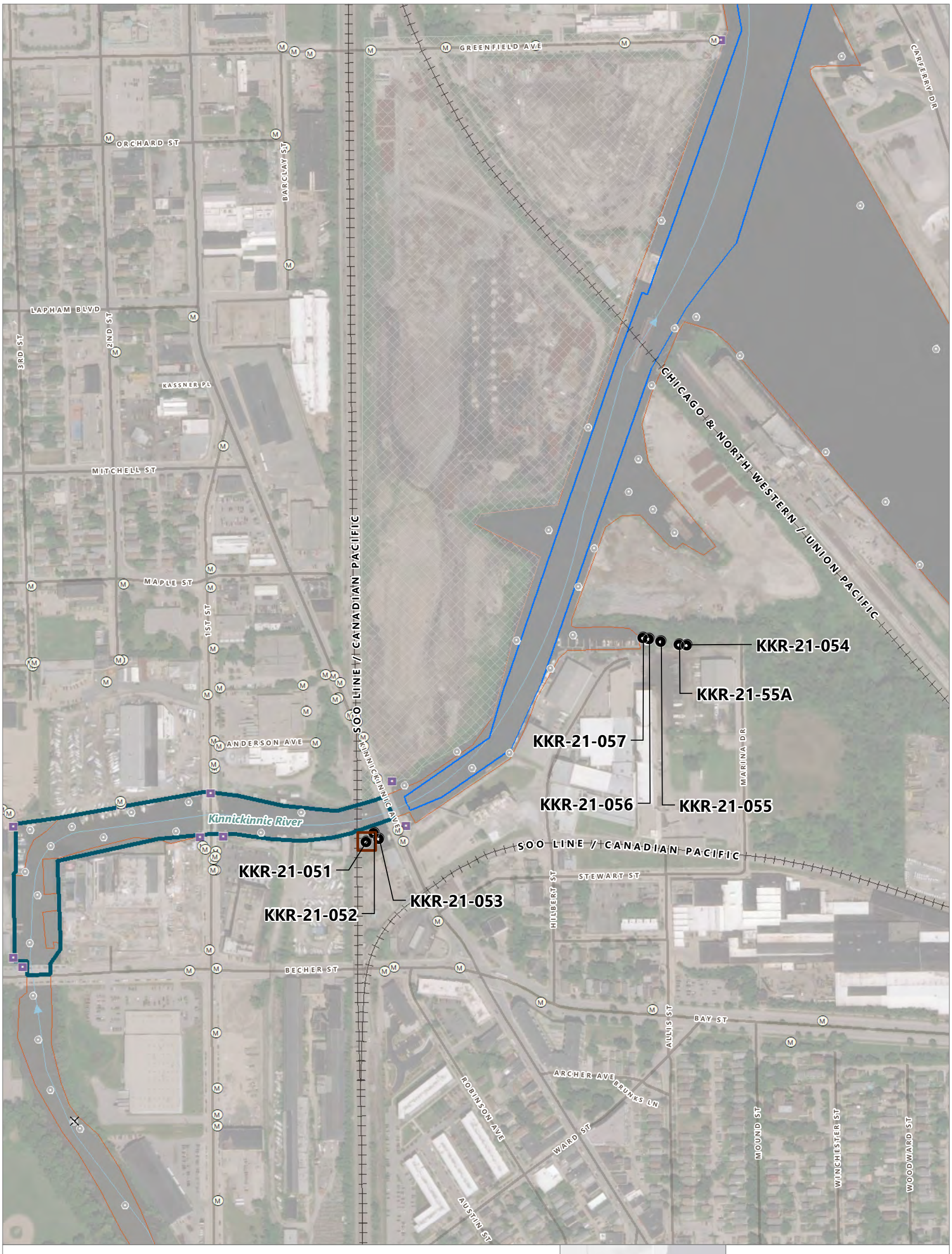

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Figure 3-7
Sampling Locations in Kinnickinnic River (Reach 2 and Reach 3)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

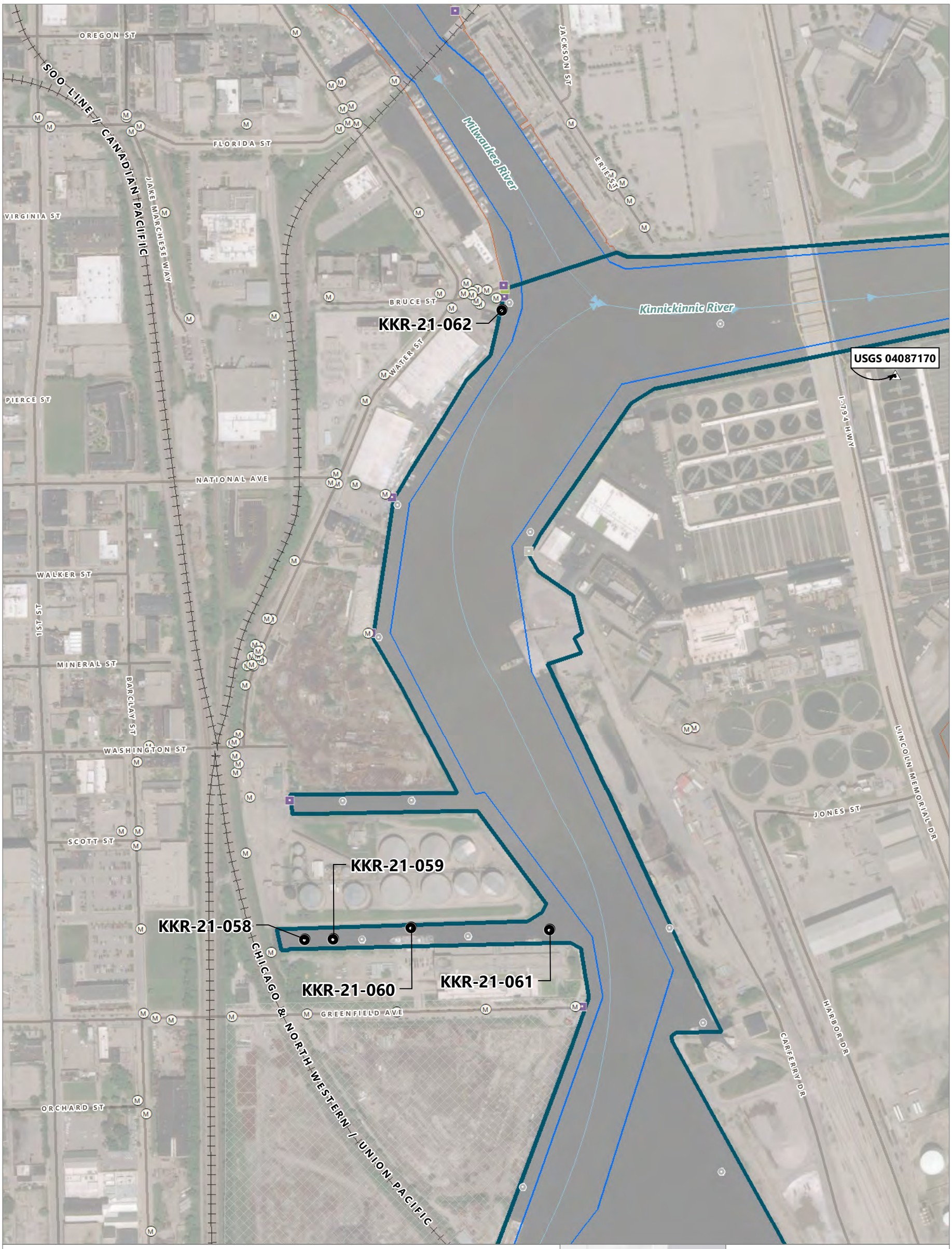

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Figure 3-8
Sampling Locations in Kinnickinnic River (Reach 4)

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

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Figure 3-9
Sampling Locations in Milwaukee Bay Nearshore and McKinley Marina

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

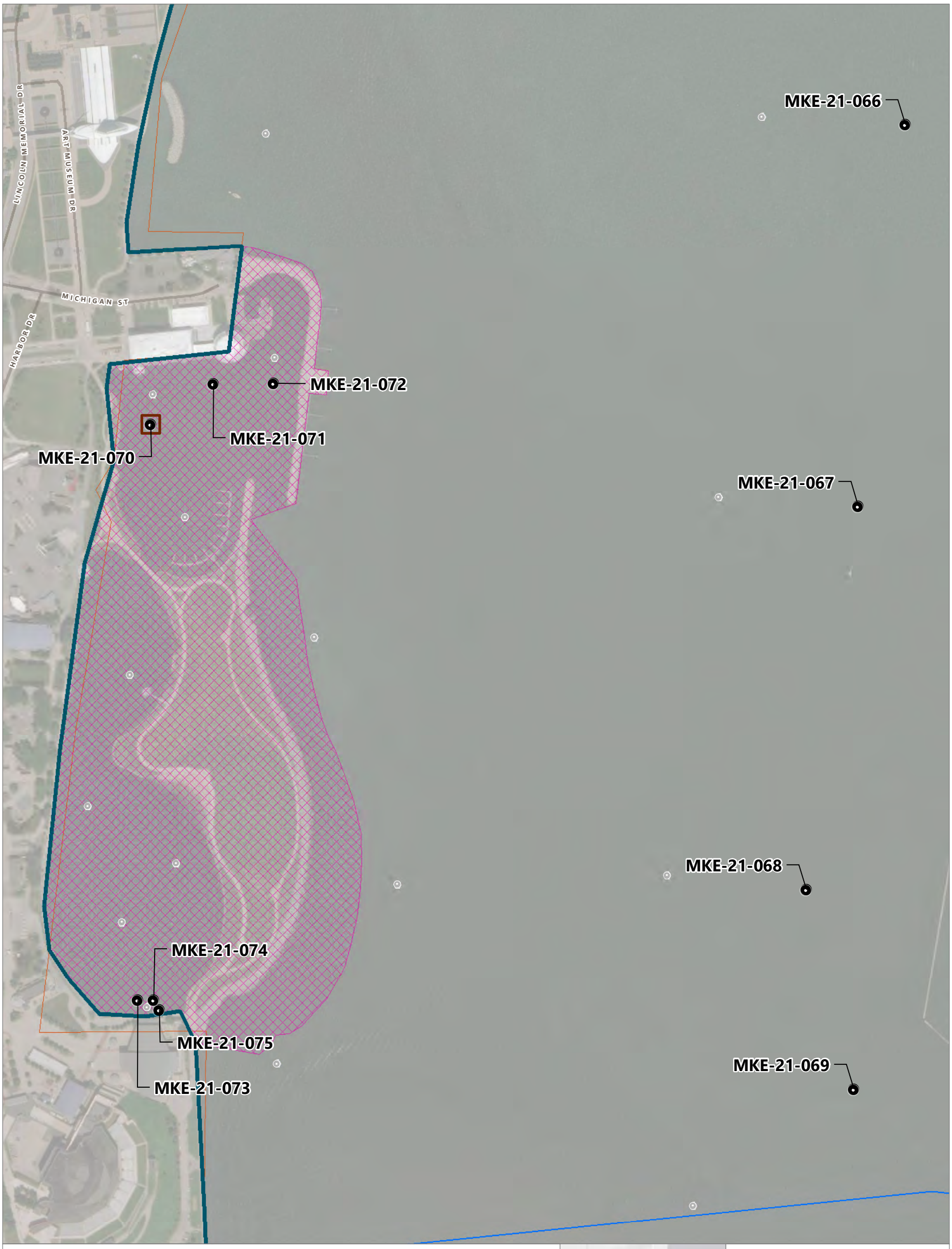

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Figure 3-10
Sampling Locations in Milwaukee Bay North and Summerfest Lagoon

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

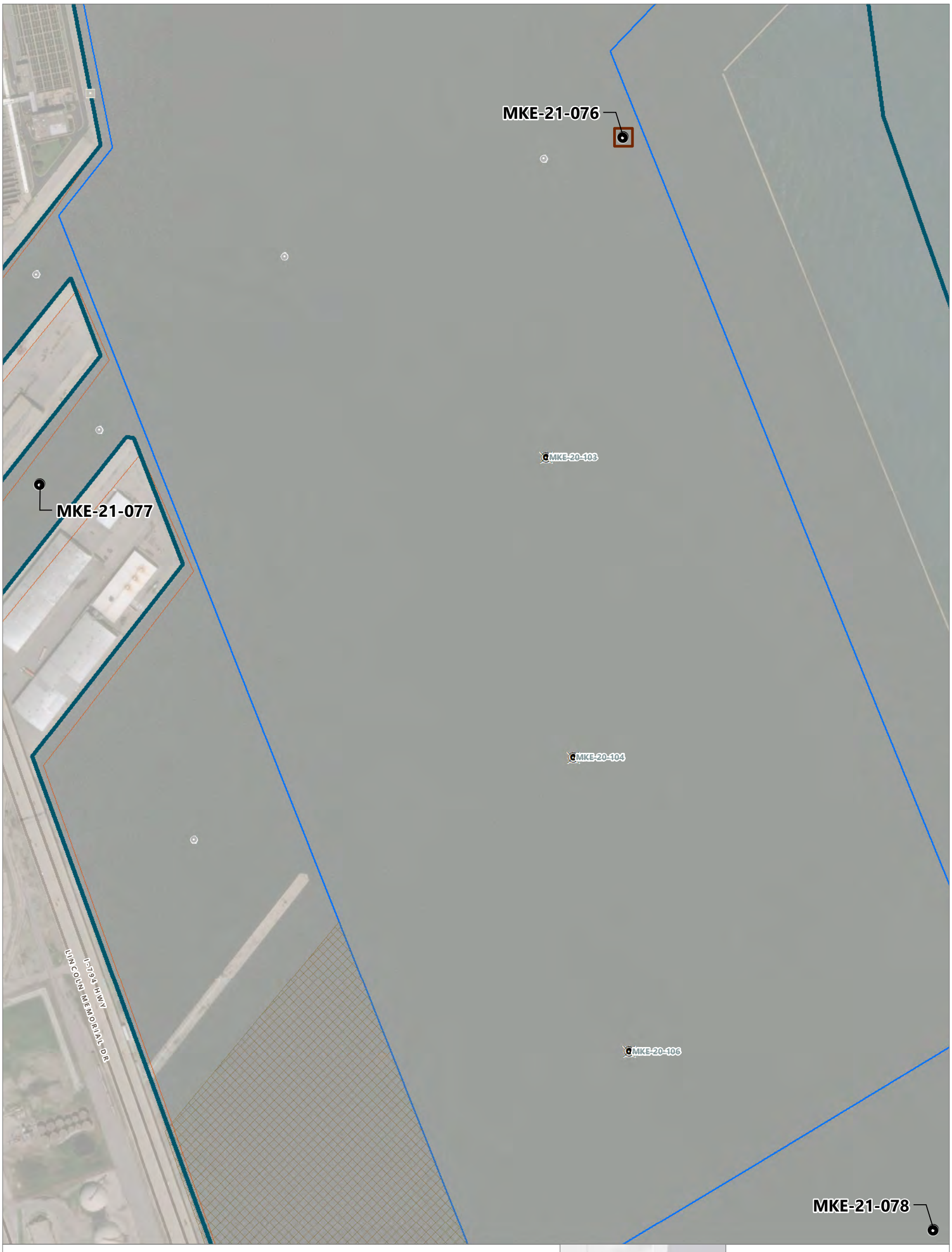

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Figure 3-11
Sampling Locations in Milwaukee Bay South Adjacent to Port Milwaukee

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin

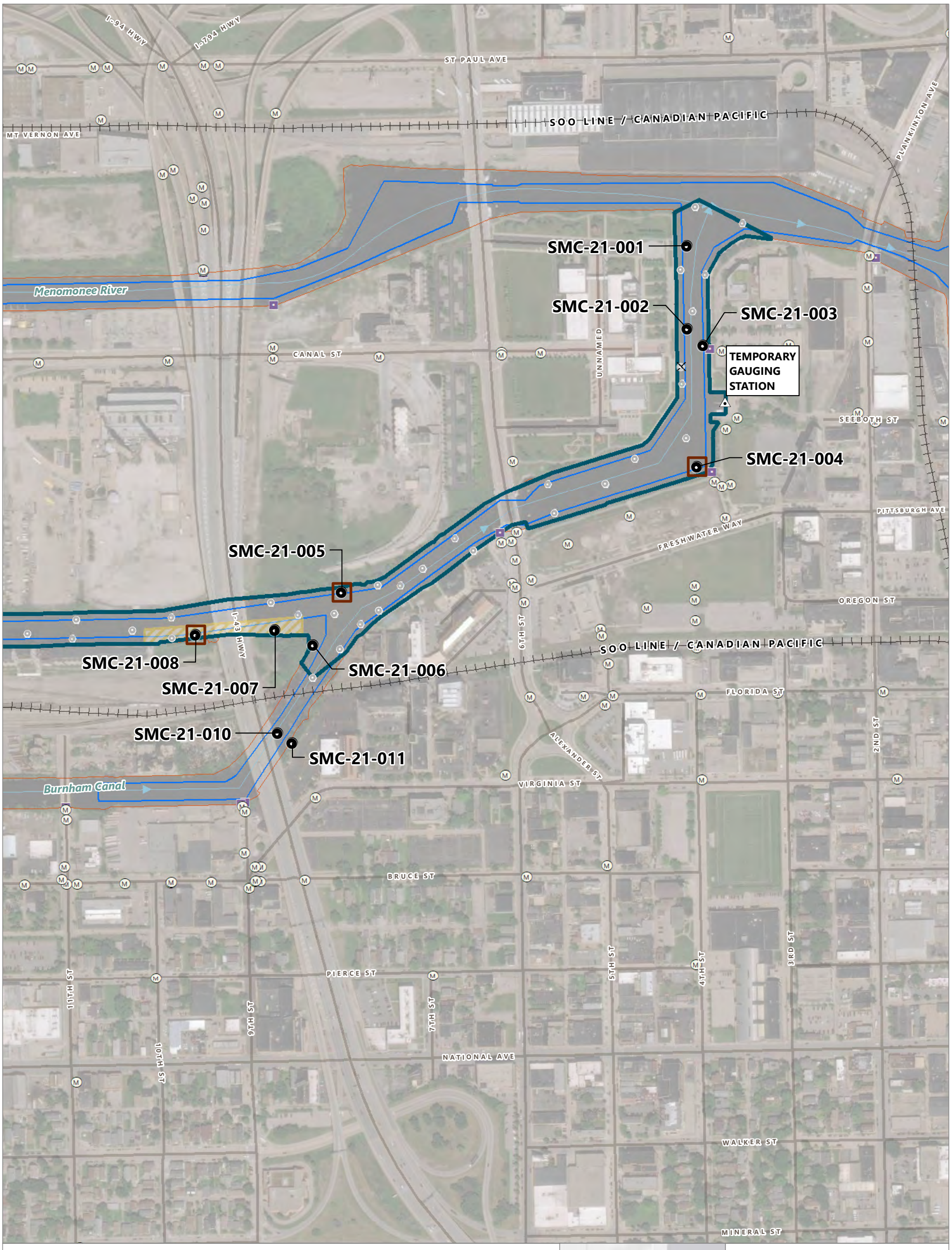

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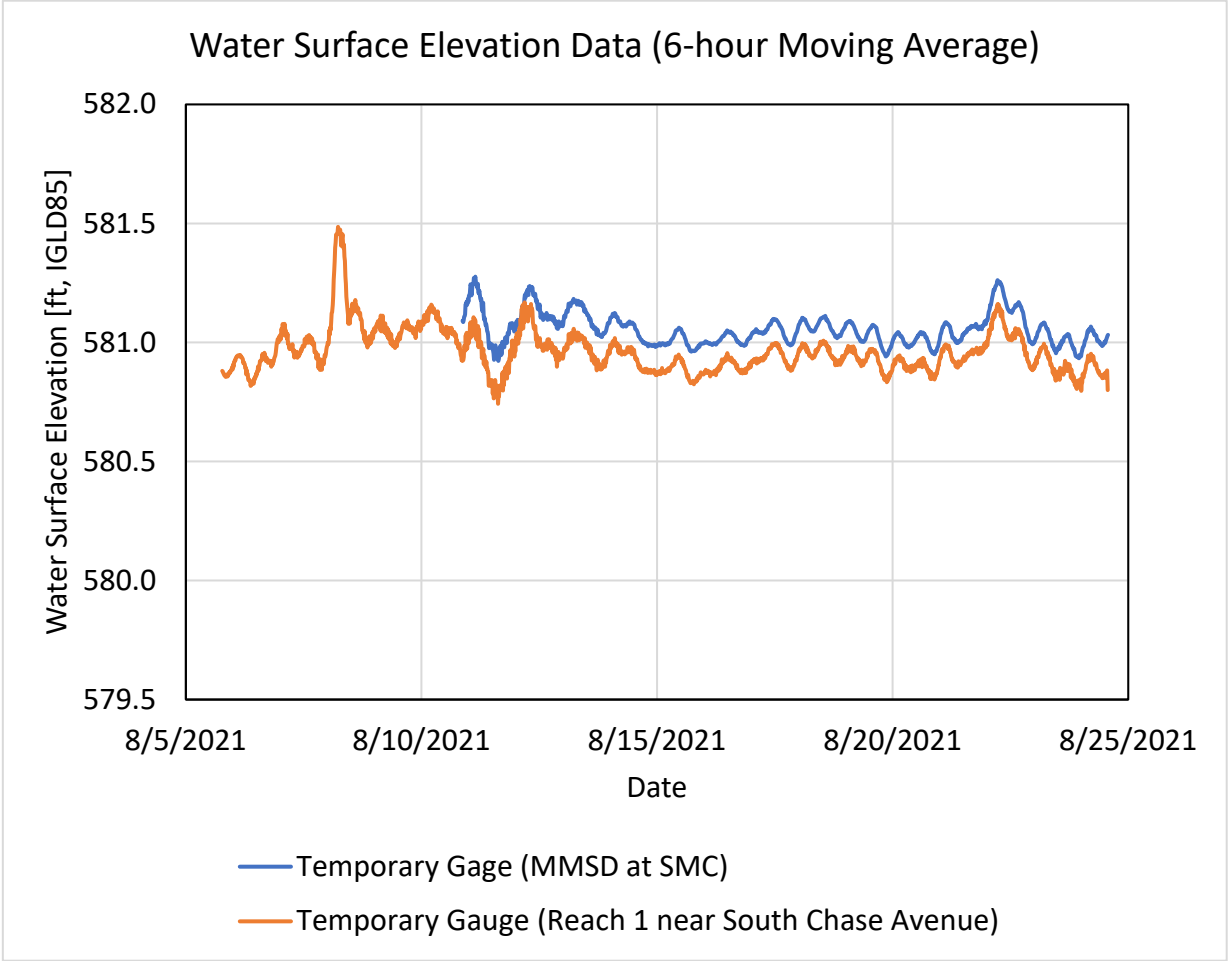
Figure 3-12
Sampling Locations in South Menomonee Canal

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee River Estuary Area of Concern
Milwaukee, Wisconsin



Notes:

1. Water levels were obtained from USGS Station 4087159, USGS Station 04087170, NOAA Station 9087057, and the project-specific station temporarily installed at the Car Ferry Slip.
2. Stage elevations are in IGLD85 feet.
3. Average water levels are averaged on a 6-hour scale.

IGLD85: International Great Lakes Datum of 1985
KK River: Kinnickinnic River
NOAA: National Oceanic and Atmospheric Administration
USGS: U.S. Geological Survey

Filepath: \\athena\Syracuse\Projects\WI_DNR\KK_River\Deliverables\2021_Sampling_Tech_Memo\FINAL\Figures\Figure 3-13.docx

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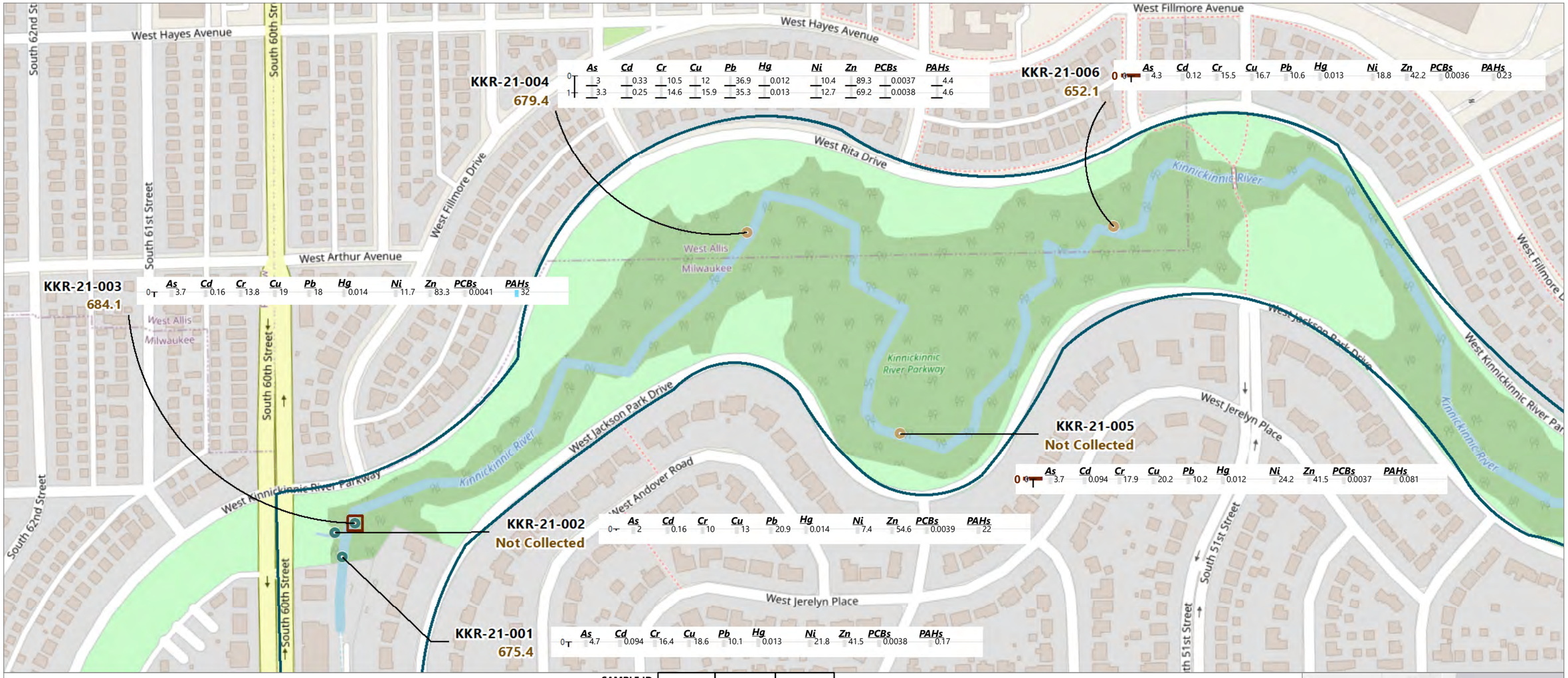
Figure 3-13
Water Surface Elevation Hydrographs
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream KKR (Reach 1)
- Bank Sediment (n = 3)
- Surface Sediment (n = 3)
- Geotechnical (n = 1)
- Native Material Encountered

SAMPLE ID Mudline Elevation Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0			
1	< PEC	< 1	< PEC
2	≥ PEC	1 - < 5	≥ PEC
3	≥ 3x PEC	5 - 50	≥ 3x PEC
4	≥ 5x PEC	> 50	≥ 5x PEC
5			

0 310
Feet

NOTES:

1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Upstream Kinnickinnic River (Segment 1).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

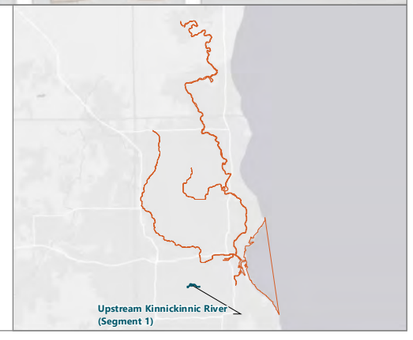


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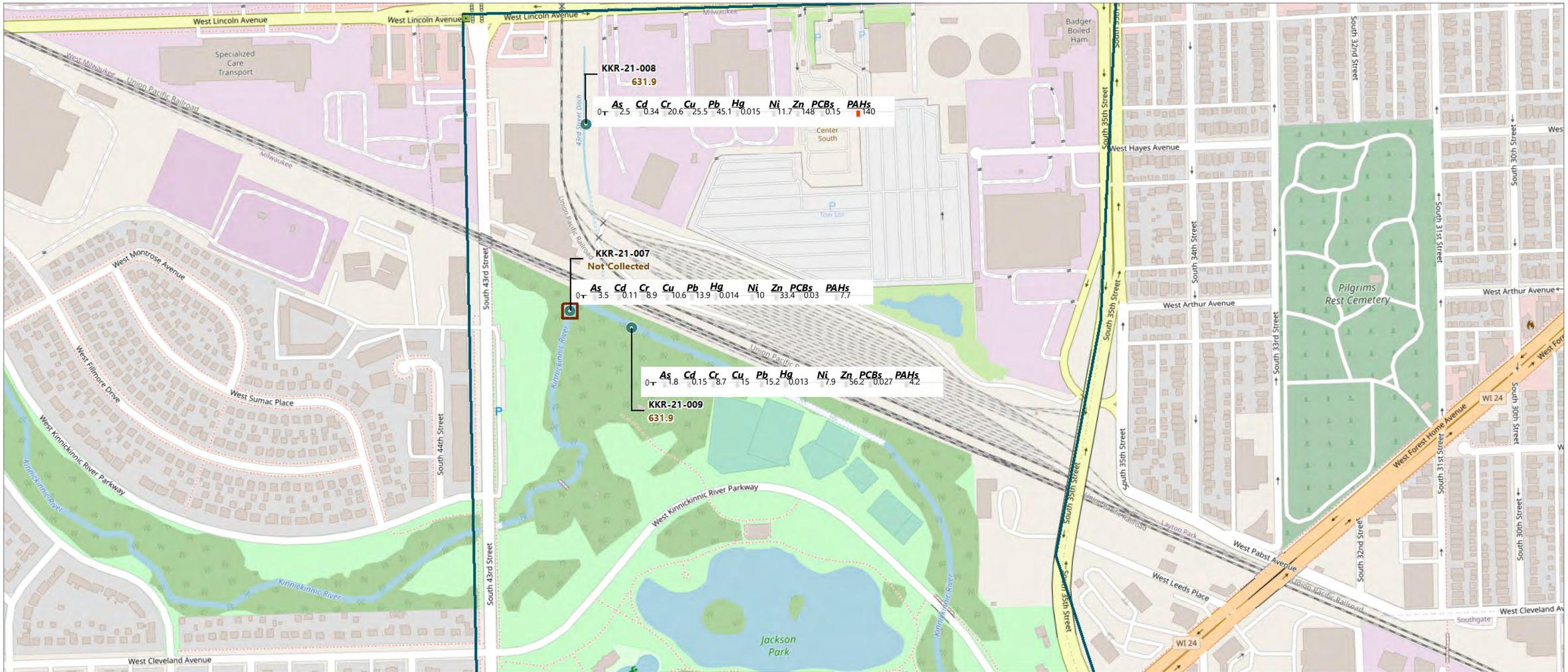
Figure 5-1
Results of Sediment Chemical Analysis in Upstream Kinnickinnic River (Segment 1)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream KKR (Reach 2)
- Surface Sediment (n = 3)
- Geotechnical (n = 1)
- Sanitary Sewer Overflow

SAMPLE ID Mudline Elevation Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0			
1	< PEC	< 1	< PEC
2	≥ PEC	1 - < 5	≥ PEC
3	≥ 3x PEC	5 - 50	≥ 3x PEC
4	≥ 5x PEC	> 50	≥ 5x PEC
5			

NOTES:

1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Upstream Kinnickinnic River (Segment 2).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

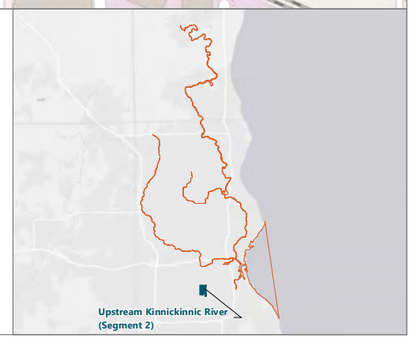


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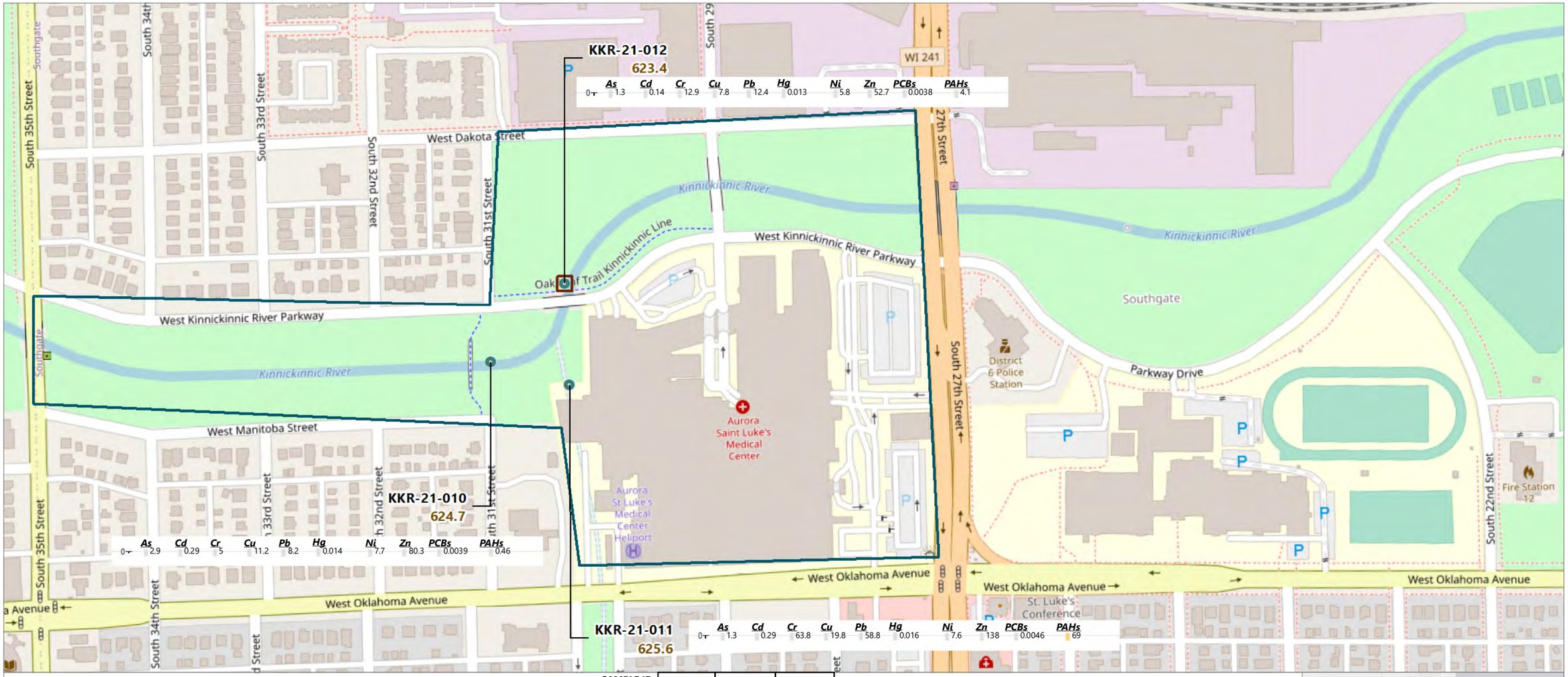
Figure 5-2
Results of Sediment Chemical Analysis in Upstream Kinnickinnic River (Segment 2)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream KKR (Reach 3)
- Surface Sediment (n = 3)
- Sample Results not in Current Extent
- Geotechnical (n = 1)
- Combined Sewer Overflow
- Sanitary Sewer Overflow

SAMPLE ID / Mudline Elevation / Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0 – 1	< PEC	< 1	< PEC
1 – 2	≥ PEC	1 - < 5	≥ PEC
2 – 3	≥ 3x PEC	5 - 50	≥ 3x PEC
3 – 4	≥ 5x PEC	> 50	≥ 5x PEC
4 – 5			

0 310 Feet

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Upstream Kinnickinnic River (Segment 3).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

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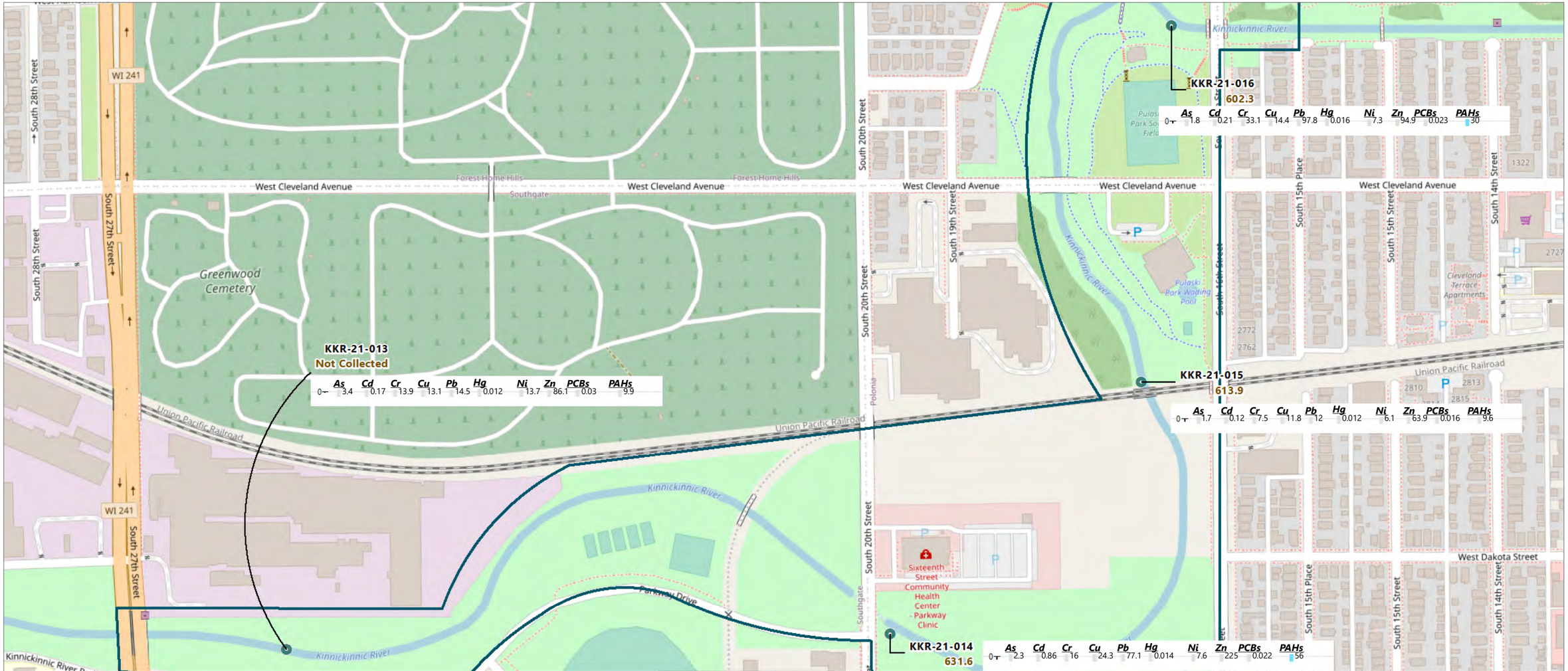
Figure 5-3
Results of Sediment Chemical Analysis in Upstream Kinnickinnic River (Segment 3)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Upstream KKR (Reach 4)
- Surface Sediment (n = 4)
- Combined Sewer Overflow

SAMPLE ID Mudline Elevation Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0			
1	< PEC	< 1	< PEC
2	≥ PEC	1 - < 5	≥ PEC
3			
4	≥ 3x PEC	5 - 50	≥ 3x PEC
5	≥ 5x PEC	> 50	≥ 5x PEC

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Upstream Kinnickinnic River (Segment 4).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

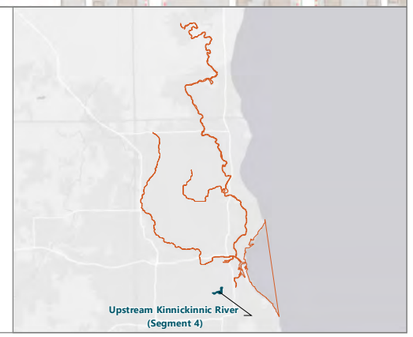


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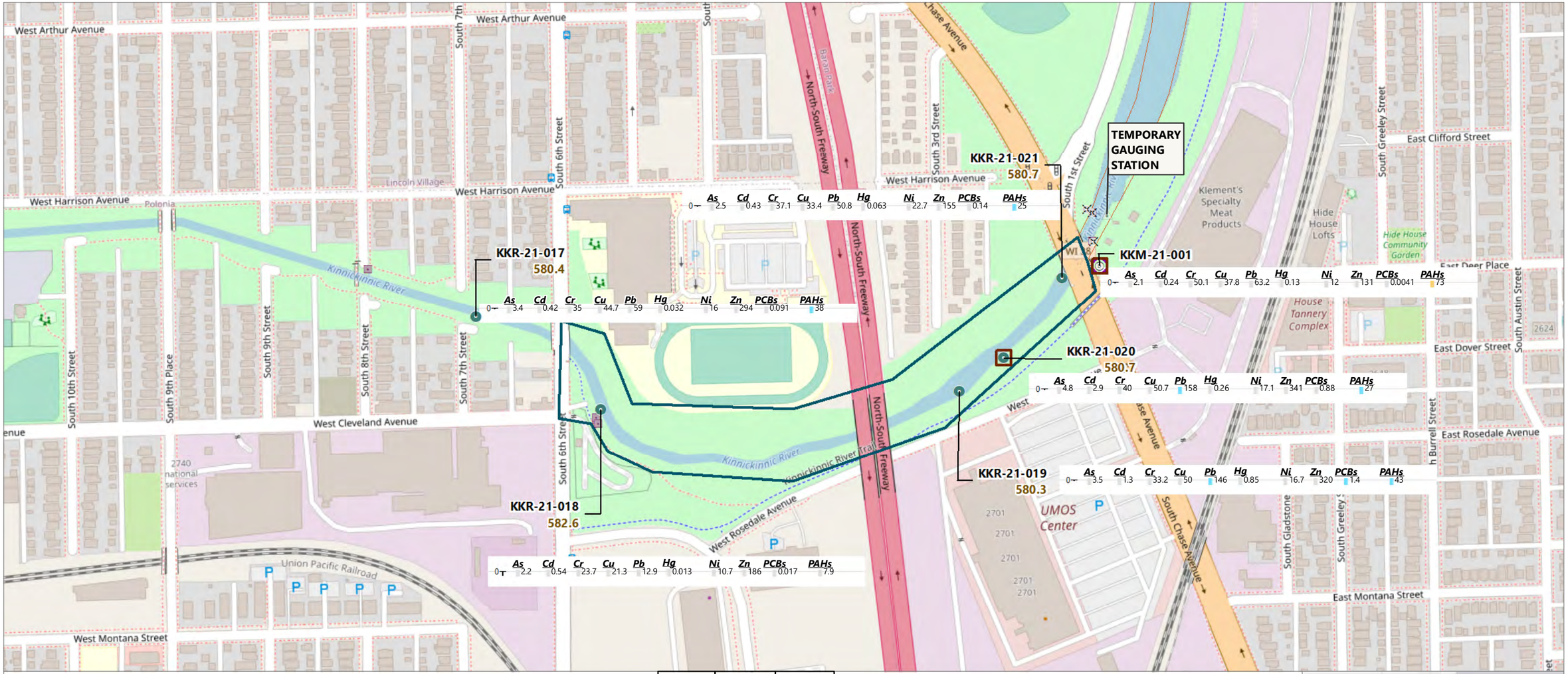
Figure 5-4
Results of Sediment Chemical Analysis in Upstream Kinnickinnic River (Segment 4)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- Upstream KKR (Reach 5)
- Diversion Sediment (n = 1)
- Surface Sediment (n = 5)
- Geotechnical (n = 2)
- Abandoned Sample Location
- Gauge Station
- Combined Sewer Overflow

SAMPLE ID / Mudline Elevation / Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0			
1	< PEC	< 1	< PEC
2	≥ PEC	1 - < 5	≥ PEC
3	≥ 3x PEC	5 - 50	≥ 3x PEC
4	≥ 5x PEC	> 50	≥ 5x PEC
5			

0 360 Feet

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Upstream Kinnickinnic River (Segment 5).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

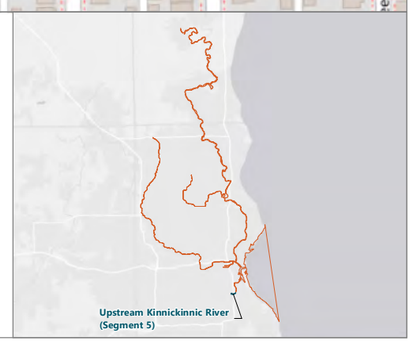


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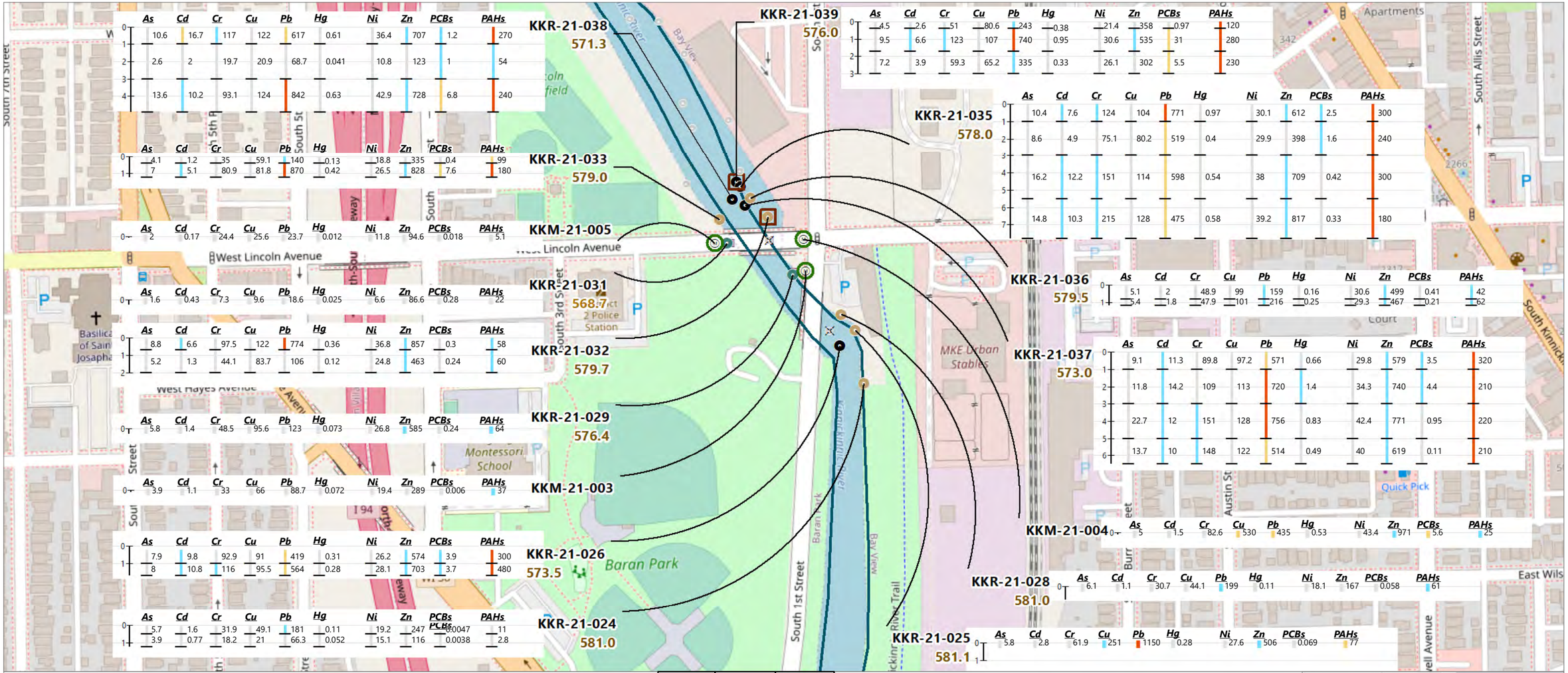
Figure 5-5
Results of Sediment Chemical Analysis in Upstream Kinnickinnic River (Segment 5)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- KKR/MKE (Reach 1)
- Manhole Sediment (n = 3)
- Bank Sediment (n = 6)
- Sediment Core (n = 5)
- Surface Sediment (n = 2)
- Sample Results not in Current Extent
- Geotechnical (n = 2)
- Abandoned Sample Location
- Combined Sewer Overflow

SAMPLE ID
Mudline Elevation
Depth (ft.)

Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0	< PEC	< 1	< PEC
1	≥ PEC	1 - < 5	≥ PEC
2	≥ 3x PEC	5 - 50	≥ 3x PEC
3	≥ 5x PEC	> 50	≥ 5x PEC
4			
5			

0 310
Feet

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Kinnickinnic River (Reach 1A).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

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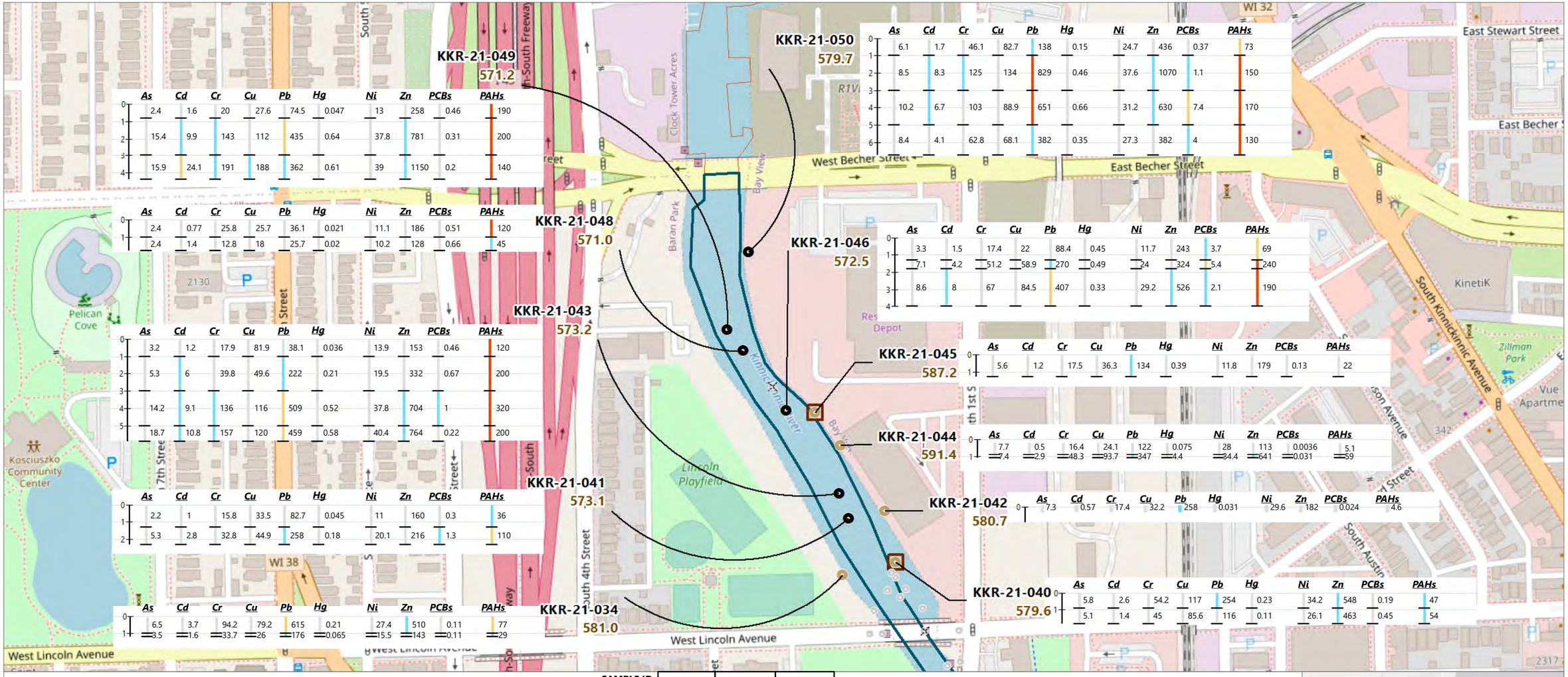
Figure 5-6A
Results of Sediment Chemical Analysis in Kinnickinnic River (Reach 1A)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- KKR/MKE (Reach 1)
- Bank Sediment (n = 5)
- Sediment Core (n = 6)
- Sample Results not in Current Extent
- Geotechnical (n = 2)
- Abandoned Sample Location
- Combined Sewer Overflow

SAMPLE ID
Mudline Elevation
Depth (ft.)

Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0			
1	< PEC	< 1	< PEC
2	≥ PEC	1 - < 5	≥ PEC
3	≥ 3x PEC	5 - 50	≥ 3x PEC
4	≥ 5x PEC	> 50	≥ 5x PEC
5			

0 310
Feet

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Kinnickinnic River (Reach 1B).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

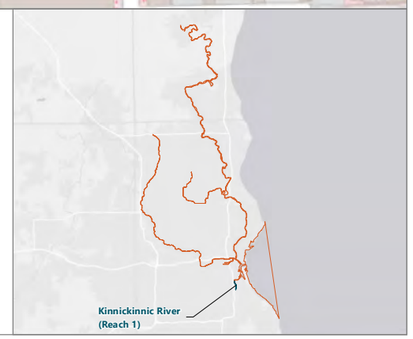


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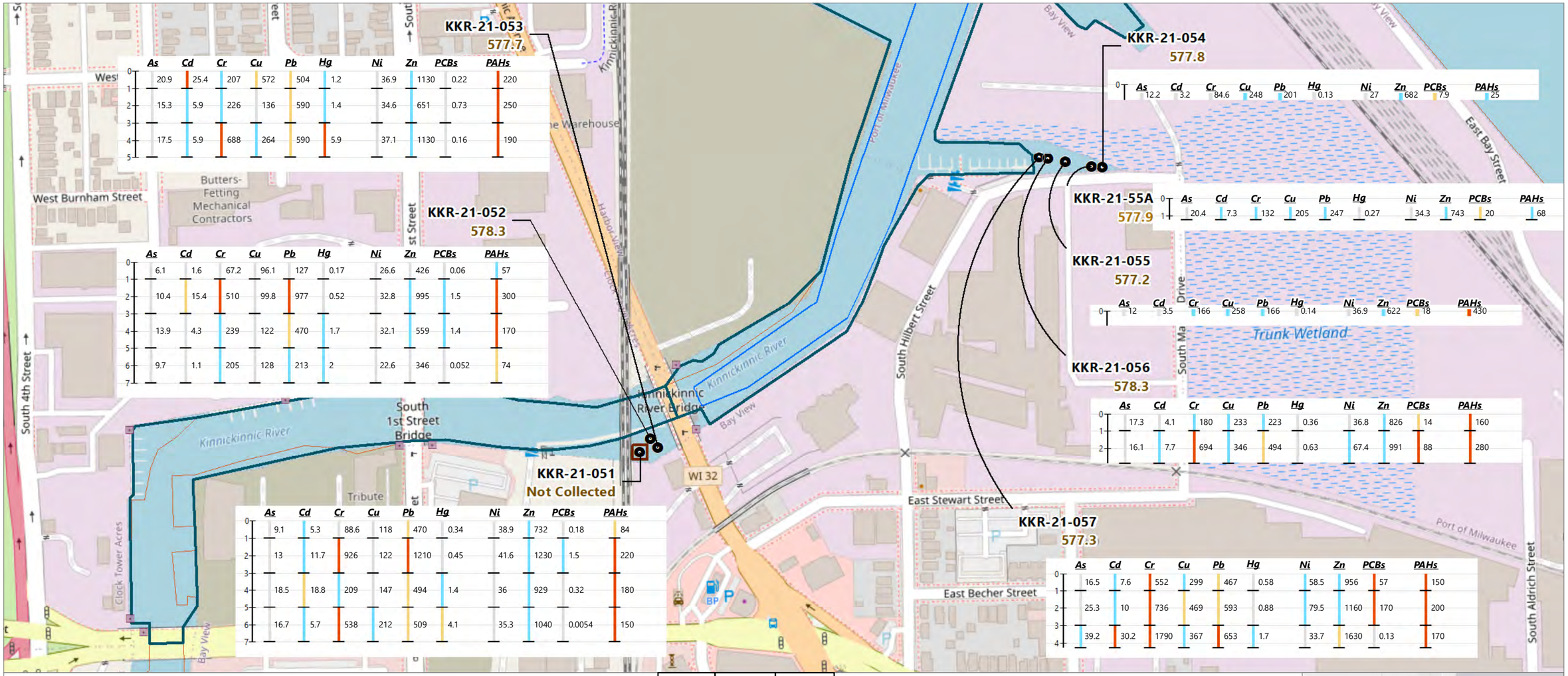
Figure 5-6B
Results of Sediment Chemical Analysis in Kinnickinnic River (Reach 1B)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- KKR/MKE (Reach 2)
- KKR/MKE (Reach 3)
- Milwaukee Solvay Coke and Gas Site
- Federal Navigation Channel
- Sediment Core (n = 8)
- Geotechnical (n = 1)
- Combined Sewer Overflow

SAMPLE ID / Mudline Elevation / Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0–1	< PEC	< 1	< PEC
2–3	≥ PEC	1 - < 5	≥ PEC
4	≥ 3x PEC	5 - 50	≥ 3x PEC
5	≥ 5x PEC	> 50	≥ 5x PEC

0 310 Feet

NOTES:

1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Kinnickinnic River (Reach 2 and Reach 3).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

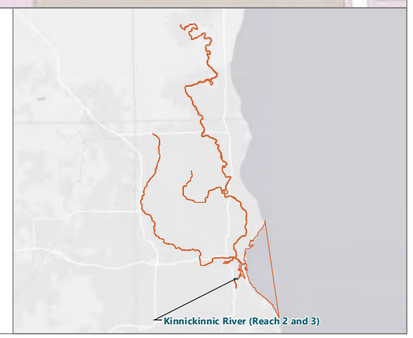


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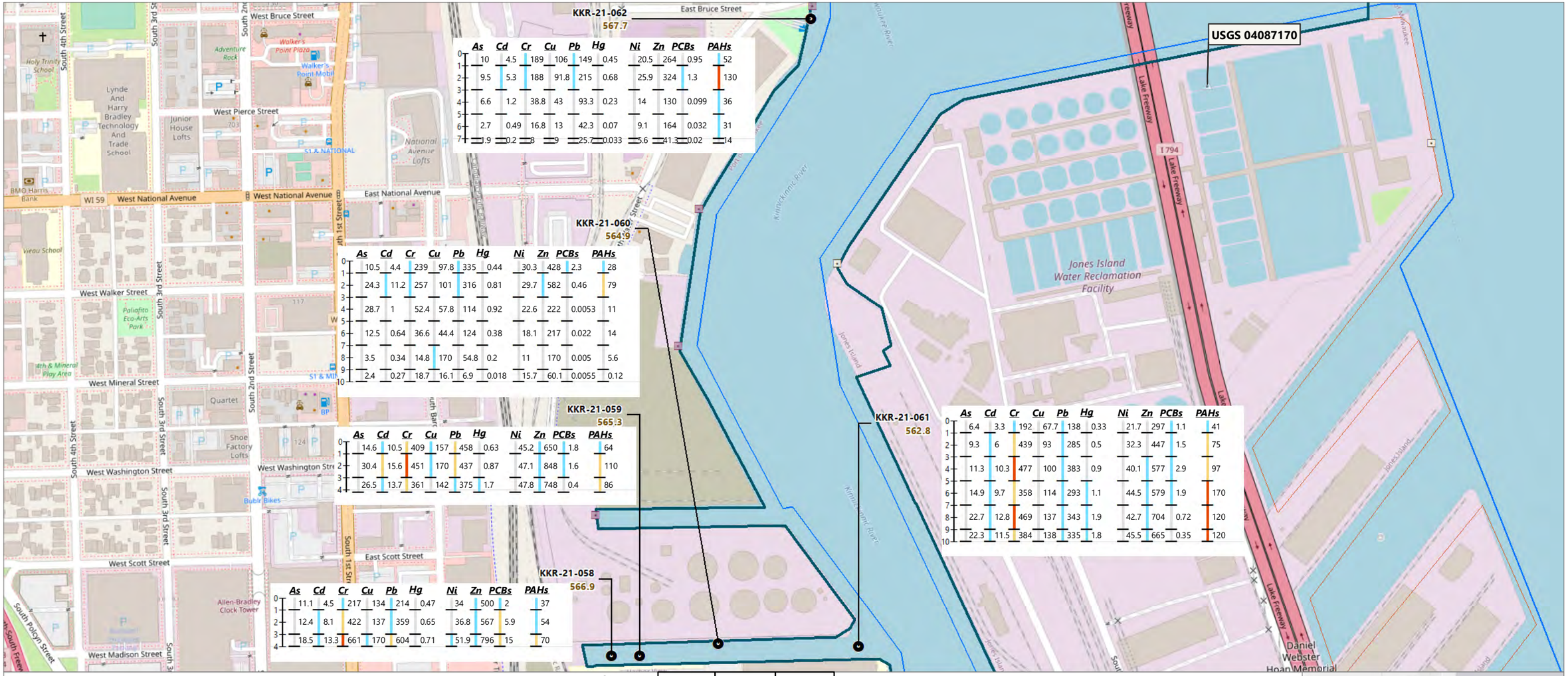
Figure 5-7
Results of Sediment Chemical Analysis in Kinnickinnic River (Reach 2 and Reach 3)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- KKR/MKE (Reach 4)
- Federal Navigation Channel
- Sediment Core (n = 5)
- Sample Results not in Current Extent
- Gauge Station
- Unspecified Outfall Location
- Combined Sewer Overflow
- Sanitary Sewer Overflow

SAMPLE ID / Mudline Elevation / Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0			
1	< PEC	< 1	< PEC
2	≥ PEC	1 - < 5	≥ PEC
3	≥ 3x PEC	5 - 50	≥ 3x PEC
4	≥ 5x PEC	> 50	≥ 5x PEC
5			

0 425 Feet

NOTES:

1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Kinnickinnic River (Reach 4).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

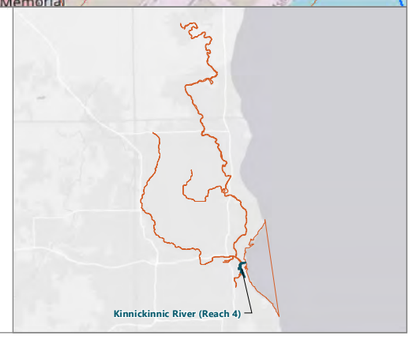


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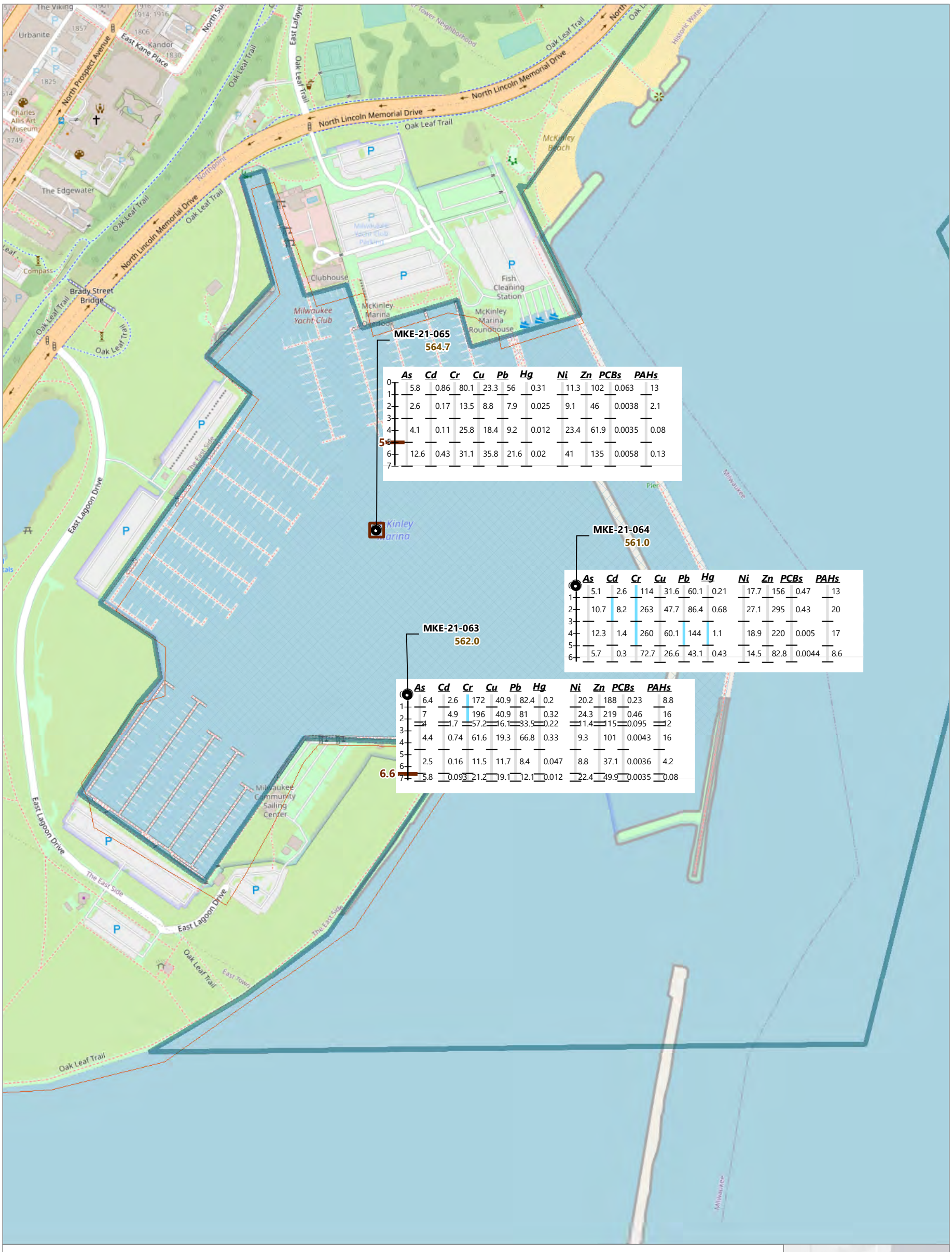
Figure 5-8
Results of Sediment Chemical Analysis in Kinnickinnic River (Reach 4)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Milwaukee Bay Nearshore and McKinley Marina.
4) PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

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Figure 5-9
Results of Sediment Chemical Analysis in Milwaukee Bay Nearshore and McKinley Marina
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin

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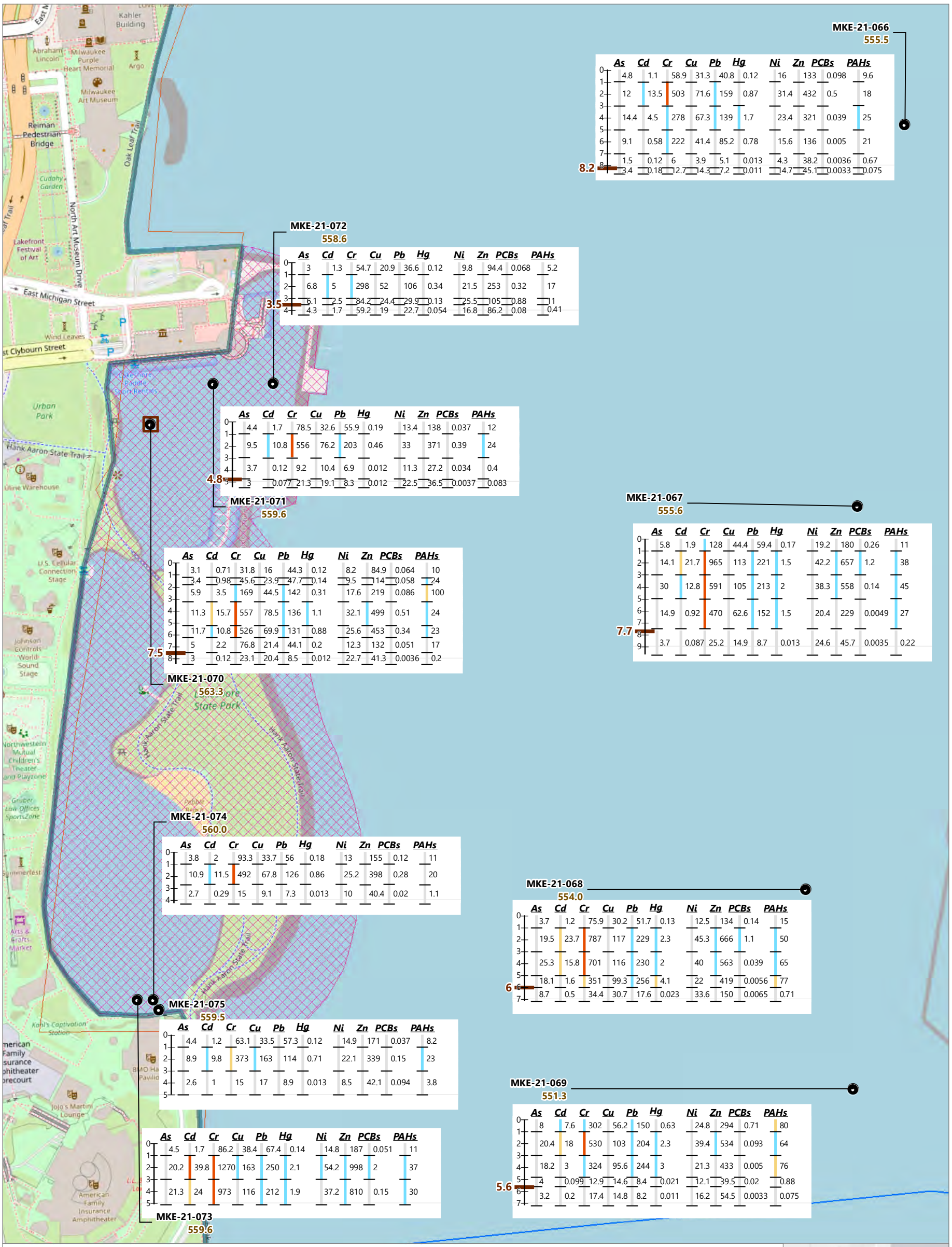

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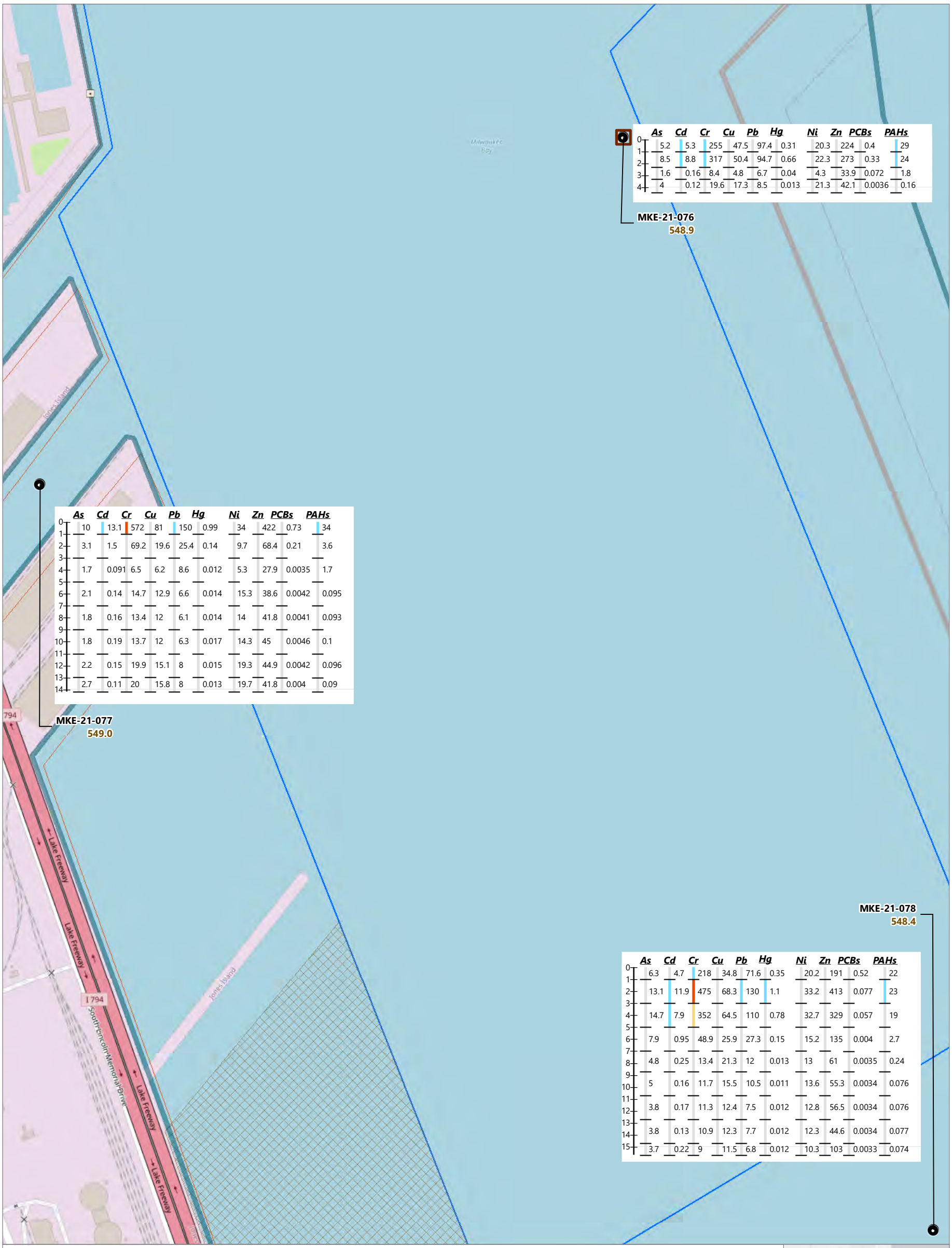
Figure 5-10

Results of Sediment Chemical Analysis in Milwaukee Bay North and Summerfest Lagoon

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	PCBs	PAHs
0	5.2	5.3	255	47.5	97.4	0.31	20.3	224	0.4	29
1	8.5	8.8	317	50.4	94.7	0.66	22.3	273	0.33	24
2	1.6	0.16	8.4	4.8	6.7	0.04	4.3	33.9	0.072	1.8
3	4	0.12	19.6	17.3	8.5	0.013	21.3	42.1	0.0036	0.16

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	PCBs	PAHs
0	10	13.1	572	81	150	0.99	34	422	0.73	34
1										
2	3.1	1.5	69.2	19.6	25.4	0.14	9.7	68.4	0.21	3.6
3										
4	1.7	0.091	6.5	6.2	8.6	0.012	5.3	27.9	0.0035	1.7
5										
6	2.1	0.14	14.7	12.9	6.6	0.014	15.3	38.6	0.0042	0.095
7										
8	1.8	0.16	13.4	12	6.1	0.014	14	41.8	0.0041	0.093
9										
10	1.8	0.19	13.7	12	6.3	0.017	14.3	45	0.0046	0.1
11										
12	2.2	0.15	19.9	15.1	8	0.015	19.3	44.9	0.0042	0.096
13										
14	2.7	0.11	20	15.8	8	0.013	19.7	41.8	0.004	0.09

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	PCBs	PAHs
0	6.3	4.7	218	34.8	71.6	0.35	20.2	191	0.52	22
1										
2	13.1	11.9	475	68.3	130	1.1	33.2	413	0.077	23
3										
4	14.7	7.9	352	64.5	110	0.78	32.7	329	0.057	19
5										
6	7.9	0.95	48.9	25.9	27.3	0.15	15.2	135	0.004	2.7
7										
8	4.8	0.25	13.4	21.3	12	0.013	13	61	0.0035	0.24
9										
10	5	0.16	11.7	15.5	10.5	0.011	13.6	55.3	0.0034	0.076
11										
12	3.8	0.17	11.3	12.4	7.5	0.012	12.8	56.5	0.0034	0.076
13										
14	3.8	0.13	10.9	12.3	7.7	0.012	12.3	44.6	0.0034	0.077
15	3.7	0.22	9	11.5	6.8	0.012	10.3	103	0.0033	0.074

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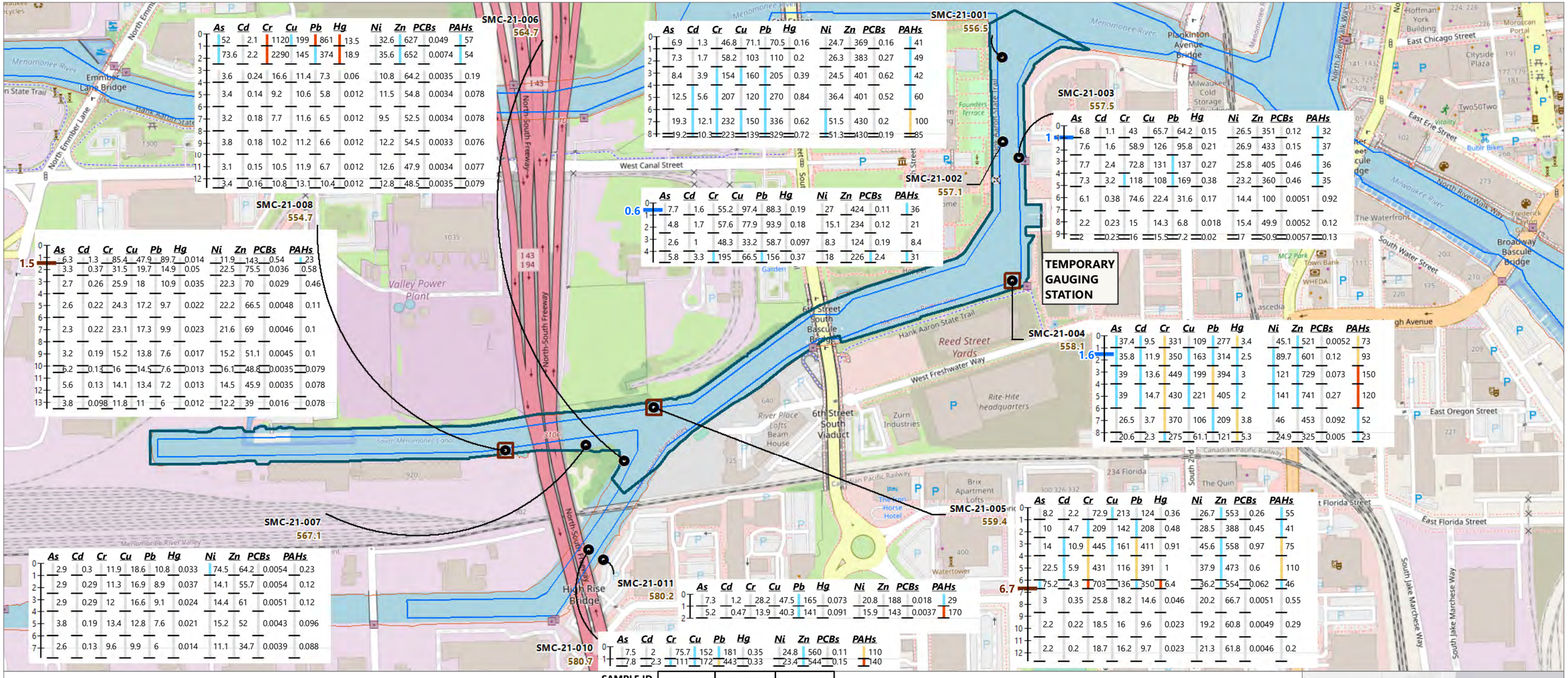
ANCHOR QEA

Figure 5-11

Results of Sediment Chemical Analysis in Milwaukee Bay South Adjacent to Port Milwaukee

Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- South Menomonee Canal
- Federal Navigation Channel
- Sediment Core (n = 10)
- Geotechnical (n = 3)
- Abandoned Sample Location
- Gauge Station
- Combined Sewer Overflow
- Native Material Encountered
- Federal Navigation Channel Authorized Depth

SAMPLE ID
Mudline Elevation
Depth (ft.)

Depth (ft.)	Metals (mg/kg)	PCB Aroclors (mg/kg)	PAHs (mg/kg)
0			
1	< PEC	< 1	< PEC
2	≥ PEC	1 - < 5	≥ PEC
3	≥ 3x PEC	5 - 50	≥ 3x PEC
4	≥ 5x PEC	> 50	≥ 5x PEC
5			

NOTES:

1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within South Menomonee Canal.
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

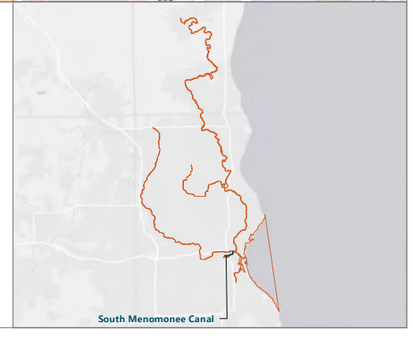


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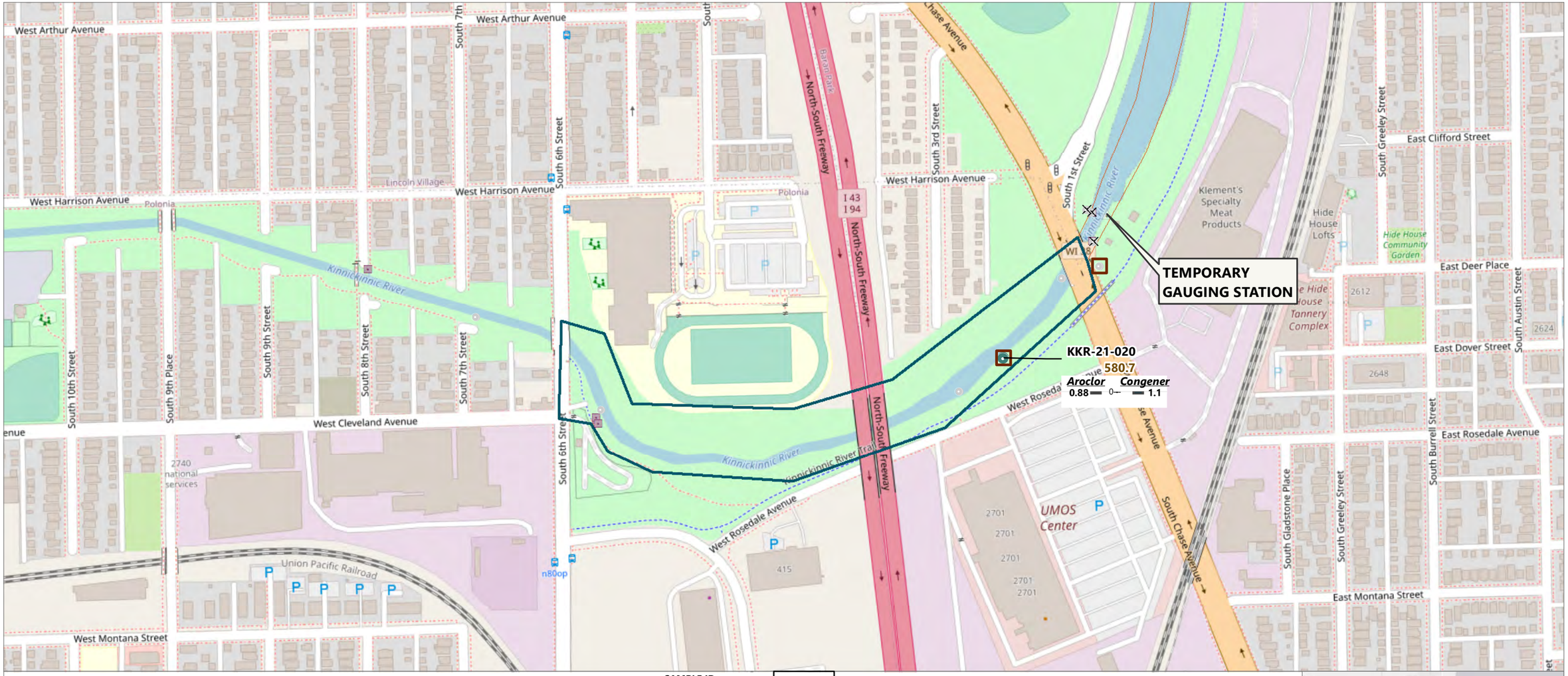
Figure 5-12
Results of Sediment Chemical Analysis in South Menomonee Canal
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- Upstream KKR (Reach 5)
- Surface Sediment (n = 1)
- Sample Results not in Current Extent
- Geotechnical (n = 2)
- Abandoned Sample Location
- Gauge Station
- Combined Sewer Overflow

SAMPLE ID
Mudline Elevation
Depth (ft.)
0
1
2
3
4
5

0 340
Feet

PCBs (mg/kg)
< 1
1 - < 5
5 - 50
> 50

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Upstream Kinnickinnic River (Segment 5).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

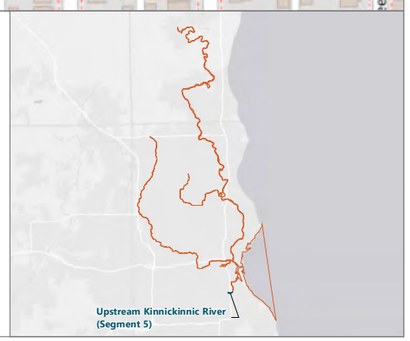


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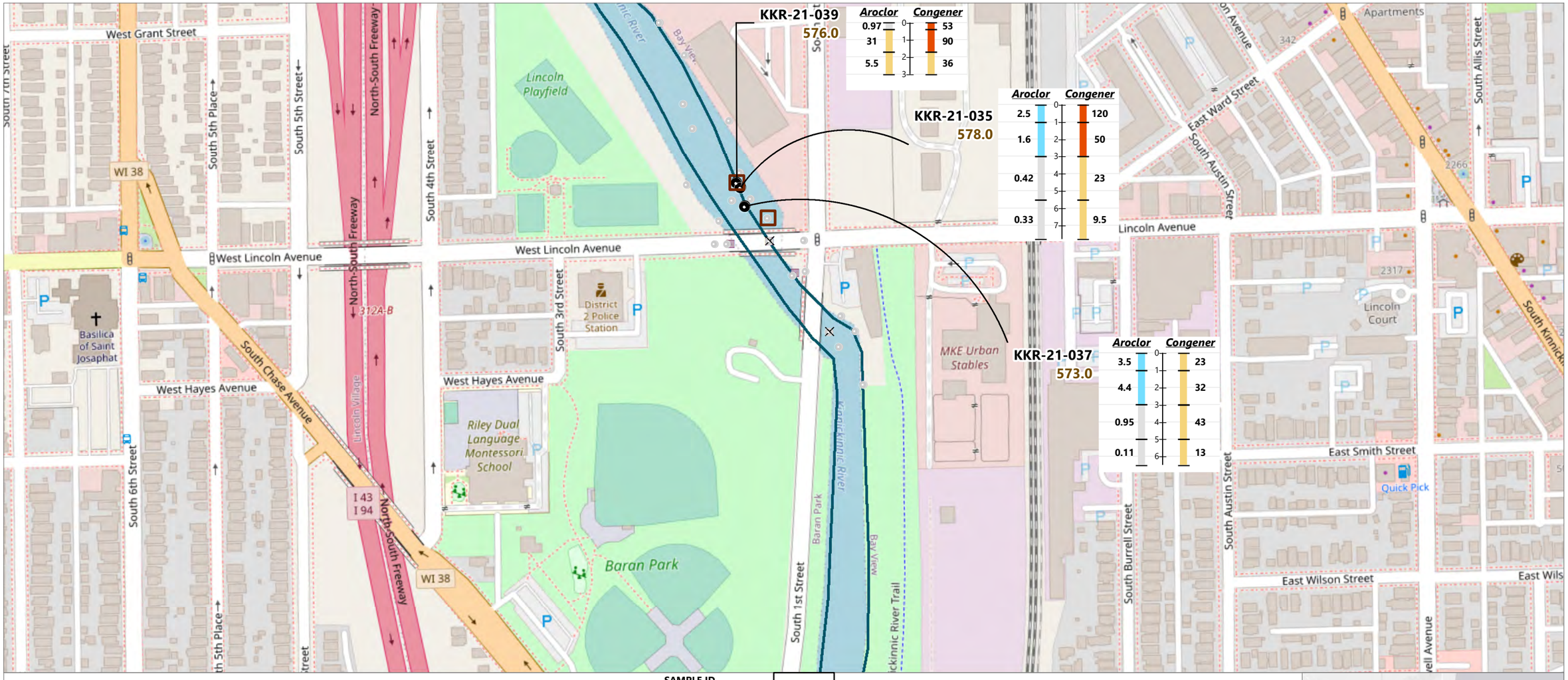
Figure 5-13
Total PCB Aroclor and PCB Congener Results in Upstream Kinnickinnic River (Segment 5)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- KKR/MKE (Reach 1)
- Sediment Core (n = 3)
- Sample Results not in Current Extent
- Geotechnical (n = 2)
- Abandoned Sample Location
- Combined Sewer Overflow

SAMPLE ID
Mudline Elevation
Depth (ft.)
0
1
2
3
4
5

0 310
Feet

PCBs (mg/kg)
< 1
1 - < 5
5 - 50
> 50

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Kinnickinnic River (Reach 1A).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

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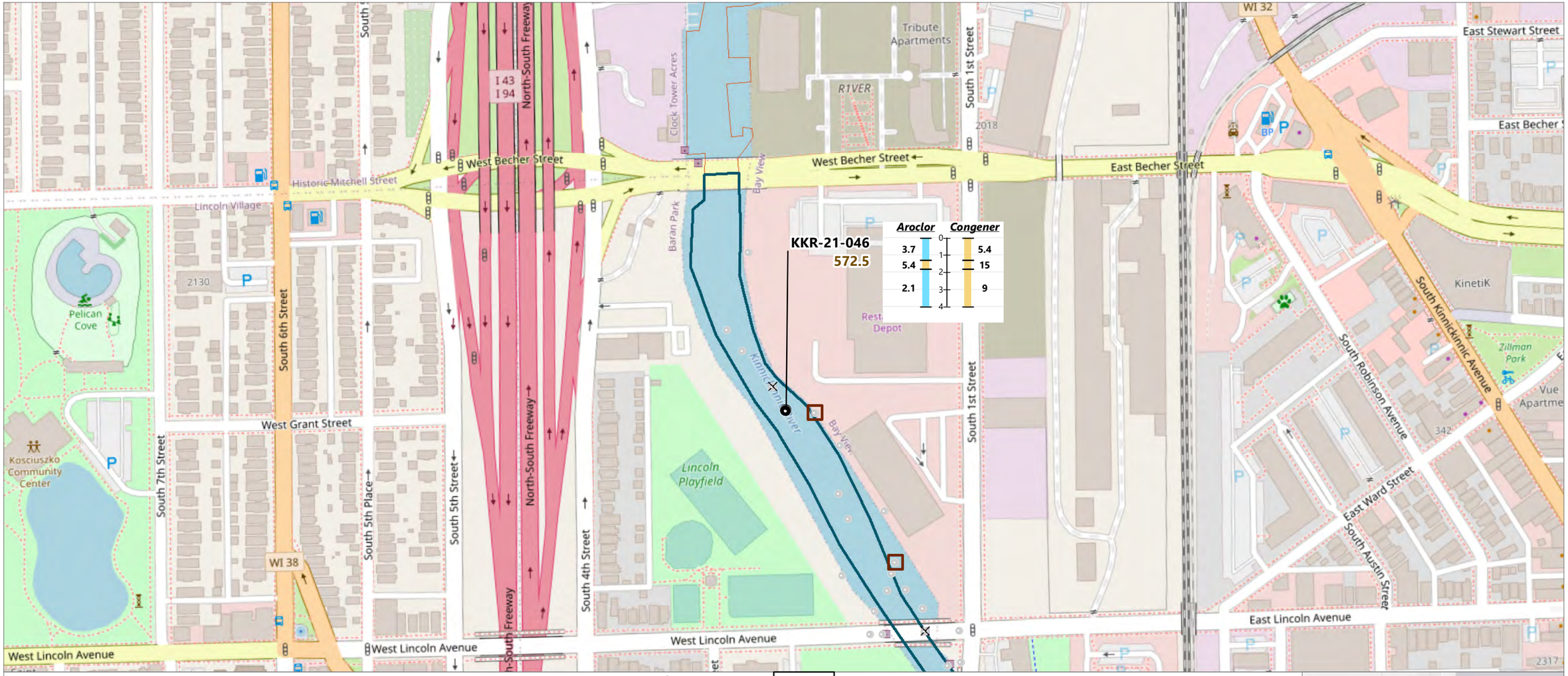
Figure 5-14A
Total PCB Aroclor and PCB Congener Results in Kinnickinnic River (Reach 1A)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- KKR/MKE (Reach 1)
- Sediment Core (n = 1)
- Sample Results not in Current Extent
- Geotechnical (n = 2)
- Abandoned Sample Location
- Combined Sewer Overflow

SAMPLE ID
Mudline Elevation
Depth (ft.)
0
1
2
3
4
5

0 310
Feet

PCBs (mg/kg)
< 1
1 - < 5
5 - 50
> 50

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Kinnickinnic River (Reach 1B).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

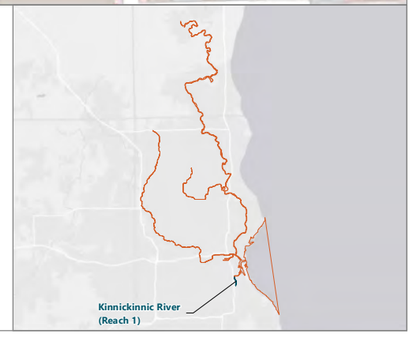


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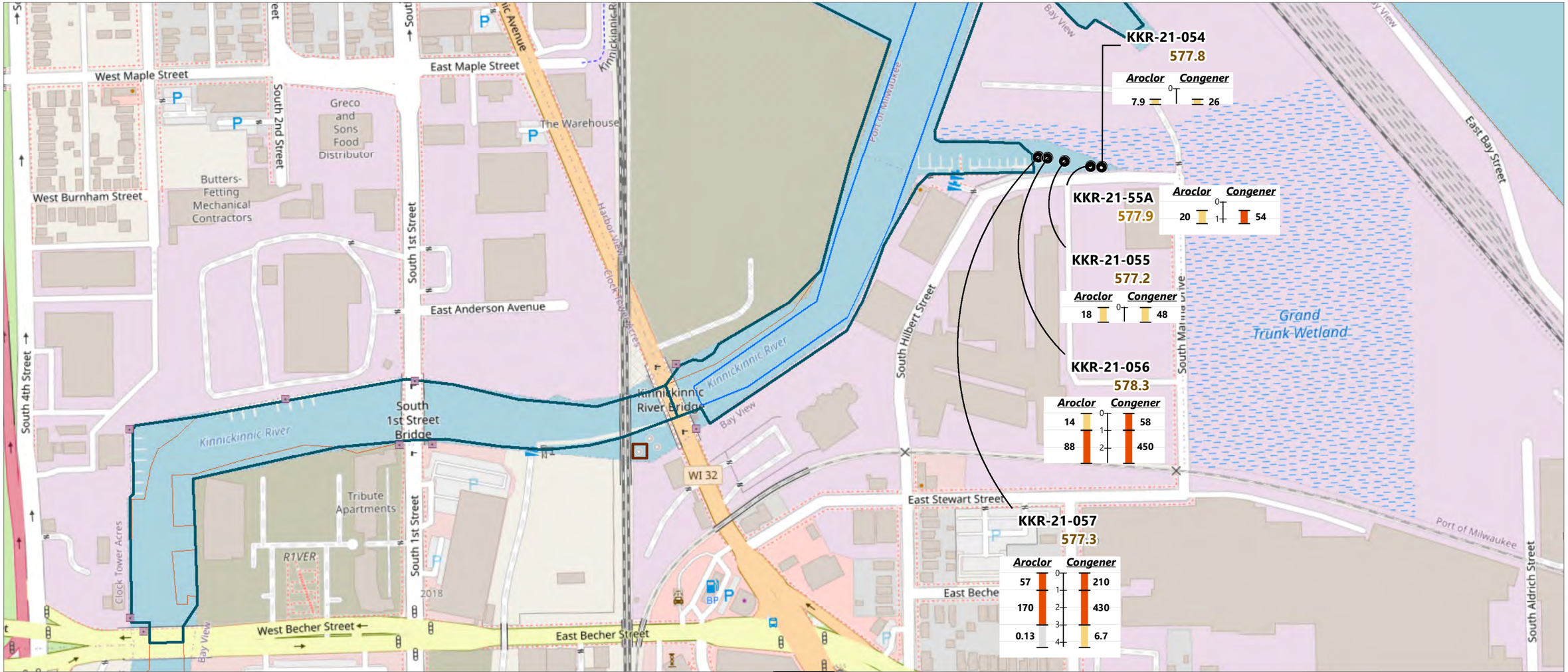
Figure 5-14B
Total PCB Aroclor and PCB Congener Results in Kinnickinnic River (Reach 1B)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- KKR/MKE (Reach 2)
- KKR/MKE (Reach 3)
- Milwaukee Solvay Coke and Gas Site
- Federal Navigation Channel
- Sediment Core (n = 5)
- Sample Results not in Current Extent
- Geotechnical (n = 1)
- Combined Sewer Overflow

SAMPLE ID
Mudline Elevation
Depth (ft.)
0
1
2
3
4
5

0 310
Feet

PCBs (mg/kg)
< 1
1 - < 5
5 - 50
> 50

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Kinnickinnic River (Reach 2 and Reach 3).
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

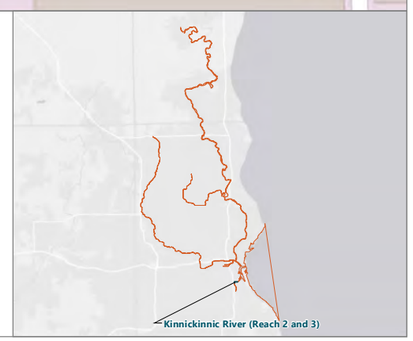


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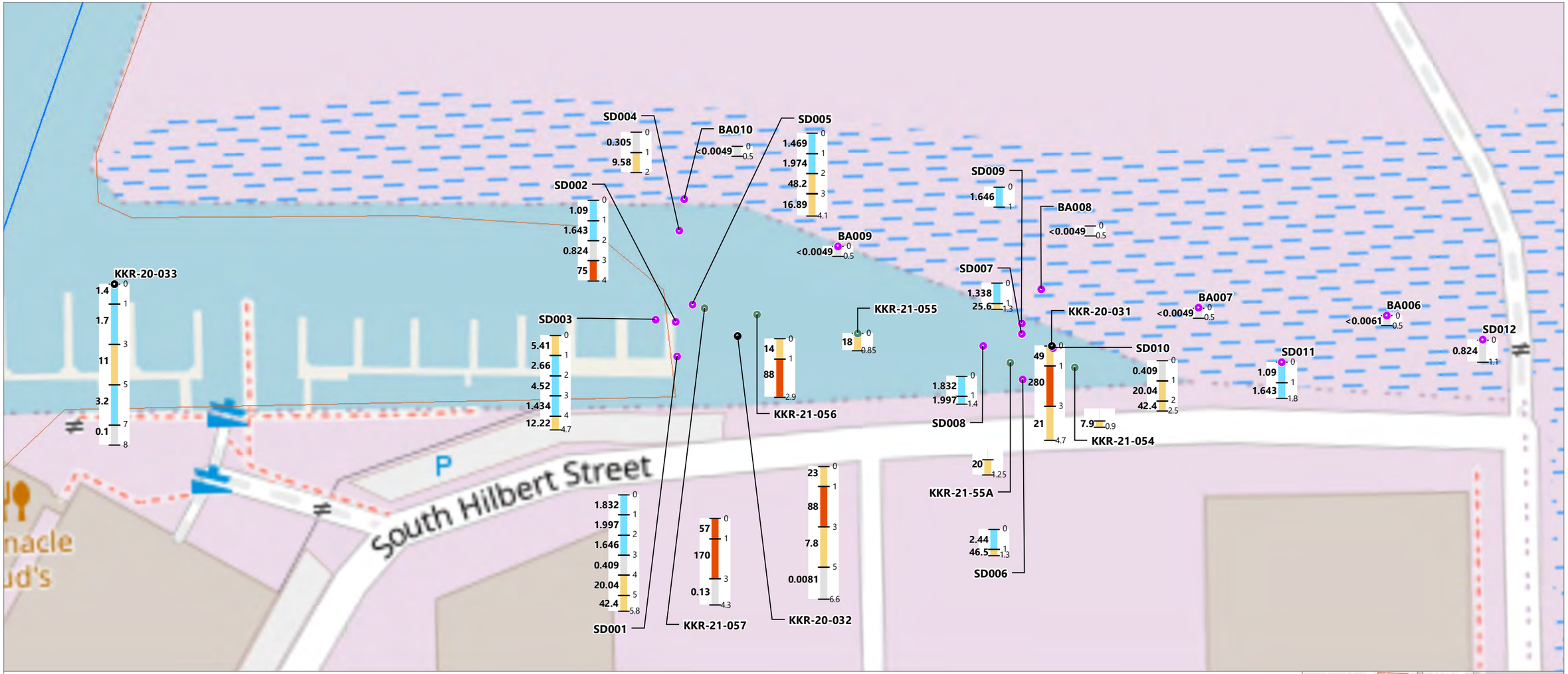
Figure 5-15
Total PCB Aroclor and PCB Congener Results in Kinnickinnic River (Reach 2 and Reach 3)
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin



LEGEND:

- Milwaukee Estuary AOC
- 2019 Sample Location (n = 17)
- 2020 Sample Location (n = 3)
- 2021 Sample Location (n = 5)
- Federal Navigation Channel

SAMPLE ID
Depth (ft.)
0
1
2
3
4
5

PCBs (mg/kg)
< 1
1 - < 5
5 - 50
> 50

NOTES:
1. Horizontal datum: Wisconsin State Plane, South Zone, North American Datum of 1983 (NAD83), U.S. Feet
2. Vertical datum: International Great Lakes Datum of 1985 (IGLD85), U.S. Feet.
3. Core counts only include samples within Skipper Bud's Slip
4. PEC values were obtained from the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application. Publication No. WT-732 2003 (Wisconsin Department of Natural Resources, 2003).
5. 2019 Total PCB Aroclor results obtained from Site Investigation Report for Grand Trunk Wetland Parcel, 1900 South Marina Drive Milwaukee, Wisconsin (December 2020). 2020 Total PCB Aroclor results obtained from 100% Final Site Investigation Report for Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern (August 2021).

AOC: Area of Concern
PEC: Probable Effects Concentration
mg/kg: milligrams per kilogram

0 100
Feet

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Figure 6-1
Comparison of Total PCB Aroclors from Samples Collected in 2019, 2020, and 2021
Characterization of Sediments in Kinnickinnic River and Milwaukee Bay of the Milwaukee Estuary Area of Concern
Milwaukee, Wisconsin