Clean Water Act Section 404(b)(1) Contaminant Determination

Maintenance Dredging and Beneficial Use
Kenosha Harbor, Kenosha, Wisconsin

Environmental Assessment Appendix 2

Completed by:
U.S. Army Corps of Engineers, Chicago District
231 South LaSalle Street
Chicago, Illinois 60604

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1. Introduction

The U.S. Army Corps of Engineers (USACE), under its operations and maintenance authority, proposes to provide suitable sandy dredged material from maintenance dredging of Kenosha Harbor to nourish an eroding shoreline at the Kenosha Dunes.

The following document was prepared by the U. S. Army Corps of Engineers (USACE) Chicago District, to state and evaluate information regarding the effects of the proposed discharge of dredged material into waters of the United States. The following evaluation was prepared in accordance with Section 404(b)(1) of the Clean Water Act (CWA), Public Law 92-500 and with the regional guidances, *Great Lakes Dredged Material Testing and Evaluation Manual* (USEPA and USACE 1998b) and *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual* (USEPA and USACE 1998a), also known as the "Inland Testing Manual."

2. Project Description

2.1. Location

Kenosha Harbor is a Federal navigation project in southern Lake Michigan at Kenosha, Wisconsin. The harbor is located approximately 35 miles south of Milwaukee, and 55 miles north of Chicago, along the western Lake Michigan coast. The proposed placement site, the Kenosha Dunes, are located approximately two miles south of the harbor within the Chiwaukee Prairie State Natural Area (Figure 1).

2.2. Background

Kenosha Harbor is a manmade harbor authorized in 1899. The harbor was originally developed as a commercial harbor, although the uses are primarily recreational now. A Coast Guard station is located within the harbor. The authorized project depths vary from 21 to 27 feet, although the typical maintenance depth is 20 feet. Dredging is performed periodically to maintain the waterway. The USACE last dredged the harbor entrance in 2014; the sediment was considered clean and was placed upland on City property that is currently used as a park. The City of Waukegan dredged the harbor entrance in 2019; the sediment was considered clean and was placed along the eroded shoreline near a City water treatment facility located south of the harbor. Dredging is proposed for 2020/2021, and is expected to occur periodically afterwards. At this time, only the harbor entrance is being maintained, since the inner harbor had sufficient depth for recreational vessels.

Figure 1: Kenosha Harbor and Kenosha Dunes Shore Nourishment Area

2.3. Sediment Placement Site

The current project for shoreline nourishment provides immediate relief while the Southwestern Wisconsin Coastal Resilience Project[1] continues to work towards a long-term solution, such as offshore submerged breakwaters to reduce wave energy at the shore. According to the Coastal Resilience Project webpage,[2] "Kenosha Dunes has experienced severe erosion in recent years that has resulted in the loss of up to 25 feet per year of the dunes since 2014 [as] a number of large storms have created extreme waves that, combined with above average water levels on the lake, have battered the shoreline." A degraded revetment was damaged by the storms and no longer provides protection (Figure 2). Rapid erosion is expected to continue with projected high water levels on Lake Michigan for the foreseeable future. The current project for shoreline nourishment provides immediate relief while the Coastal Resilience Project continues to work towards a long-term solution, such as offshore submerged breakwaters to reduce wave energy at the shore.

1 The Southwestern Wisconsin Coastal Resilience Project is a collaborative effort to enhance coastal resilience in southeast Wisconsin. See https://sewicoastalresilience.org/about/project-overview/
2 https://sewicoastalresilience.org/local-initiatives/restoring-kenosha-dunes/

Figure 2: Kenosha Dunes in April 2018, showing erosion and collapsed Revetment

3. Tier 1 Analysis

3.1. Approach

The U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE) jointly developed the *Great Lakes Dredged Material Testing and Evaluation Manual* to establish procedures for evaluating potential environmental impacts associated with the discharge of dredged material in inland waters, near coastal waters, and surrounding environs. This document outlines a structured, sequential approach to sediment evaluation and testing to determine if dredged sediment from harbors and rivers tributary to the Great Lakes may be disposed in open-waters of the Great Lakes. The objective of the tiered testing approach is to make optimal use of resources in generating the required information for a factual determination of compliance with the Clean Water Act Section 404(b)(1), using an integrated chemical, physical, and biological evaluation approach.

3.2. Tier 1 Objectives

The purpose of the Tier 1 evaluation is to compile readily available, existing information in order to make a factual determination regarding compliance with the Clean Water Act (CWA) Section 404(b)(1), and to generate a list of "Contaminants of Concern". Disposal operations that are excluded from testing or have historic data sufficient for the factual determination may proceed without additional testing. If a factual determination of non-compliance can be made and it is determined that the dredged sediments will not be disposed in open water, additional testing is not required, except as necessary for consideration of other disposal options. If the information is insufficient for a factual determination, then it is deemed inconclusive and a Tier 2 evaluation is performed. If necessary, a Tier 3 evaluation is performed to determine toxic effects of sediment contaminants on biological life. The Tier 1 evaluation is not intended to provide a comprehensive investigation of all potential sources of sediment contamination, but rather is intended to indicate whether sediment bulk chemistry testing is warranted based on existing data and potential sources of sediment contamination.

3.3. Sediment Sources

Sediment deposition in Kenosha Harbor is primarily the result of littoral transport of Lake Michigan sand from areas north of Kenosha Harbor. Littoral transport is the movement of sediments in the nearshore zone by waves and current. The littoral zone of Lake Michigan is generally within 5 to 10 miles of shore and the littoral transport travels parallel to the coast in either a clockwise or counterclockwise direction. The predominant direction of littoral transport outside Kenosha Harbor is from north to south. Littoral transport is the assumed source of the frequent shoaling experienced near the harbor entrance.

Upland sources may contribute to sediment shoaling in the channel portion of Kenosha Harbor. Non-point upland sources (erosion) as well as point sources such as stormsewers can contribute solids which settle in the channel. Since there is no natural

tributary to this channel, it is expected that upland sources of sediment would be relatively minor compared to the rate of littoral transport.

3.4. Contaminant Transport and Pathways

3.4.1. Land Use

Kenosha Harbor is within the city limits, along the eastern edge of the city. The harbor is located within the "Downtown" zoning district, and the districts of Harborside and Harbor Park are surrounding the harbor. The predominant land uses in these districts are residential, recreational, and commercial (restaurants, service businesses). The end of the channel is a harbor, and associated marine services are located near that end of the harbor. Much of the property immediately adjacent to the waterway is recreational or open space, with Simons Island forming the eastern side of the harbor. Housing in Harbor Park is newer multi-family condominiums and townhouses. Housing in Harborside includes a mix of single family residences and multi-family housing. Commercial operations are mixed in with the residential properties.

Kenosha Harbor was originally developed as a commercial harbor. A 1940 photo[3] shows the harbor with large commercial buildings, including the Simmons Company factory (a bedding manufacturer). (Figure 3) Based on historic Sanborn Insurance maps[4], businesses which existed along the harbor at various times included lumber yards, mills, coal sheds, breweries, an oil gassification process, a gas and electric company, a yacht club, a german club, fuel storage/shipping operations, a wagon company, Simmons Company, Amercian Motors Corporation, and a large tannery (Allens). Several of these industries are closely identified with historical pollutants, such as organic compounds (including solvents) and metals.

3.4.2. Soil Type

Soils near Kenosha Harbor consist of sands and sandy loams. Beach – dune areas exist directly along the shoreline. A long open beach area on the east edge of Simmons Island is directly north of the harbor entrance; these sands may wash and blow over the existing breakwaters during storms. Inland, the dune features are obliterated by urban development. Lake Michigan sands comprise the floor of the harbor and adjacent water areas. The Kenosha Dunes area is also predominately sandy soils, with prairie and dune habitat on the upland areas, and an eroded beach along the lakefront.

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3 Wisconsin Historical Society Archives, Digital Images. Accessed at: https://www.wisconsinhistory.org/Records/Article/CS15285
4 Wisconsin Historical Society Maps, Accessed at: http://content.wisconsinhistory.org/cdm/search/collection/maps/

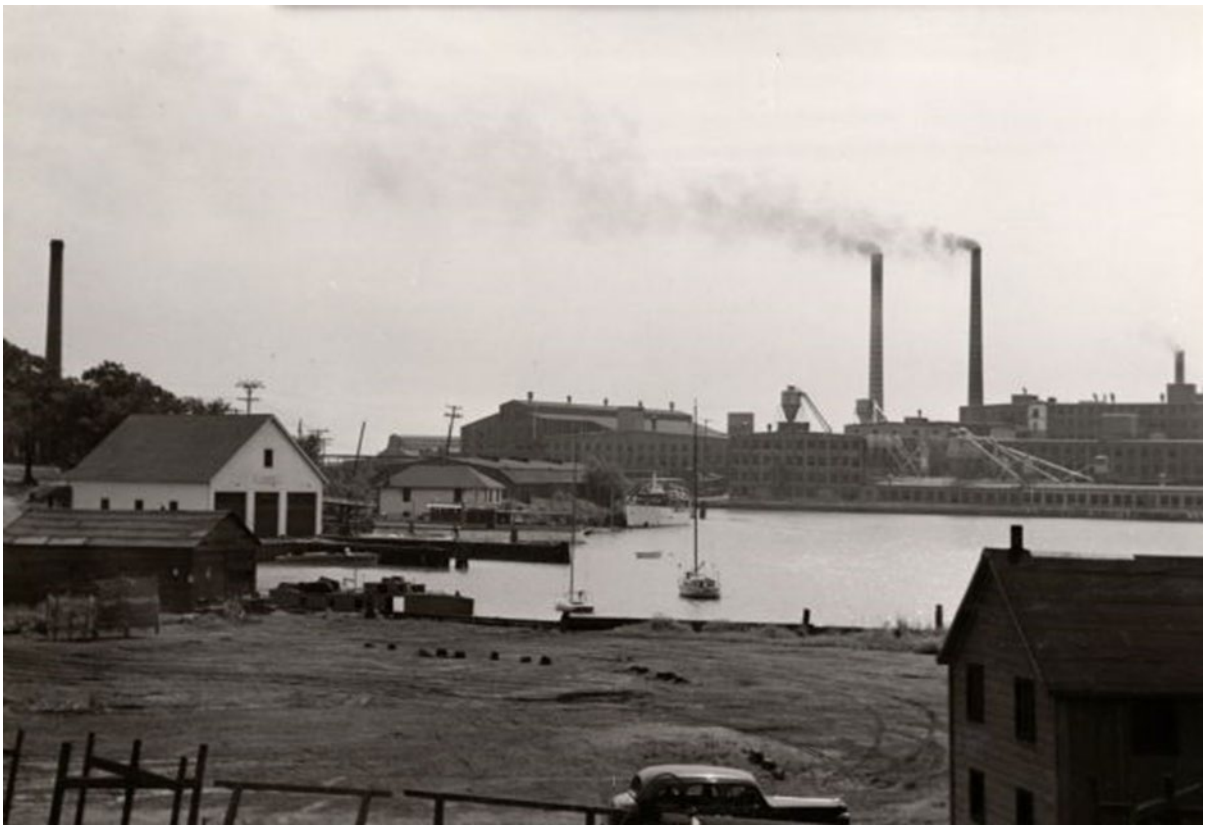
Figure 3: Kenosha Harbor circa 1940, Simmons Company factory in background.

3.4.3. Hydrology and Tributary Flows

Kenosha Harbor is a man-made harbor positioned on the western shore of Lake Michigan and is not connected to any inland waterways or upland tributaries. As such, Kenosha Harbor does not receive any perennial or intermittent upland stream flow. Water within the harbor is relatively stagnant and experiences minimal flow.

The natural hydrology and littoral hydraulic processes of the lakeshore have been completely altered from their natural state. Artificial armoring of the shoreline and the implementation of numerous in-lake structures have impeded the natural littoral and altered natural erosion processes. While the harbor can be subjected to large waves during storms event, the man-made harbor structures dissipates wave energy resulting in much calmer conditions within the confines of the harbor as compared to exposed portions of the shoreline. The hardened structures at Kenosha Harbor and farther north tend to limit littoral transport of sand, which naturally occurred from north to south. This leaves the areas south of the harbor, such as Kenosha Dunes, generally “sand starved” and more prone to erosion.

3.5. Sources of Information Investigated

3.5.1. Database Search

Federal databases were searched using the USEPA Envirofacts[5] system and the Wisconsin Bureau for Remediation and Redevelopment Tracking System (BRRTS)[6] to identify potential sources of sediment contamination in the area of the harbor and the proposed placement site. The Federal databases investigated include: Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Resource Conservation and Recovery Act Information (RCRAInfo); and Toxics Release Inventory (TRI). The National Response Center, formerly the Emergency Response Notification System (ERNS), was searched for spill information. The BRRTS includes information on completed and on-going investigations and clean-ups, sites where continuing obligations are in place, sites with liability exemptions and clarifications (i.e. brownfields), and status updates for sites being addressed under CERCLA. Several sites were identified on properties adjacent to the harbor, while no sites were identified near the proposed placement site. Table 1 summarizes the sites.

There are no active clean-up sites near the harbor. The former leaking underground storage tank (LUST) sites have been closed for a number of years. Although some of these sites appear to have low levels of residual contamination, there is no on-going remediation which indicates that these are not on-going issues. These isolated areas are adjacent to the upstream portion of the harbor, and thus would not be expected to have impacted the harbor entrance, where dredging is planned at this time.

Table 1: Summary of database search results

Site	Status or Issue
U.S. Coast Guard Station	Conditionally exempt small quantity generator, no violations
Great Lakes Yacht Sales	Conditionally exempt small quantity generator, no violations
Simmons Island, Kenosha City #6	Former LUST, closed as of 2013
U.S. Coast Guard Station	Former LUST, closed as of 2013
Yacht Club	Former LUSTs (2), one with residual groundwater contamination, closed as of 2000.
Boathouse Pub	Former LUST, with residual groundwater and soil contamination, closed as of 2002
Holiday Inn Express Harborside	Closed Environmental Remediation Program site (aka, brownfield) with residual soil contamination. Closed in 2004.

5 USEPA Envirofacts, Accessed at: https://enviro.epa.gov/
6 Wisconsin DNR Bureau for Remediation and Redevelopment Tracking System, accessed at: https://dnr.wi.gov/botw/SetUpBasicSearchForm.do

3.5.2. Historic Sediment Data

The most recent and useful sediment samples are from 2013 (USACE) and 2018 (City of Kenosha). Both of these sediment sampling events occurred in approximately the same area as proposed for dredging at this time. The sediment results indicated that the material was sandy, with low levels of anthropogenic compounds [metals, polychlorinated biphenyls (PCBs), and polyaromatic hydrocarbons (PAHs)]. Concentrations of the compounds of interest were similar to background concentrations in Kenosha. In both cases, the sediment was found to be suitable for beneficial use. In 2014, harbor sediment was placed upland in a park north of the harbor, as fill materials. In 2019, harbor sediment was placed along the Lake Michigan shoreline near city property, as shoreline protection. The sediment results are discussed further in Section 4.2, below.

3.6. Potential Sources of Sediment Contamination

3.6.1. Agricultural Sources

There are no tributary flows to Kenosha Harbor and no adjacent agricultural areas. Therefore, there appear to be no agricultural sources of sediment contamination.

3.6.2. Industrial and Municipal Discharges, Overflows, and Bypasses

Kenosha Harbor was an industrial harbor prior to the 1970's, when industries began to consolidate and leave the harbor area. Because environmental laws were much less rigorous and industrial practices were different, it is likely that some materials containing metals and organic compounds were discharged into the harbor and adjacent lands. These historic discharges may still impact some areas, however the harbor area has been dredged over the almost 50 years since modern environmental laws were enacted. Based on the general history of the area, it is likely that metals, PCBs, and PAHs are present from historical activities.

3.6.3. Previous Dredging or Fill Discharges

The harbor entrance was dredged most recently in 2014 and 2019. There have been no filling events in the harbor. Aside from the placement of stone revetments along the shoreline at Kenosha Dunes, there are no previous filling events known along the Kenosha Dunes shoreline.

3.6.4. Air Deposition

There are no specific air depositional sources (such as large point emission stacks) which would be likely to contribute significantly to sediment volume or content. The overall urban area undoubtedly contributes emissions from vehicle exhaust and similar anthropogenic sources to the local air, with general deposition of low levels of air pollutants during precipitation events.

3.6.5. Biological Deposition (detritus)

Southern Lake Michigan is known to have potentially large zebra mussel and quagga mussel populations. Although these shells may be present in the sediment, biological detritus is unlikely to contribute significantly to sediment volume or content.

3.7. Tier 1 Conclusion

The southward littoral drift pattern and historic sediment data for Kenosha Harbor suggest that the sediment in the project area are littoral sands and are likely suitable for open-lake or near-shore placement (beach nourishment, coastal erosion control, habitat construction or similar purposes). However, based on an overall evaluation of the historic sediment data from Kenosha Harbor, and the potential sources of sediment contamination identified in this report, the Chicago District, U.S. Army Corps of Engineers concludes that the existing information is insufficient to make a factual determination regarding compliance with the Clean Water Act, Section 404(b)(1). As such, a Tier 2 evaluation is required, which will involve the analysis of representative sediment samples.

3.7.1. Sediment Contaminant List

Based on the information obtained from the Tier I sediment evaluation, a list of potential Contaminants of Concern has been compiled, as shown in Table 2. The constituents indicated on this list should be evaluated through analytical testing during the Tier 2 evaluation.

Table 2. Kenosha Harbor Contaminants of Concern

Parameter	Matrix
Grain size	Sediment
Total PCBs	Sediment
Metals (RCRA 8)	Sediment
PAHs	Sediment

4. Tier II Evaluation

4.1. Tier II Objectives

The purpose of the Tier II evaluation is to determine the sediment quality, including the physical and chemical characteristics. These data will be used to make a factual determination regarding sediment suitability for beneficial use as shoreline protection material and to determine project compliance with the Clean Water Act Section 404(b)(1).

4.2. Sediment data

Four sediment grab samples plus one duplicate samples were taken in the area proposed for dredging. The sample locations are shown in Figure 4. Samples were taken using a ponar, and successive grabs were homogenized by hand. Photos 1 - 5 show the sediment samples.

Sediment samples were analyzed for grain size, conventional parameters (nutrients, organic carbon and similar items), metals, PAHs, and total PCBs. The results are summarized in tables 3 through 6. Included in each table is a summary of the 2013 and 2018 results, represented as a range.

The sediment samples were sandy, with some gravel materials. Sample location 2 had many mussel shells. Sample location 3 was the only sample that had higher fines (20.2%), however the material was overall sandy. In appearance, all samples were sandy without odor or staining.

The sediment contains some nutrients, measured as ammonia, Kjeldahl (organic) nitrogen, and phosphorus. The results from this sampling event are similar to previous events. Metals also were present, again at levels similar to previous results. Of note, lead and mercury levels are both low and similar to previous results; these metals are often indications of environmental impacts and since they have identified human and environmental effects, are a good general indication of the suitability of the sediment for beneficial use. For Kenosha Harbor, the low metals concentrations are an indication of the overall good quality of the sediment. The quality of the sediment is confirmed by the PAH and PCB results. Low concentrations of these compounds are present, and reflect anthropogenic influences on Kenosha Harbor and on Lake Michigan in general. The concentrations measured during the most recent sampling event are in line with previous sediment sampling results.

Figure 4: Kenosha Harbor 2020 Sampling Points

Point	LAT	LONG
KH_2020_01 and KH_2020_DUP	42°35.308’N	87°48.779’W
KH_2020_02	42°35.288’N	87°48.569’W
KH_2020_03	42°35.311’N	87°48.544’W
KH_2020_04	42°35.336’N	87°48.446’W

Photo 1: Sample KH-2020-01

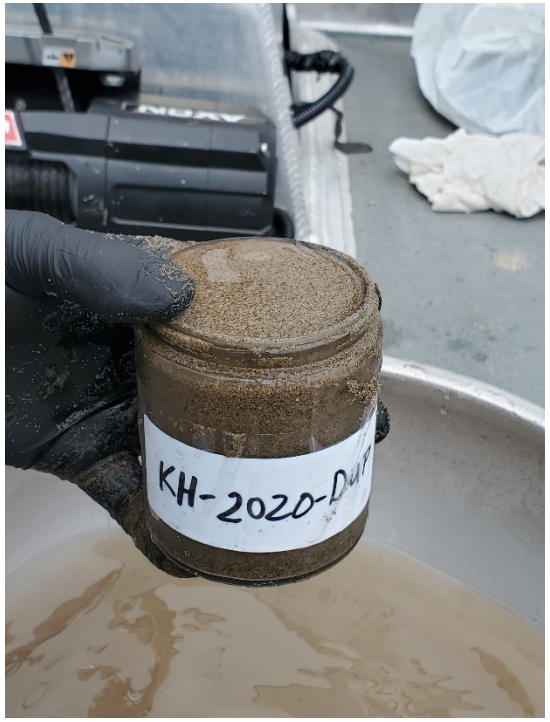

Photo 2: Sample KH-2020-Dup (location 1)

Photo 3: Sample KH-2020-02; sample location included many mussel shells

Photo 4: Sample KH-2020-03

Photo 5: Sample KH-2020-04

Table 3: Grain Size Analysis

ANALYTE	UNITS	KH-2020-01	KH-2020-01 DUP	KH-2020-02	KH-2020-03	KH-2020-04	2018 range	2013 range
Gravel	%	0.0	0.0	19.0	0.1	0.1	0.7 - 1.4	0.0 - 0.3
Coarse Sand	%	0.0	0.0	6.6	0.1	0.2		0.1 - 1.0
Medium Sand	%	0.5	0.4	7.1	1.5	1.6		10.3 - 15.4
Fine Sand	%	97.9	96.5	62.8	78.1	92.0		75.2 - 84.6
Total Sand	%	98.4	96.9	76.5	79.7	93.8	95.3 - 98.4	89.4 - 97.7
Silt	%	0.6	2.0	1.6	18.3	5.2	0.1 - 1.2	2.0 - 10.4 *
Clay	%	1	1.1	2.9	1.9	0.9	0.1 - 0.8	

*Fines = Silt + Clay

Table 4: Conventional Parameters

ANALYTE	Reporting Limit	UNITS	KH-2020-01	KH-2020-01 DUP	KH-2020-02	KH-2020-03	KH-2020-04	2018 range	2013 range
% Solids	0.500	% Solids	80.5	82.6	76.9	79.0	78.8		77 - 79
Moisture Content	0.5	%	22.9	19.0	34.2	24.7	30.7		21 - 23
Total Organic Matter	0.5	%	0.7	0.7	1.6	1.2	1.4		
Total Volatile Solids	0.50	%	0.72	0.67	1.6	1.2	1.4		0.86 - 2.2
Total Organic Carbon	1000	mg/Kg	24000	1500	11000	19000	16000		2800 - 6400
Ash Content	0.5	%	99.3	99.3	98.4	98.8	98.6		
Ammonia as N	0.0998	mg/kg	0.625	1.01	2.62	2.23	1.34		16 - 97
Cyanide, Total	0.25	mg/Kg dry	<0.25 F1	<0.25	<0.25	<0.25	<0.25		0.48 - <0.62
Nitrogen, Kjeldahl	190	mg/Kg dry	<190	210	620	290	170 *Ja*	94 - 120	120 - 430
Oil and Grease	94.0	mg/kg dry wt.	140	33.3	113	233	93.3		<120 - 350
Phosphorus	6.68	mg/kg	158	172	173	195	188	100 - 190	18 - 90

Ja = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

Table 5: Metals

ANALYTE	Reporting Limit	UNITS	KH-2020-01	KH-2020-01 DUP	KH-2020-02	KH-2020-03	KH-2020-04	2018 range	2013 range
Arsenic-75	0.167	mg/kg	2.14	2.05	5.18	4.79	3.53	3.4 - 3.9	3.9 - 5.0
Cadmium-114	0.167	mg/kg	0.132 J	0.347	<0.200 U	0.237	0.145 J	0.12 - 0.16	1.1 - 1.6
Chromium-53	0.167	mg/kg	5.95	6.34	7.18	7.24	5.72	7.3 - 32	6.7 - 9.8
Copper-65	0.167	mg/kg	5.12	5.18	7.54	9.05	7.12	6.8 - 14	6.4 - 13
Lead-208	0.167	mg/kg	5.96	13.8	9.52	10.9	7.68	5.6 - 6.6	7.1 - 15
Mercury	0.00389	mg/kg	0.00561	0.00501	0.0135	0.0161	0.0111	<0.0069 - 0.01	0.014 - 0.025
Zinc-66	0.167	mg/kg	53.1	87.3	31.5	32.4	32.0	36 - 47	11.0 - 23

J = Detected but below the Reporting Limit; quantity is estimated

Table 6: PAHs and PCBs

ANALYTE	Reporting Limit	UNITS	KH-2020-01	KH-2020-01 DUP	KH-2020-02	KH-2020-03	KH-2020-04	2018 range	2013 range
1-Methylnaphthalene	2.40	ug/kg	1.06 *J*	0.972 *J*	16.4	18.4	6.54	<9.2 - <11	
2-Methylnaphthalene	2.40	ug/kg	2.50	2.34	25.7	29.8	10.5	8.8 - 16	13 - 40
Acenaphthene	2.40	ug/kg	<2.40 *U*	<2.26 *U*	14.4	29.9	7.45	<6.8 - <16	13 - 52
Acenaphthylene	2.40	ug/kg	<2.4 *U*	<2.26 *U*	3.09	3.89	1.54 *J*	<4.8 - <5.7	11.0 - 34
Anthracene	2.40	ug/kg	2.46	1.91 *J*	31.1	58.5	21.2	<7.8 - <33	30 - 170
Benzo (a) anthracene	2.40	ug/kg	15.0	9.43	55.8	225	44.8	16 - 110	61 - 330
Benzo (a) pyrene	2.40	ug/kg	22.4	17.0	97.3	336	60.0	14 - 120	66 - 360
Benzo (b) fluoranthene	2.40	ug/kg	26.2	19.8	69.8	256	45.2	<8.1 - 200	82 - 450
Benzo (g,h,i) perylene	2.40	ug/kg	18.7	14.4	54.9	160	47.1	<12 - 81	32 - 200
Benzo (k) fluoranthene	2.40	ug/kg	21.6	16.3	91.2	309	56.1	<11 - 90	38 - 170
Chrysene	2.40	ug/kg	22.6	16.3	89.5	240	58.6	27 - 170	76 - 360
Dibenz (a,h) anthracene	2.40	ug/kg	3.61	3.22	16.4	36.7	12.2	<7.2 - 160	<40 - 110
Fluoranthene	2.40	ug/kg	31.8	20.1	184	508	113	67 - 440	180 - 840
Fluorene	2.40	ug/kg	1.12 *J*	0.870 *J*	18.4	36.1	9.33	9.2 - 21	19 - 73
Indeno (1,2,3-cd) pyrene	2.40	ug/kg	17.2	15.7	54.6	208	53.2	<9.7 - 76	33 - 190
Naphthalene	2.40	ug/kg	2.11 *J*	1.88 *J*	16.8	34.9	4.43	<5.8 - 9.1	12.0 - 57
Phenanthrene	2.40	ug/kg	12.3	8.42	129	276	72.0	53 - 270	110 - 550
Pyrene	2.40	ug/kg	37.0	23.0	193	497	114	45 - 260	140 - 650
Total PCBs		ug/kg	17.24	15.82	470.4	552.8	103.69	59 - 170	<3.7

U = Nondectable

J = Detected but below the Reporting Limit; quantity is estimated

4.3. Tier II Conclusions

In summary, the Chicago District has completed a contaminant determination for sediments to be dredged from Kenosha Harbor, Kenosha, Wisconsin, as required by Section 404(b)(1) of the Clean Water Act (CWA). The determination used a tiered approach that included physical and chemical tests of sediment. The evaluation indicates that the sediment is sandy and of good chemical quality. It is suitable for use as shoreline protection material along Lake Michigan. This evaluation includes the sediment in the harbor entrance, but does not cover the full extent of the federal channel. Additional evaluation should be conducted for the upstream portions of the channel, if the shoaled sediment will be dredged to authorized depth.

5. References

ASTM Standard E1527. 2013. “13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”. West Conshohocken, PA: ASTM International. http://www.astm.org/Standards/E1527.htm.

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6. Appendix A: Sediment Results

Environmental Sampling Field Notes

U.S. Army Corps of Engineers – Chicago District

Project Name: Kenosha Dredging Project

Project Location: Kenosha, WI

Site Name / Site ID: Kenosha Harbor

Project Manager: Jeff Zuercher (PM); Jennifer Miller (Tech Lead)

Site Description

Weather: Approx 70-deg F. light rain.

Site Conditions: 1-foot waves. No harbor traffic

Water Elevation: 582.1 ft IGLD85 Depth to Sediment: 17.5 ft

Latitude / Vertical Position: 42 35.308N

Longitude / Horizontal Position: 87 48.779 W

Sample Location Description: Harbor entrance channel

Sample Data

Sample ID: KH-2020-01 (+ duplicate sample)

Date Collected: 5/28/2020 Time Collected: 1005 (DUP 1036)

Matrix Description (visual description, odor, recovery, etc): Coarse sand, minor amounts of debris. Good recovery with sampling equipment

Required Analysis: grain size, ammonia, Kjeldahl nitrogen, oil/grease, cyanide, COD, TVS, TOC, PCBs, TAL Metals, phosphorous, PAHs

Collection Personnel: K Granberg, B O'Neil

Other Notes: 9" Ponar and davit crane used for sample collection.

Environmental Sampling Field Notes

U.S. Army Corps of Engineers – Chicago District

Project Name: Kenosha Dredging Project

Project Location: Kenosha, WI

Site Name / Site ID: Kenosha Harbor

Project Manager: Jeff Zuercher (PM); Jennifer Miller (Tech Lead)

Site Description

Weather: Approx 70-deg F. Overcast with brief heavy downpours and gusty conditions.

Site Conditions: 1-foot waves. No harbor traffic

Water Elevation: 582.1 ft IGLD85 Depth to Sediment: 25.0 ft

Latitude / Vertical Position: 42 35.288N

Longitude / Horizontal Position: 87 48.569 W

Sample Location Description: Harbor entrance channel, south end of channel.

Sample Data

Sample ID: KH-2020-02

Date Collected: 5/28/2020 Time Collected: 1101

Matrix Description (visual description, odor, recovery, etc): Large amount of zebra or quaga mussel debris in area. Some sand

Required Analysis: grain size, ammonia, Kjeldahl nitrogen, oil/grease, cyanide, COD, TVS, TOC, PCBs, TAL Metals, phosphorous, PAHs

Collection Personnel: K Granberg, B O'Neil

Other Notes: 9" Ponar and davit crane used for sample collection

Environmental Sampling Field Notes

U.S. Army Corps of Engineers – Chicago District

Project Name: Kenosha Dredging Project

Project Location: Kenosha, WI

Site Name / Site ID: Kenosha Harbor

Project Manager: Jeff Zuercher (PM); Jennifer Miller (Tech Lead)

Site Description

Weather: Approx 70-deg F. Overcast, fog, light rain.

Site Conditions: Small waves, 1-ft

Water Elevation: 582.1 ft IGLD85 Depth to Sediment: 22 ft

Latitude / Vertical Position: 42 35.311N

Longitude / Horizontal Position: 87 48.544 W

Sample Location Description: Sediment collected near harbor mouth, south/west of light house. Original location (42 35.306N 87 48.513W) abandoned due to heavy woody debris and no sediment recovery.

Sample Data

Sample ID: KH-2020-03

Date Collected: 5/28/2020 Time Collected: 1136

Matrix Description (visual description, odor, recovery, etc): Sandy material, coarse to fine sand. Some cohesive clays and small amount of debris.

Required Analysis: grain size, ammonia, Kjeldahl nitrogen, oil/grease, cyanide, COD, TVS, TOC, PCBs, TAL Metals, phosphorous, PAHs

Collection Personnel: K Granberg, B O'Neil

Other Notes:

Environmental Sampling Field Notes

U.S. Army Corps of Engineers – Chicago District

Project Name: Kenosha Dredging Project

Project Location: Kenosha, WI

Site Name / Site ID: Kenosha Harbor

Project Manager: Jeff Zuercher (PM); Jennifer Miller (Tech Lead)

Site Description

Weather: Approx 70-deg F. Overcast, fog, light rain.

Site Conditions: Small waves, 1-ft

Water Elevation: 582.1 ft IGLD85 Depth to Sediment: 18 ft

Latitude / Vertical Position: 42 35.336N

Longitude / Horizontal Position: 87 48.446 W

Sample Location Description: East of lighthouse, within the breakwater area at the harbor mouth.

Sample Data

Sample ID: KH-2020-04

Date Collected: 5/28/2020 Time Collected: 1149

Matrix Description (visual description, odor, recovery, etc): Fine grained sand, limited recovery with each bucket

Required Analysis: grain size, ammonia, Kjeldahl nitrogen, oil/grease, cyanide, COD, TVS, TOC, PCBs, TAL Metals, phosphorous, PAHs

Collection Personnel: K Granberg, B O'Neil

Other Notes: 9" Ponar and davit crane used for sample collection

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

10 July 2020

Jennifer Miller
Chicago District
231 S. LaSalle, Suite 1500
Chicago, IL 60604

RE: Kenosha Dredge

Enclosed are the results of analyses for samples received by the laboratory on 29-May-2020. The samples associated with this report will be held for 90 days from the date of this report. The raw data associated with this report will be held for 5 years from the date of this report. If you need us to hold onto the samples or the data longer then these specified times, you will need to notify us in writing at least 30 days before the expiration dates. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Allyson Wooley For Jenifer Milam Netchaev
Database Manager

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

WORK ORDER SUMMARY

Sample ID	Laboratory ID	Matrix	Date Sampled	Date of Work Order
KH-2020-01	20E2903-01	Soil/Sediment	28-May-2020	29-May-2020
KH-2020-02	20E2903-02	Soil/Sediment	28-May-2020	29-May-2020
KH-2020-03	20E2903-03	Soil/Sediment	28-May-2020	29-May-2020
KH-2020-04	20E2903-04	Soil/Sediment	28-May-2020	29-May-2020
KH-2020-DUP	20E2903-05	Soil/Sediment	28-May-2020	29-May-2020

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Case Narrative

PAH - Some samples had to be diluted due to concentrations that exceeded the calibration range; these dilutions resulted in higher DLs/RLs for these analytes. Samples were analyzed several times due to high recoveries in the continuing calibration verifications (CCVs). Data was finally accepted even though some CCVs still had high recoveries. Benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenz(ah)anthracene, indeno(123cd)pyrene, and benzo(ghi)perylene had high recoveries in the BS/BSD and MS/MSD as well as in some of the CCVs. These high recoveries suggest a possible high bias in the data.

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Notes and Definitions

U	Analyte included in the analysis, but not detected
RPD-06	RPD exceeds acceptance limit.
QM-11	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to inherent analyte concentration greater than the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
Q	Value is outside of acceptance limits.
Ja	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J	Detected but below the Reporting Limit (Limit of Quantitation); therefore, result is an estimated concentration.
F1	MS and/or MSD recovery exceeds control limits.
0.0	0.0
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-01

20E2903-01 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
			ERDC-EL-EP-C					
Semivolatile Organics by GC/MS Selective Ion Monitoring								
1-Methylnaphthalene	**1.06**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	J
2-Methylnaphthalene	**2.50**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Acenaphthene	ND	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	U
Acenaphthylene	ND	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	U
Anthracene	**2.46**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) anthracene	**15.0**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) pyrene	**22.4**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (b) fluoranthene	**26.2**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (g,h,i) perylene	**18.7**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (k) fluoranthene	**21.6**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Chrysene	**22.6**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Dibenz (a,h) anthracene	**3.61**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluoranthene	**31.8**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluorene	**1.12**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	J
Indeno (1,2,3-cd) pyrene	**17.2**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Naphthalene	**2.11**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	J
Phenanthrene	**12.3**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Pyrene	**37.0**	0.740	2.40	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Surrogate: 2-Fluorobiphenyl	**22**		*58.5 %*	*40-105*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Surrogate: Terphenyl-dl4	**38**		*103 %*	*30-125*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Classical Chemistry Parameters								
% Solids	**80.5**	0.500	0.500	% Solids	04-Jun-2020	04-Jun-2020	ASTM D2216-98	
Metals EPA 6000/7000 Series Methods								
Antimony	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	GF-AAS 7000	U

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Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-01

20E2903-01 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
ERDC-EL-EP-C								
Metals by EPA 6000/7000 Series Methods								
Mercury	**0.00561**	0.00389	0.00389	mg/kg	05-Jun-2020	16-Jun-2020	EPA 7474	
Silver	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	EPA 7000	U
Aluminum	**1450**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Barium	**9.81**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Calcium	**38900**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Iron	**7260**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Magnesium	**19900**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Manganese	**296**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Phosphorus	**158**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Potassium	**237**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Sodium	**128**	1.34	6.68	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Arsenic-75 [2]	**2.14**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Beryllium-9 [2]	ND	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	U
Cadmium-114 [2]	**0.132**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	J
Chromium-53 [2]	**5.95**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Cobalt-59 [1]	**1.76**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Copper-65 [2]	**5.12**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Lead-208 [1]	**5.96**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nickel-62 [2]	**6.58**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Selenium-82 [2]	**0.183**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Thallium-205 [1]	ND	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	U
Vanadium-51 [2]	**18.0**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Zinc-66 [2]	**53.1**	0.0835	0.167	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nutrients								
Ammonia as N	**0.625**	0.0299	0.0998	mg/kg	09-Jun-2020	09-Jun-2020	EPA 350.1	

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-01

20E2903-01 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
ERDC-EL-EP-C								
Polychlorinated Biphenyls by EPA Method 8082								
PCB-1016	ND	0.52	1.57	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1221	ND	0.52	1.57	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1232	ND	0.52	1.57	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1242	ND	0.52	1.57	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1248	**8.43**	0.52	1.57	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1254	**5.37**	0.52	1.57	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1260	**3.44**	0.52	1.57	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	**5.74**		*88.3 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
Surrogate: PCB 198 (2C)	**3.43**		*92.7 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
N-Hexane Extractable Material by Extraction and Gravimetry								
Oil and Grease	**140**	23.5	94.0	mg/kg dry wt.	05-Jun-2020	05-Jun-2020	EPA 9071B	
SM4500Norg_C Nitrogen, Total Kjeldahl								
Nitrogen, Kjeldahl	ND	110	190	mg/Kg dry	23-Jun-2020	23-Jun-2020	4500 NorgC-2011	
D422 Grain Size								
Clay	**1**			%	28-May-2020	05-Jun-2020	D422	
Coarse Sand	0.0			%	28-May-2020	05-Jun-2020	D422	
Fine Sand	**97.9**			%	28-May-2020	05-Jun-2020	D422	
Gravel	0.0			%	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 1 - Percent Finer	**1.5**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 2 - Percent Finer	**1**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 3 - Percent Finer	**1**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 4 - Percent Finer	**1**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 5 - Percent Finer	**1**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 6 - Percent Finer	**0.5**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 7 - Percent Finer	**0.5**			% Passing	28-May-2020	05-Jun-2020	D422	
Medium Sand	**0.5**			%	28-May-2020	05-Jun-2020	D422	
Sand	**98.4**			%	28-May-2020	05-Jun-2020	D422	
Sieve Size #10 - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #100 - Percent Finer	**6.6**			% Passing	28-May-2020	05-Jun-2020	D422	

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-01

20E2903-01 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Eurofins TestAmerica, Burlington								
D422 Grain Size								
Sieve Size #20 - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #200 - Percent Finer	**1.6**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #4 - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #40 - Percent Finer	**99.5**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #60 - Percent Finer	**65.4**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #80 - Percent Finer	**17.3**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.375 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.75 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1.5 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 2 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 3 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Silt	**0.6**			%	28-May-2020	05-Jun-2020	D422	
2540G Total, Fixed, and Volatile Solids								
Total Volatile Solids	**0.72**	0.50	0.50	%	28-May-2020	07-Jun-2020	SM 2540G	
D_2974 Moisture, Ash and Organic Matter								
Ash Content	**99.3**	0.5	0.5	%	28-May-2020	08-Jun-2020	ASTM D2974	
Moisture Content	**22.9**	0.5	0.5	%	28-May-2020	08-Jun-2020	ASTM D2974	
Total Organic Matter	**0.7**	0.5	0.5	%	28-May-2020	08-Jun-2020	ASTM D2974	
EPA Lloyd_Kahn Organic Carbon, Total (TOC)								
Total Organic Carbon	**24000**	680	1000	mg/Kg	28-May-2020	08-Jun-2020	EPA Lloyd Kahn	

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Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

KH-2020-01

20E2903-01 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Eurofins TestAmerica, Pittsburgh								
SW 846 9014 Cyanide								
Cyanide, Total	ND	0.077	0.25	mg/Kg dry	08-Jun-2020	09-Jun-2020	SW 846 EPA 9014	F1

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-02

20E2903-02 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
			ERDC-EL-EP-C					
Semivolatile Organics by GC/MS Selective Ion Monitoring								
1-Methylnaphthalene	**16.4**	0.769	2.50	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
2-Methylnaphthalene	**25.7**	0.769	2.50	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Acenaphthene	**14.4**	0.769	2.50	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Acenaphthylene	**3.09**	0.769	2.50	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Anthracene	**31.1**	0.769	2.50	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) anthracene	**55.8**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) pyrene	**97.3**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (b) fluoranthene	**69.8**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (g,h,i) perylene	**54.9**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (k) fluoranthene	**91.2**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Chrysene	**89.5**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Dibenz (a,h) anthracene	**16.4**	0.769	2.50	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluoranthene	**184**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluorene	**18.4**	0.769	2.50	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Indeno (1,2,3-cd) pyrene	**54.6**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Naphthalene	**16.8**	0.769	2.50	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Phenanthrene	**129**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Pyrene	**193**	7.69	25.0	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Surrogate: 2-Fluorobiphenyl	**20**		*50.9 %*	*40-105*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Surrogate: Terphenyl-dl4	**32**		*82.3 %*	*30-125*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Classical Chemistry Parameters								
% Solids	**76.9**	0.500	0.500	% Solids	04-Jun-2020	04-Jun-2020	ASTM D2216-98	
Metals by EPA 6000/7000 Series Methods								
Antimony	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	GF-AAS 7000	U

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3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-02

20E2903-02 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
ERDC-EL-EP-C								
Metals by EPA 6000/7000 Series Methods								
Mercury	**0.0135**	0.00382	0.00382	mg/kg	05-Jun-2020	16-Jun-2020	EPA 7474	
Silver	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	EPA 7000	U
Aluminum	**3460**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Barium	**20.7**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Calcium	**49000**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Iron	**8630**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Magnesium	**19700**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Manganese	**417**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Phosphorus	**173**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Potassium	**763**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Sodium	**223**	1.60	7.98	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Arsenic-75 [2]	**5.18**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Beryllium-9 [2]	**0.204**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Cadmium-114 [2]	ND	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	U
Chromium-53 [2]	**7.18**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Cobalt-59 [1]	**2.85**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Copper-65 [2]	**7.54**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Lead-208 [1]	**9.52**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nickel-62 [2]	**6.80**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Selenium-82 [2]	**0.210**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Thallium-205 [1]	**0.180**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	J
Vanadium-51 [2]	**7.71**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Zinc-66 [2]	**31.5**	0.0998	0.200	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nutrients								
Ammonia as N	**2.62**	0.291	0.969	mg/kg	09-Jun-2020	09-Jun-2020	EPA 350.1	

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-02

20E2903-02 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
			ERDC-EL-EP-C					
Polychlorinated Biphenyls by EPA Method 8082								
PCB-1016	ND	0.54	1.63	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1221	ND	0.54	1.63	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1232	ND	0.54	1.63	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1242	ND	0.54	1.63	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1248	**326**	2.69	8.17	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1254	**118**	2.69	8.17	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1260	**26.4**	2.69	8.17	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	**5.64**		*83.4 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
Surrogate: PCB 198 (2C)	**3.47**		*90.3 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
N-Hexane Extractable Material by Extraction and Gravimetry								
Oil and Grease	**113**	24.3	97.3	mg/kg dry wt.	05-Jun-2020	05-Jun-2020	EPA 9071B	
SM4500Norg_C Nitrogen, Total Kjeldahl								
Nitrogen, Kjeldahl	**620**	120	210	mg/Kg dry	23-Jun-2020	23-Jun-2020	4500 NorgC-2011	
D422 Grain Size								
Clay	**2.9**			%	28-May-2020	05-Jun-2020	D422	
Coarse Sand	**6.6**			%	28-May-2020	05-Jun-2020	D422	
Fine Sand	**62.8**			%	28-May-2020	05-Jun-2020	D422	
Gravel	**19.0**			%	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 1 - Percent Finer	**4.7**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 2 - Percent Finer	**4.4**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 3 - Percent Finer	**4.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 4 - Percent Finer	**3.7**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 5 - Percent Finer	**2.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 6 - Percent Finer	**2.2**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 7 - Percent Finer	**1.5**			% Passing	28-May-2020	05-Jun-2020	D422	
Medium Sand	**7.1**			%	28-May-2020	05-Jun-2020	D422	
Sand	**76.5**			%	28-May-2020	05-Jun-2020	D422	
Sieve Size #10 - Percent Finer	**74.4**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #100 - Percent Finer	**14.8**			% Passing	28-May-2020	05-Jun-2020	D422	

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20E2903-02 (Soil/Sediment)

Eurofins TestAmerica, Burlington

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
D422 Grain Size								
Sieve Size #20 - Percent Finer	**71.3**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #200 - Percent Finer	**4.5**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #4 - Percent Finer	**81.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #40 - Percent Finer	**67.3**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #60 - Percent Finer	**48.4**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #80 - Percent Finer	**25.6**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.375 inch - Percent Finer	**94.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.75 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1.5 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 2 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 3 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Silt	**1.6**			%	28-May-2020	05-Jun-2020	D422	
2540G Total, Fixed, and Volatile Solids								
Total Volatile Solids	**1.6**	0.50	0.50	%	28-May-2020	07-Jun-2020	SM 2540G	
D_2974 Moisture, Ash and Organic Matter								
Ash Content	**98.4**	0.5	0.5	%	28-May-2020	07-Jun-2020	ASTM D2974	
Moisture Content	**34.2**	0.5	0.5	%	28-May-2020	07-Jun-2020	ASTM D2974	
Total Organic Matter	**1.6**	0.5	0.5	%	28-May-2020	07-Jun-2020	ASTM D2974	
EPA Lloyd_Kahn Organic Carbon, Total (TOC)								
Total Organic Carbon	**11000**	680	1000	mg/Kg	28-May-2020	08-Jun-2020	EPA Lloyd Kahn	

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KH-2020-02

20E2903-02 (Soil/Sediment)

Eurofins TestAmerica, Pittsburgh

SW 846 9014 Cyanide

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Cyanide, Total	ND	0.083	0.27	mg/Kg dry	08-Jun-2020	09-Jun-2020	SW 846 EPA 9014	

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KH-2020-03

20E2903-03 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
ERDC-EL-EP-C								
Semivolatile Organics by GC/MS Selective Ion Monitoring								
1-Methylnaphthalene	**18.4**	0.758	2.46	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
2-Methylnaphthalene	**29.8**	0.758	2.46	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Acenaphthene	**29.9**	0.758	2.46	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Acenaphthylene	**3.89**	0.758	2.46	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Anthracene	**58.5**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) anthracene	**225**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) pyrene	**336**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (b) fluoranthene	**256**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (g,h,i) perylene	**160**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (k) fluoranthene	**309**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Chrysene	**240**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Dibenz (a,h) anthracene	**36.7**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluoranthene	**508**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluorene	**36.1**	0.758	2.46	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Indeno (1,2,3-cd) pyrene	**208**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Naphthalene	**34.9**	0.758	2.46	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Phenanthrene	**276**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Pyrene	**497**	7.58	24.6	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Surrogate: 2-Fluorobiphenyl	**22**		*58.7 %*	*40-105*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Surrogate: Terphenyl-dl4	**38**		*99.4 %*	*30-125*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Classical Chemistry Parameters								
% Solids	**79.0**	0.500	0.500	% Solids	04-Jun-2020	04-Jun-2020	ASTM D2216-98	
Metals by EPA 6000/7000 Series Methods								
Antimony	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	GF-AAS 7000	U

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20E2903-03 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
			ERDC-EL-EP-C					
Metals by EPA 6000/7000 Series Methods								
Mercury	**0.0161**	0.00383	0.00383	mg/kg	05-Jun-2020	16-Jun-2020	EPA 7474	
Silver	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	EPA 7000	U
Aluminum	**3290**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Barium	**18.3**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Calcium	**63100**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Iron	**8910**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Magnesium	**28500**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Manganese	**397**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Phosphorus	**195**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Potassium	**785**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Sodium	**226**	1.50	7.49	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Arsenic-75 [2]	**4.79**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Beryllium-9 [2]	**0.174**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	J
Cadmium-114 [2]	**0.237**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Chromium-53 [2]	**7.24**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Cobalt-59 [1]	**2.75**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Copper-65 [2]	**9.05**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Lead-208 [1]	**10.9**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nickel-62 [2]	**7.51**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Selenium-82 [2]	**0.276**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Thallium-205 [1]	**0.158**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	J
Vanadium-51 [2]	**7.84**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Zinc-66 [2]	**32.4**	0.0937	0.187	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nutrients								
Ammonia as N	**2.23**	0.290	0.965	mg/kg	09-Jun-2020	09-Jun-2020	EPA 350.1	

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20E2903-03 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
ERDC-EL-EP-C								
Polychlorinated Biphenyls by EPA Method 8082								
PCB-1016	ND	0.53	1.61	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1221	ND	0.53	1.61	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1232	ND	0.53	1.61	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1242	ND	0.53	1.61	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1248	**322**	2.65	8.06	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1254	**194**	2.65	8.06	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1260	**36.8**	2.65	8.06	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	**4.92**		*73.8 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
Surrogate: PCB 198 (2C)	**3.25**		*85.6 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
N-Hexane Extractable Material by Extraction and Gravimetry								
Oil and Grease	**233**	24.8	99.1	mg/kg dry wt.	05-Jun-2020	05-Jun-2020	EPA 9071B	
SM4500Norg_C Nitrogen, Total Kjeldahl								
Nitrogen, Kjeldahl	**290**	120	200	mg/Kg dry	23-Jun-2020	23-Jun-2020	4500 NorgC-2011	
D422 Grain Size								
Clay	**1.9**			%	28-May-2020	05-Jun-2020	D422	
Coarse Sand	**0.1**			%	28-May-2020	05-Jun-2020	D422	
Fine Sand	**78.1**			%	28-May-2020	05-Jun-2020	D422	
Gravel	**0.1**			%	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 1 - Percent Finer	**8.7**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 2 - Percent Finer	**5.5**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 3 - Percent Finer	**2.8**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 4 - Percent Finer	**2.3**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 5 - Percent Finer	**1.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 6 - Percent Finer	**1.4**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 7 - Percent Finer	**1**			% Passing	28-May-2020	05-Jun-2020	D422	
Medium Sand	**1.5**			%	28-May-2020	05-Jun-2020	D422	
Sand	**79.7**			%	28-May-2020	05-Jun-2020	D422	
Sieve Size #10 - Percent Finer	**99.8**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #100 - Percent Finer	**45.8**			% Passing	28-May-2020	05-Jun-2020	D422	

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20E2903-03 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Eurofins TestAmerica, Burlington								
D422 Grain Size								
Sieve Size #20 - Percent Finer	**99.6**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #200 - Percent Finer	**20.2**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #4 - Percent Finer	**99.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #40 - Percent Finer	**98.3**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #60 - Percent Finer	**86.7**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #80 - Percent Finer	**63.1**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.375 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.75 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1.5 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 2 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 3 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Silt	**18.3**			%	28-May-2020	05-Jun-2020	D422	
2540G Total, Fixed, and Volatile Solids								
Total Volatile Solids	**1.2**	0.50	0.50	%	28-May-2020	07-Jun-2020	SM 2540G	
D_2974 Moisture, Ash and Organic Matter								
Ash Content	**98.8**	0.5	0.5	%	28-May-2020	07-Jun-2020	ASTM D2974	
Moisture Content	**24.7**	0.5	0.5	%	28-May-2020	07-Jun-2020	ASTM D2974	
Total Organic Matter	**1.2**	0.5	0.5	%	28-May-2020	07-Jun-2020	ASTM D2974	
EPA Lloyd_Kahn Organic Carbon, Total (TOC)								
Total Organic Carbon	**19000**	680	1000	mg/Kg	28-May-2020	08-Jun-2020	EPA Lloyd Kahn	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

KH-2020-03

20E2903-03 (Soil/Sediment)

Eurofins TestAmerica, Pittsburgh

SW 846 9014 Cyanide

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Cyanide, Total	ND	0.085	0.28	mg/Kg dry	08-Jun-2020	09-Jun-2020	SW 846 EPA 9014	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-04

20E2903-04 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
ERDC-EL-EP-C								
Semivolatile Organics by GC/MS Selective Ion Monitoring								
1-Methylnaphthalene	**6.54**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
2-Methylnaphthalene	**10.5**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Acenaphthene	**7.45**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Acenaphthylene	**1.54**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	J
Anthracene	**21.2**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) anthracene	**44.8**	7.31	23.7	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) pyrene	**60.0**	7.31	23.7	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (b) fluoranthene	**45.2**	7.31	23.7	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (g,h,i) perylene	**47.1**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (k) fluoranthene	**56.1**	7.31	23.7	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Chrysene	**58.6**	7.31	23.7	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Dibenz (a,h) anthracene	**12.2**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluoranthene	**113**	7.31	23.7	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluorene	**9.33**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Indeno (1,2,3-cd) pyrene	**53.2**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Naphthalene	**4.43**	0.731	2.37	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Phenanthrene	**72.0**	7.31	23.7	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Pyrene	**114**	7.31	23.7	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Surrogate: 2-Fluorobiphenyl	**19**		*50.7 %*	*40-105*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Surrogate: Terphenyl-dl4	**33**		*90.7 %*	*30-125*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Classical Chemistry Parameters								
% Solids	**78.8**	0.500	0.500	% Solids	04-Jun-2020	04-Jun-2020	ASTM D2216-98	
Metals by EPA 6000/7000 Series Methods								
Antimony	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	GF-AAS 7000	U

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-04

20E2903-04 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
ERDC-EL-EP-C								
Metals by EPA 6000/7000 Series Methods								
Mercury	**0.0111**	0.00360	0.00360	mg/kg	05-Jun-2020	16-Jun-2020	EPA 7474	
Silver	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	EPA 7000	U
Aluminum	**2500**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Barium	**12.2**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Calcium	**61400**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Iron	**7230**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Magnesium	**29300**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Manganese	**348**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Phosphorus	**188**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Potassium	**581**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Sodium	**204**	1.47	7.34	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Arsenic-75 [2]	**3.53**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Beryllium-9 [2]	**0.126**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	J
Cadmium-114 [2]	**0.145**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	J
Chromium-53 [2]	**5.72**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Cobalt-59 [1]	**2.23**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Copper-65 [2]	**7.12**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Lead-208 [1]	**7.68**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nickel-62 [2]	**5.65**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Selenium-82 [2]	**0.199**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Thallium-205 [1]	ND	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	U
Vanadium-51 [2]	**8.11**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Zinc-66 [2]	**32.0**	0.0917	0.183	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nutrients								
Ammonia as N	**1.34**	0.0291	0.0970	mg/kg	09-Jun-2020	09-Jun-2020	EPA 350.1	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-04

20E2903-04 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
			ERDC-EL-EP-C					
Polychlorinated Biphenyls by EPA Method 8082								
PCB-1016	ND	0.51	1.55	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1221	ND	0.51	1.55	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1232	ND	0.51	1.55	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1242	ND	0.51	1.55	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1248	**71.9**	1.02	3.11	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1254	**25.4**	1.02	3.11	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1260	**6.39**	1.02	3.11	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	**4.14**		*64.4 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
Surrogate: PCB 198 (2C)	**2.54**		*69.4 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
N-Hexane Extractable Material by Extraction and Gravimetry								
Oil and Grease	**93.3**	23.7	94.7	mg/kg dry wt.	05-Jun-2020	05-Jun-2020	EPA 9071B	
SM4500Norg_C Nitrogen, Total Kjeldahl								
Nitrogen, Kjeldahl	**170**	110	190	mg/Kg dry	23-Jun-2020	23-Jun-2020	4500 NorgC-2011	Ja
D422 Grain Size								
Clay	**0.9**			%	28-May-2020	05-Jun-2020	D422	
Coarse Sand	**0.2**			%	28-May-2020	05-Jun-2020	D422	
Fine Sand	**92.0**			%	28-May-2020	05-Jun-2020	D422	
Gravel	**0.1**			%	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 1 - Percent Finer	**2.2**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 2 - Percent Finer	**1.7**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 3 - Percent Finer	**1.3**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 4 - Percent Finer	**0.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 5 - Percent Finer	**0.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 6 - Percent Finer	**0.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 7 - Percent Finer	**0.5**			% Passing	28-May-2020	05-Jun-2020	D422	
Medium Sand	**1.6**			%	28-May-2020	05-Jun-2020	D422	
Sand	**93.8**			%	28-May-2020	05-Jun-2020	D422	
Sieve Size #10 - Percent Finer	**99.7**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #100 - Percent Finer	**43.1**			% Passing	28-May-2020	05-Jun-2020	D422	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-04

20E2903-04 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Eurofins TestAmerica, Burlington								
D422 Grain Size								
Sieve Size #20 - Percent Finer	**99.4**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #200 - Percent Finer	**6.1**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #4 - Percent Finer	**99.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #40 - Percent Finer	**98.1**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #60 - Percent Finer	**87.3**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #80 - Percent Finer	**64.7**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.375 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.75 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1.5 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 2 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 3 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Silt	**5.2**			%	28-May-2020	05-Jun-2020	D422	
2540G Total, Fixed, and Volatile Solids								
Total Volatile Solids	**1.4**	0.50	0.50	%	28-May-2020	06-Jun-2020	SM 2540G	
D_2974 Moisture, Ash and Organic Matter								
Ash Content	**98.6**	0.5	0.5	%	28-May-2020	06-Jun-2020	ASTM D2974	
Moisture Content	**30.7**	0.5	0.5	%	28-May-2020	06-Jun-2020	ASTM D2974	
Total Organic Matter	**1.4**	0.5	0.5	%	28-May-2020	06-Jun-2020	ASTM D2974	
EPA Lloyd_Kahn Organic Carbon, Total (TOC)								
Total Organic Carbon	**16000**	680	1000	mg/Kg	28-May-2020	08-Jun-2020	EPA Lloyd Kahn	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-04

20E2903-04 (Soil/Sediment)

Eurofins TestAmerica, Pittsburgh

SW 846 9014 Cyanide

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Cyanide, Total	ND	0.083	0.27	mg/Kg dry	08-Jun-2020	09-Jun-2020	SW 846 EPA 9014	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-DUP

20E2903-05 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
			ERDC-EL-EP-C					
Semivolatile Organics by GC/MS Selective Ion Monitoring								
1-Methylnaphthalene	**0.972**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	J
2-Methylnaphthalene	**2.34**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Acenaphthene	ND	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	U
Acenaphthylene	ND	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	U
Anthracene	**1.91**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	J
Benzo (a) anthracene	**9.43**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (a) pyrene	**17.0**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (b) fluoranthene	**19.8**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (g,h,i) perylene	**14.4**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Benzo (k) fluoranthene	**16.3**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Chrysene	**16.3**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Dibenz (a,h) anthracene	**3.22**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluoranthene	**20.1**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Fluorene	**0.870**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	J
Indeno (1,2,3-cd) pyrene	**15.7**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Naphthalene	**1.88**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	J
Phenanthrene	**8.42**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Pyrene	**23.0**	0.696	2.26	ug/kg dry	04-Jun-2020	18-Jun-2020	EPA 8270E	
Surrogate: 2-Fluorobiphenyl	**20**		*56.4 %*	*40-105*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Surrogate: Terphenyl-dl4	**33**		*96.0 %*	*30-125*	*04-Jun-2020*	*18-Jun-2020*	*EPA 8270E*	
Classical Chemistry Parameters								
% Solids	**82.6**	0.500	0.500	% Solids	04-Jun-2020	04-Jun-2020	ASTM D2216-98	
Metals by EPA 6000/7000 Series Methods								
Antimony	**0.193**	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	GF-AAS 7000	J

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-DUP

20E2903-05 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
			ERDC-EL-EP-C					
Metals by EPA 6000/7000 Series Methods								
Mercury	**0.00501**	0.00345	0.00345	mg/kg	05-Jun-2020	16-Jun-2020	EPA 7474	
Silver	ND	0.100	0.200	mg/kg	05-Jun-2020	25-Jun-2020	EPA 7000	U
Aluminum	**1440**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Barium	**7.66**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Calcium	**39600**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Iron	**7770**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Magnesium	**20300**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Manganese	**297**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Phosphorus	**172**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Potassium	**230**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Sodium	**119**	1.45	7.23	mg/kg	05-Jun-2020	12-Jun-2020	SW 846/6010	
Arsenic-75 [2]	**2.05**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Beryllium-9 [2]	ND	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	U
Cadmium-114 [2]	**0.347**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Chromium-53 [2]	**6.34**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Cobalt-59 [1]	**1.88**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Copper-65 [2]	**5.18**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Lead-208 [1]	**13.8**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nickel-62 [2]	**7.19**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Selenium-82 [2]	**0.152**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	J
Thallium-205 [1]	ND	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	U
Vanadium-51 [2]	**20.0**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Zinc-66 [2]	**87.3**	0.0904	0.181	mg/kg	05-Jun-2020	25-Jun-2020	SW 846/6020	
Nutrients								
Ammonia as N	**1.01**	0.0283	0.0943	mg/kg	09-Jun-2020	09-Jun-2020	EPA 350.1	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-DUP

20E2903-05 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
			ERDC-EL-EP-C					
Polychlorinated Biphenyls by EPA Method 8082								
PCB-1016	ND	0.49	1.48	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1221	ND	0.49	1.48	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1232	ND	0.49	1.48	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1242	ND	0.49	1.48	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	U
PCB-1248	**7.60**	0.49	1.48	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1254	**4.25**	0.49	1.48	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
PCB-1260	**3.97**	0.49	1.48	ug/kg dry	04-Jun-2020	01-Jul-2020	EPA8082	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	**4.62**		*75.6 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
Surrogate: PCB 198 (2C)	**2.77**		*79.7 %*	*40-125*	*04-Jun-2020*	*01-Jul-2020*	*EPA8082*	
N-Hexane Extractable Material by Extraction and Gravimetry								
Oil and Grease	**33.3**	24.4	97.7	mg/kg dry wt.	05-Jun-2020	05-Jun-2020	EPA 9071B	
SM4500Norg_C Nitrogen, Total Kjeldahl								
Nitrogen, Kjeldahl	**210**	110	190	mg/Kg dry	23-Jun-2020	23-Jun-2020	4500 NorgC-2011	
D422 Grain Size								
Clay	**1.1**			%	28-May-2020	05-Jun-2020	D422	
Coarse Sand	0.0			%	28-May-2020	05-Jun-2020	D422	
Fine Sand	**96.5**			%	28-May-2020	05-Jun-2020	D422	
Gravel	0.0			%	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 1 - Percent Finer	**1.6**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 2 - Percent Finer	**1.6**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 3 - Percent Finer	**1.1**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 4 - Percent Finer	**1.1**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 5 - Percent Finer	**1.1**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 6 - Percent Finer	**1.1**			% Passing	28-May-2020	05-Jun-2020	D422	
Hydrometer Reading 7 - Percent Finer	**0.6**			% Passing	28-May-2020	05-Jun-2020	D422	
Medium Sand	**0.4**			%	28-May-2020	05-Jun-2020	D422	
Sand	**96.9**			%	28-May-2020	05-Jun-2020	D422	
Sieve Size #10 - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #100 - Percent Finer	**8.7**			% Passing	28-May-2020	05-Jun-2020	D422	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

KH-2020-DUP

20E2903-05 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Eurofins TestAmerica, Burlington								
D422 Grain Size								
Sieve Size #20 - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #200 - Percent Finer	**3.1**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #4 - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #40 - Percent Finer	**99.6**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #60 - Percent Finer	**64.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size #80 - Percent Finer	**19.9**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.375 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 0.75 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 1.5 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 2 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Sieve Size 3 inch - Percent Finer	**100.0**			% Passing	28-May-2020	05-Jun-2020	D422	
Silt	**2.0**			%	28-May-2020	05-Jun-2020	D422	
2540G Total, Fixed, and Volatile Solids								
Total Volatile Solids	**0.67**	0.50	0.50	%	28-May-2020	05-Jun-2020	SM 2540G	
D_2974 Moisture, Ash and Organic Matter								
Ash Content	**99.3**	0.5	0.5	%	28-May-2020	05-Jun-2020	ASTM D2974	
Moisture Content	**19.0**	0.5	0.5	%	28-May-2020	05-Jun-2020	ASTM D2974	
Total Organic Matter	**0.7**	0.5	0.5	%	28-May-2020	05-Jun-2020	ASTM D2974	
EPA Lloyd_Kahn Organic Carbon, Total (TOC)								
Total Organic Carbon	**1500**	680	1000	mg/Kg	28-May-2020	08-Jun-2020	EPA Lloyd Kahn	

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3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

KH-2020-DUP

20E2903-05 (Soil/Sediment)

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Eurofins TestAmerica, Pittsburgh								
SW 846 9014 Cyanide								
Cyanide, Total	ND	0.082	0.27	mg/Kg dry	08-Jun-2020	09-Jun-2020	SW 846 EPA 9014	

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USACE ERDC-EP-C
3909 Halls Ferry Road
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Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

Semivolatile Organics by GC/MS Selective Ion Monitoring - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F054 - EPA 3545											
Blank (B20F054-BLK1)					Prepared: 04-Jun-2020 Analyzed: 18-Jun-2020						
1-Methylnaphthalene	ND	0.800	2.60	ug/kg wet							U
2-Methylnaphthalene	ND	0.800	2.60	ug/kg wet							U
Acenaphthene	ND	0.800	2.60	ug/kg wet							U
Acenaphthylene	ND	0.800	2.60	ug/kg wet							U
Anthracene	ND	0.800	2.60	ug/kg wet							U
Benzo (a) anthracene	ND	0.800	2.60	ug/kg wet							U
Benzo (a) pyrene	ND	0.800	2.60	ug/kg wet							U
Benzo (b) fluoranthene	ND	0.800	2.60	ug/kg wet							U
Benzo (g,h,i) perylene	ND	0.800	2.60	ug/kg wet							U
Benzo (k) fluoranthene	ND	0.800	2.60	ug/kg wet							U
Chrysene	ND	0.800	2.60	ug/kg wet							U
Dibenz (a,h) anthracene	ND	0.800	2.60	ug/kg wet							U
Fluoranthene	ND	0.800	2.60	ug/kg wet							U
Fluorene	ND	0.800	2.60	ug/kg wet							U
Indeno (1,2,3-cd) pyrene	ND	0.800	2.60	ug/kg wet							U
Naphthalene	ND	0.800	2.60	ug/kg wet							U
Phenanthrene	ND	0.800	2.60	ug/kg wet							U
Pyrene	ND	0.800	2.60	ug/kg wet							U
Surrogate: 2-Fluorobiphenyl	*22*			*ug/kg wet*	*40.00*		*55.5*	*40-105*			
Surrogate: Terphenyl-dl4	*42*			*ug/kg wet*	*40.00*		*104*	*30-125*			

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Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

Semivolatile Organics by GC/MS Selective Ion Monitoring - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F054 - EPA 3545											
LCS (B20F054-BS1)					Prepared: 04-Jun-2020 Analyzed: 18-Jun-2020						
1-Methylnaphthalene	23.5	0.800	2.60	ug/kg wet	45.05		52.2	40-105			
2-Methylnaphthalene	25.8	0.800	2.60	ug/kg wet	42.05		61.3	40-105			
Acenaphthene	23.4	0.800	2.60	ug/kg wet	43.87		53.4	45-110			
Acenaphthylene	20.9	0.800	2.60	ug/kg wet	39.54		52.9	45-110			
Anthracene	30.5	0.800	2.60	ug/kg wet	52.44		58.1	50-115			
Benzo (a) anthracene	46.9	0.800	2.60	ug/kg wet	31.40		149	50-125			Q
Benzo (a) pyrene	75.1	0.800	2.60	ug/kg wet	39.81		189	50-130			Q
Benzo (b) fluoranthene	68.9	0.800	2.60	ug/kg wet	41.80		165	45-130			Q
Benzo (g,h,i) perylene	69.0	0.800	2.60	ug/kg wet	43.43		159	40-125			Q
Benzo (k) fluoranthene	71.8	0.800	2.60	ug/kg wet	55.08		130	45-130			
Chrysene	48.4	0.800	2.60	ug/kg wet	42.18		115	50-125			
Dibenz (a,h) anthracene	69.6	0.800	2.60	ug/kg wet	44.94		155	40-125			Q
Fluoranthene	35.8	0.800	2.60	ug/kg wet	45.30		79.1	50-120			
Fluorene	22.9	0.800	2.60	ug/kg wet	43.70		52.5	50-110			
Indeno (1,2,3-cd) pyrene	65.6	0.800	2.60	ug/kg wet	39.84		165	40-125			Q
Naphthalene	24.5	0.800	2.60	ug/kg wet	36.46		67.1	40-105			
Phenanthrene	30.2	0.800	2.60	ug/kg wet	43.92		68.8	50-130			
Pyrene	50.6	0.800	2.60	ug/kg wet	40.36		125	45-125			
Surrogate: 2-Fluorobiphenyl	*22*			*ug/kg wet*	*40.00*		*54.7*	*40-105*			
Surrogate: Terphenyl-dl4	*40*			*ug/kg wet*	*40.00*		*99.3*	*30-125*			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

Semivolatile Organics by GC/MS Selective Ion Monitoring - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F054 - EPA 3545											
LCS Dup (B20F054-BSD1)					Prepared: 04-Jun-2020 Analyzed: 18-Jun-2020						
1-Methylnaphthalene	24.1	0.800	2.60	ug/kg wet	45.05		53.6	40-105	2.58	30	
2-Methylnaphthalene	26.5	0.800	2.60	ug/kg wet	42.05		62.9	40-105	2.55	30	
Acenaphthene	24.3	0.800	2.60	ug/kg wet	43.87		55.4	45-110	3.59	30	
Acenaphthylene	21.4	0.800	2.60	ug/kg wet	39.54		54.2	45-110	2.40	30	
Anthracene	29.6	0.800	2.60	ug/kg wet	52.44		56.4	50-115	2.86	30	
Benzo (a) anthracene	44.7	0.800	2.60	ug/kg wet	31.40		142	50-125	4.79	30	Q
Benzo (a) pyrene	66.4	0.800	2.60	ug/kg wet	39.81		167	50-130	12.2	30	Q
Benzo (b) fluoranthene	65.9	0.800	2.60	ug/kg wet	41.80		158	45-130	4.44	30	Q
Benzo (g,h,i) perylene	69.0	0.800	2.60	ug/kg wet	43.43		159	40-125	0.0406	30	Q
Benzo (k) fluoranthene	68.1	0.800	2.60	ug/kg wet	55.08		124	45-130	5.30	30	
Chrysene	44.0	0.800	2.60	ug/kg wet	42.18		104	50-125	9.56	30	
Dibenz (a,h) anthracene	65.8	0.800	2.60	ug/kg wet	44.94		146	40-125	5.54	30	Q
Fluoranthene	34.8	0.800	2.60	ug/kg wet	45.30		76.8	50-120	2.90	30	
Fluorene	23.3	0.800	2.60	ug/kg wet	43.70		53.4	50-110	1.68	30	
Indeno (1,2,3-cd) pyrene	61.7	0.800	2.60	ug/kg wet	39.84		155	40-125	6.16	30	Q
Naphthalene	25.7	0.800	2.60	ug/kg wet	36.46		70.6	40-105	4.97	30	
Phenanthrene	29.5	0.800	2.60	ug/kg wet	43.92		67.1	50-130	2.43	30	
Pyrene	50.1	0.800	2.60	ug/kg wet	40.36		124	45-125	0.961	30	
Surrogate: 2-Fluorobiphenyl	*22*			*ug/kg wet*	*40.00*		*54.5*	*40-105*			
Surrogate: Terphenyl-dl4	*38*			*ug/kg wet*	*40.00*		*95.5*	*30-125*			

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USACE ERDC-EP-C
3909 Halls Ferry Road
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Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

Semivolatile Organics by GC/MS Selective Ion Monitoring - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F054 - EPA 3545											
Duplicate (B20F054-DUP1)		**Source: 20E2903-01**		Prepared: 04-Jun-2020 Analyzed: 18-Jun-2020							
1-Methylnaphthalene	1.02	0.723	2.35	ug/kg dry		1.06			4.14	30	J
2-Methylnaphthalene	2.43	0.723	2.35	ug/kg dry		2.50			2.70	30	
Acenaphthene	ND	0.723	2.35	ug/kg dry		ND				30	U
Acenaphthylene	ND	0.723	2.35	ug/kg dry		ND				30	U
Anthracene	1.97	0.723	2.35	ug/kg dry		2.46			22.2	30	J
Benzo (a) anthracene	11.3	0.723	2.35	ug/kg dry		15.0			28.0	30	
Benzo (a) pyrene	16.6	0.723	2.35	ug/kg dry		22.4			29.5	30	
Benzo (b) fluoranthene	20.6	0.723	2.35	ug/kg dry		26.2			24.1	30	
Benzo (g,h,i) perylene	14.9	0.723	2.35	ug/kg dry		18.7			22.7	30	
Benzo (k) fluoranthene	16.5	0.723	2.35	ug/kg dry		21.6			26.7	30	
Chrysene	18.0	0.723	2.35	ug/kg dry		22.6			22.4	30	
Dibenz (a,h) anthracene	3.24	0.723	2.35	ug/kg dry		3.61			10.7	30	
Fluoranthene	21.6	0.723	2.35	ug/kg dry		31.8			38.1	30	RPD-06
Fluorene	0.905	0.723	2.35	ug/kg dry		1.12			20.9	30	J
Indeno (1,2,3-cd) pyrene	16.2	0.723	2.35	ug/kg dry		17.2			6.44	30	
Naphthalene	1.99	0.723	2.35	ug/kg dry		2.11			5.71	30	J
Phenanthrene	9.23	0.723	2.35	ug/kg dry		12.3			28.3	30	
Pyrene	25.5	0.723	2.35	ug/kg dry		37.0			36.6	30	RPD-06
Surrogate: 2-Fluorobiphenyl	*20*			*ug/kg dry*	*36.15*		*55.8*	*40-105*			
Surrogate: Terphenyl-dl4	*41*			*ug/kg dry*	*36.15*		*114*	*30-125*			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

Semivolatile Organics by GC/MS Selective Ion Monitoring - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F054 - EPA 3545											
Matrix Spike (B20F054-MS1)		**Source: 20E2903-01**			Prepared: 04-Jun-2020 Analyzed: 18-Jun-2020						
1-Methylnaphthalene	22.9	0.737	2.40	ug/kg dry	41.50	1.06	52.6	40-105			
2-Methylnaphthalene	25.4	0.737	2.40	ug/kg dry	38.74	2.50	59.0	40-105			
Acenaphthene	26.3	0.737	2.40	ug/kg dry	40.41	ND	65.0	45-110			
Acenaphthylene	25.2	0.737	2.40	ug/kg dry	36.43	ND	69.2	45-110			
Anthracene	38.9	0.737	2.40	ug/kg dry	48.31	2.46	75.5	50-115			
Benzo (a) anthracene	63.7	0.737	2.40	ug/kg dry	28.92	15.0	168	50-125			Q
Benzo (a) pyrene	83.7	0.737	2.40	ug/kg dry	36.67	22.4	167	50-130			Q
Benzo (b) fluoranthene	75.6	0.737	2.40	ug/kg dry	38.50	26.2	128	45-130			
Benzo (g,h,i) perylene	72.5	0.737	2.40	ug/kg dry	40.01	18.7	134	40-125			Q
Benzo (k) fluoranthene	67.9	0.737	2.40	ug/kg dry	50.74	21.6	91.3	45-130			
Chrysene	64.4	0.737	2.40	ug/kg dry	38.86	22.6	108	50-125			
Dibenz (a,h) anthracene	58.7	0.737	2.40	ug/kg dry	41.40	3.61	133	40-125			Q
Fluoranthene	62.4	0.737	2.40	ug/kg dry	41.73	31.8	73.4	50-120			
Fluorene	26.9	0.737	2.40	ug/kg dry	40.26	1.12	64.0	50-110			
Indeno (1,2,3-cd) pyrene	83.7	0.737	2.40	ug/kg dry	36.70	17.2	181	40-125			Q
Naphthalene	20.7	0.737	2.40	ug/kg dry	33.58	2.11	55.4	40-105			
Phenanthrene	41.4	0.737	2.40	ug/kg dry	40.46	12.3	72.0	50-130			
Pyrene	78.7	0.737	2.40	ug/kg dry	37.18	37.0	112	45-125			
Surrogate: 2-Fluorobiphenyl	*20*			*ug/kg dry*	*36.85*		*55.3*	*40-105*			
Surrogate: Terphenyl-dl4	*37*			*ug/kg dry*	*36.85*		*100*	*30-125*			

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Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

Semivolatile Organics by GC/MS Selective Ion Monitoring - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F054 - EPA 3545											
Matrix Spike Dup (B20F054-MSD1)		**Source: 20E2903-01**			Prepared: 04-Jun-2020 Analyzed: 18-Jun-2020						
1-Methylnaphthalene	18.1	0.745	2.42	ug/kg dry	41.96	1.06	40.6	40-105	23.3	30	
2-Methylnaphthalene	19.7	0.745	2.42	ug/kg dry	39.16	2.50	44.0	40-105	25.0	30	
Acenaphthene	20.7	0.745	2.42	ug/kg dry	40.86	ND	50.6	45-110	23.7	30	
Acenaphthylene	20.3	0.745	2.42	ug/kg dry	36.83	ND	55.0	45-110	21.7	30	
Anthracene	33.1	0.745	2.42	ug/kg dry	48.84	2.46	62.8	50-115	16.1	30	
Benzo (a) anthracene	57.7	0.745	2.42	ug/kg dry	29.24	15.0	146	50-125	9.77	30	Q
Benzo (a) pyrene	75.7	0.745	2.42	ug/kg dry	37.08	22.4	144	50-130	10.0	30	Q
Benzo (b) fluoranthene	68.7	0.745	2.42	ug/kg dry	38.93	26.2	109	45-130	9.48	30	
Benzo (g,h,i) perylene	64.5	0.745	2.42	ug/kg dry	40.45	18.7	113	40-125	11.7	30	
Benzo (k) fluoranthene	59.9	0.745	2.42	ug/kg dry	51.30	21.6	74.8	45-130	12.4	30	
Chrysene	58.8	0.745	2.42	ug/kg dry	39.29	22.6	92.3	50-125	9.06	30	
Dibenz (a,h) anthracene	56.5	0.745	2.42	ug/kg dry	41.86	3.61	126	40-125	3.76	30	Q
Fluoranthene	54.6	0.745	2.42	ug/kg dry	42.19	31.8	54.3	50-120	13.2	30	
Fluorene	21.9	0.745	2.42	ug/kg dry	40.70	1.12	51.1	50-110	20.4	30	
Indeno (1,2,3-cd) pyrene	75.9	0.745	2.42	ug/kg dry	37.10	17.2	158	40-125	9.76	30	Q
Naphthalene	16.0	0.745	2.42	ug/kg dry	33.95	2.11	41.1	40-105	25.4	30	
Phenanthrene	35.4	0.745	2.42	ug/kg dry	40.90	12.3	56.6	50-130	15.6	30	
Pyrene	69.7	0.745	2.42	ug/kg dry	37.59	37.0	87.2	45-125	12.0	30	
Surrogate: 2-Fluorobiphenyl	*15*			*ug/kg dry*	*37.25*		*40.8*	*40-105*			
Surrogate: Terphenyl-dl4	*34*			*ug/kg dry*	*37.25*		*90.3*	*30-125*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

Semivolatile Organics by GC/MS Selective Ion Monitoring - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Classical Chemistry Parameters - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch B20F052 - % Solids

Duplicate (B20F052-DUP1) **Source: 20E2903-05** Prepared & Analyzed: 04-Jun-2020

% Solids	82.4	0.500	0.500	% Solids		82.6			0.267	20	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Metals by EPA 6000/7000 Series Methods - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F331 - Default Prep Metals											
Blank (B20F331-BLK1)					Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Antimony	ND	0.100	0.200	mg/kg							U
LCS (B20F331-BS1)					Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Antimony	56.0	0.250	0.500	mg/kg	50.00		112	80-120			
Duplicate (B20F331-DUP1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 26-Jun-2020						
Antimony	0.138	0.100	0.200	mg/kg		ND				20	J
Matrix Spike (B20F331-MS1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Antimony	42.9	0.250	0.500	mg/kg	44.49	ND	96.4	75-125			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

Metals by EPA 6000/7000 Series Methods - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F157 - Default Prep Metals											
Blank (B20F157-BLK1)					Prepared: 05-Jun-2020 Analyzed: 12-Jun-2020						
Aluminum	ND	1.60	8.00	mg/kg							U
Barium	ND	1.60	8.00	mg/kg							U
Calcium	ND	1.60	8.00	mg/kg							U
Iron	3.67	1.60	8.00	mg/kg							J
Magnesium	ND	1.60	8.00	mg/kg							U
Manganese	ND	1.60	8.00	mg/kg							U
Phosphorus	2.28	1.60	8.00	mg/kg							J
Potassium	ND	1.60	8.00	mg/kg							U
Sodium	1.74	1.60	8.00	mg/kg							J
LCS (B20F157-BS1)					Prepared: 05-Jun-2020 Analyzed: 12-Jun-2020						
Aluminum	2550	1.60	8.00	mg/kg	2500		102	80-120			
Barium	102	1.60	8.00	mg/kg	100.0		102	80-120			
Calcium	2590	1.60	8.00	mg/kg	2500		104	80-120			
Iron	2710	1.60	8.00	mg/kg	2500		108	80-120			
Magnesium	2600	1.60	8.00	mg/kg	2500		104	80-120			
Manganese	127	1.60	8.00	mg/kg	125.0		101	80-120			
Phosphorus	53.9	1.60	8.00	mg/kg	50.00		108	80-120			
Potassium	2610	1.60	8.00	mg/kg	2500		105	80-120			
Sodium	2750	1.60	8.00	mg/kg	2500		110	80-120			
Duplicate (B20F157-DUP1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 12-Jun-2020						
Aluminum	1430	1.36	6.78	mg/kg		1450			1.44	20	
Barium	7.82	1.36	6.78	mg/kg		9.81			22.5	20	RPD-06
Calcium	38500	1.36	6.78	mg/kg		38900			1.20	20	
Iron	7410	1.36	6.78	mg/kg		7260			2.13	20	
Magnesium	19800	1.36	6.78	mg/kg		19900			0.495	20	
Manganese	295	1.36	6.78	mg/kg		296			0.137	20	
Phosphorus	159	1.36	6.78	mg/kg		158			0.409	20	
Potassium	232	1.36	6.78	mg/kg		237			2.31	20	
Sodium	123	1.36	6.78	mg/kg		128			3.56	20	

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Metals by EPA 6000/7000 Series Methods - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F157 - Default Prep Metals											
Matrix Spike (B20F157-MS1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 12-Jun-2020						
Aluminum	4050	1.42	7.12	mg/kg	2224	1450	117	80-120			
Barium	92.1	1.42	7.12	mg/kg	88.98	9.81	92.5	80-120			
Calcium	41100	1.42	7.12	mg/kg	2224	38900	98.1	80-120			
Iron	11300	1.42	7.12	mg/kg	2224	7260	180	80-120			QM-11
Magnesium	22800	1.42	7.12	mg/kg	2224	19900	130	80-120			QM-11
Manganese	407	1.42	7.12	mg/kg	111.2	296	100	80-120			
Phosphorus	242	1.42	7.12	mg/kg	44.49	158	188	80-120			QM-11
Potassium	2610	1.42	7.12	mg/kg	2224	237	106	80-120			
Sodium	2520	1.42	7.12	mg/kg	2224	128	108	80-120			
Batch B20F219 - Default Prep Metals											
Blank (B20F219-BLK1)					Prepared: 05-Jun-2020 Analyzed: 16-Jun-2020						
Mercury	ND	0.00400	0.00400	mg/kg							U
LCS (B20F219-BS1)					Prepared: 05-Jun-2020 Analyzed: 16-Jun-2020						
Mercury	0.0551	0.00400	0.00400	mg/kg	0.05000		110	75-125			
Duplicate (B20F219-DUP1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 16-Jun-2020						
Mercury	0.00455	0.00358	0.00358	mg/kg		0.00561			20.9	25	
Matrix Spike (B20F219-MS1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 16-Jun-2020						
Mercury	0.104	0.00361	0.00361	mg/kg	0.09020	0.00561	109	75-125			
Batch B20F312 - Default Prep Metals											
Blank (B20F312-BLK1)					Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Arsenic-75 [2]	ND	0.100	0.200	mg/kg							U
Beryllium-9 [2]	ND	0.100	0.200	mg/kg							U
Cadmium-114 [2]	ND	0.100	0.200	mg/kg							U
Chromium-53 [2]	ND	0.100	0.200	mg/kg							U
Cobalt-59 [1]	ND	0.100	0.200	mg/kg							U
Copper-65 [2]	ND	0.100	0.200	mg/kg							U
Lead-208 [1]	ND	0.100	0.200	mg/kg							U
Nickel-62 [2]	ND	0.100	0.200	mg/kg							U
Selenium-82 [2]	ND	0.100	0.200	mg/kg							U
Thallium-205 [1]	ND	0.100	0.200	mg/kg							U
Vanadium-51 [2]	ND	0.100	0.200	mg/kg							U
Zinc-66 [2]	ND	0.100	0.200	mg/kg							U

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Metals by EPA 6000/7000 Series Methods - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F312 - Default Prep Metals											
LCS (B20F312-BS1)					Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Arsenic-75 [2]	23.4	0.250	0.500	mg/kg	25.00		93.5	80-120			
Beryllium-9 [2]	24.1	0.250	0.500	mg/kg	25.00		96.5	80-120			
Cadmium-114 [2]	23.4	0.250	0.500	mg/kg	25.00		93.7	80-120			
Chromium-53 [2]	23.6	0.250	0.500	mg/kg	25.00		94.2	80-120			
Cobalt-59 [1]	48.9	0.250	0.500	mg/kg	50.00		97.8	80-120			
Copper-65 [2]	47.5	0.250	0.500	mg/kg	50.00		95.0	80-120			
Lead-208 [1]	51.0	0.250	0.500	mg/kg	50.00		102	80-120			
Nickel-62 [2]	47.1	0.250	0.500	mg/kg	50.00		94.3	80-120			
Selenium-82 [2]	22.0	0.250	0.500	mg/kg	25.00		88.1	80-120			
Thallium-205 [1]	25.8	0.250	0.500	mg/kg	25.00		103	80-120			
Vanadium-51 [2]	46.6	0.250	0.500	mg/kg	50.00		93.2	80-120			
Zinc-66 [2]	88.6	0.250	0.500	mg/kg	100.0		88.6	80-120			
Duplicate (B20F312-DUP1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Arsenic-75 [2]	2.10	0.0847	0.169	mg/kg		2.14			2.07	20	
Beryllium-9 [2]	ND	0.0847	0.169	mg/kg		ND				20	U
Cadmium-114 [2]	0.148	0.0847	0.169	mg/kg		0.132			11.0	20	J
Chromium-53 [2]	5.33	0.0847	0.169	mg/kg		5.95			10.9	20	
Cobalt-59 [1]	1.84	0.0847	0.169	mg/kg		1.76			4.18	20	
Copper-65 [2]	5.39	0.0847	0.169	mg/kg		5.12			5.11	20	
Lead-208 [1]	6.09	0.0847	0.169	mg/kg		5.96			2.21	20	
Nickel-62 [2]	6.53	0.0847	0.169	mg/kg		6.58			0.750	20	
Selenium-82 [2]	0.168	0.0847	0.169	mg/kg		0.183			8.25	20	J
Thallium-205 [1]	ND	0.0847	0.169	mg/kg		ND				20	U
Vanadium-51 [2]	19.7	0.0847	0.169	mg/kg		18.0			9.20	20	
Zinc-66 [2]	58.1	0.0847	0.169	mg/kg		53.1			8.99	20	
Matrix Spike (B20F312-MS1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Arsenic-75 [2]	21.4	0.222	0.445	mg/kg	22.24	2.14	86.8	80-120			
Beryllium-9 [2]	19.5	0.222	0.445	mg/kg	22.24	ND	87.9	80-120			
Cadmium-114 [2]	24.3	0.222	0.445	mg/kg	22.24	ND	109	80-120			
Chromium-53 [2]	26.6	0.222	0.445	mg/kg	22.24	5.95	93.1	80-120			
Cobalt-59 [1]	41.2	0.222	0.445	mg/kg	44.49	1.76	88.7	80-120			
Copper-65 [2]	44.2	0.222	0.445	mg/kg	44.49	5.12	87.9	80-120			
Lead-208 [1]	51.1	0.222	0.445	mg/kg	44.49	5.96	102	80-120			
Nickel-62 [2]	46.1	0.222	0.445	mg/kg	44.49	6.58	88.9	80-120			
Selenium-82 [2]	20.0	0.222	0.445	mg/kg	22.24	ND	89.9	80-120			
Thallium-205 [1]	22.4	0.222	0.445	mg/kg	22.24	ND	101	80-120			
Vanadium-51 [2]	68.6	0.222	0.445	mg/kg	44.49	18.0	114	80-120			
Zinc-66 [2]	148	0.222	0.445	mg/kg	88.98	53.1	107	80-120			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Metals by EPA 6000/7000 Series Methods - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F332 - Default Prep Metals											
Blank (B20F332-BLK1)					Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Silver	ND	0.100	0.200	mg/kg							U
LCS (B20F332-BS1)					Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Silver	24.7	0.250	0.500	mg/kg	25.00		98.8	80-120			
Duplicate (B20F332-DUP1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Silver	ND	0.100	0.200	mg/kg		ND				20	U
Matrix Spike (B20F332-MS1)		**Source: 20E2903-01**			Prepared: 05-Jun-2020 Analyzed: 25-Jun-2020						
Silver	21.6	0.250	0.500	mg/kg	22.15	ND	97.6	80-120			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Nutrients - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F120 - Default Prep Metals											
Blank (B20F120-BLK1)					Prepared & Analyzed: 09-Jun-2020						
Ammonia as N	ND	0.0300	0.100	mg/kg							U
LCS (B20F120-BS1)					Prepared & Analyzed: 09-Jun-2020						
Ammonia as N	1.08	0.0300	0.100	mg/kg	1.000		108	80-120			
Duplicate (B20F120-DUP1)		**Source: 20E2903-01**			Prepared & Analyzed: 09-Jun-2020						
Ammonia as N	0.544	0.0289	0.0963	mg/kg		0.625			13.8	20	
Matrix Spike (B20F120-MS1)		**Source: 20E2903-01**			Prepared & Analyzed: 09-Jun-2020						
Ammonia as N	11.0	0.299	0.998	mg/kg	9.978	0.625	104	80-120			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F054 - EPA 3545											
Blank (B20F054-BLK1)					Prepared: 04-Jun-2020 Analyzed: 01-Jul-2020						
PCB-1016	ND	0.56	1.70	ug/kg wet							U
PCB-1221	ND	0.56	1.70	ug/kg wet							U
PCB-1232	ND	0.56	1.70	ug/kg wet							U
PCB-1242	ND	0.56	1.70	ug/kg wet							U
PCB-1248	ND	0.56	1.70	ug/kg wet							U
PCB-1254	ND	0.56	1.70	ug/kg wet							U
PCB-1260	ND	0.56	1.70	ug/kg wet							U
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*6.93*			*ug/kg wet*	*7.031*		*98.6*	*40-125*			
Surrogate: PCB 198 (2C)	*3.80*			*ug/kg wet*	*4.000*		*94.9*	*40-125*			
LCS (B20F054-BS1)					Prepared: 04-Jun-2020 Analyzed: 01-Jul-2020						
PCB-1016	30.8	0.56	1.70	ug/kg wet	40.00		76.9	50-140			
PCB-1260	38.0	0.56	1.70	ug/kg wet	40.00		94.9	50-140			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*6.44*			*ug/kg wet*	*7.031*		*91.5*	*50-140*			
Surrogate: PCB 198 (2C)	*4.30*			*ug/kg wet*	*4.000*		*108*	*40-125*			
LCS Dup (B20F054-BSD1)					Prepared: 04-Jun-2020 Analyzed: 01-Jul-2020						
PCB-1016	28.4	0.56	1.70	ug/kg wet	40.00		71.0	50-140	7.98	30	
PCB-1260	34.0	0.56	1.70	ug/kg wet	40.00		84.9	50-140	11.1	30	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*6.19*			*ug/kg wet*	*7.031*		*88.0*	*50-140*			
Surrogate: PCB 198 (2C)	*3.73*			*ug/kg wet*	*4.000*		*93.1*	*40-125*			
Duplicate (B20F054-DUP1)		**Source: 20E2903-01**			Prepared: 04-Jun-2020 Analyzed: 01-Jul-2020						
PCB-1016	ND	0.51	1.54	ug/kg dry		ND				30	U
PCB-1221	ND	0.51	1.54	ug/kg dry		ND				30	U
PCB-1232	ND	0.51	1.54	ug/kg dry		ND				30	U
PCB-1242	ND	0.51	1.54	ug/kg dry		ND				30	U
PCB-1248	8.0	0.51	1.54	ug/kg dry		8.4			5.45	30	
PCB-1254	4.8	0.51	1.54	ug/kg dry		5.4			11.1	30	
PCB-1260	3.5	0.51	1.54	ug/kg dry		3.4			2.51	30	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*5.50*			*ug/kg dry*	*6.354*		*86.6*	*40-125*			
Surrogate: PCB 198 (2C)	*3.30*			*ug/kg dry*	*3.615*		*91.4*	*40-125*			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F054 - EPA 3545											
Matrix Spike (B20F054-MS1)		**Source: 20E2903-01**			Prepared: 04-Jun-2020 Analyzed: 01-Jul-2020						
PCB-1016	30.4	0.52	1.57	ug/kg dry	36.85	ND	82.5	40-140			
PCB-1260	33.9	0.52	1.57	ug/kg dry	36.85	3.4	82.7	40-140			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*5.35*			*ug/kg dry*	*6.477*		*82.6*	*40-140*			
Surrogate: PCB 198 (2C)	*3.55*			*ug/kg dry*	*3.685*		*96.5*	*40-125*			
Matrix Spike Dup (B20F054-MSD1)		**Source: 20E2903-01**			Prepared: 04-Jun-2020 Analyzed: 01-Jul-2020						
PCB-1016	27.5	0.52	1.58	ug/kg dry	37.25	ND	73.7	40-140	10.1	30	
PCB-1260	28.0	0.52	1.58	ug/kg dry	37.25	3.4	65.9	40-140	19.2	30	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*3.92*			*ug/kg dry*	*6.548*		*59.8*	*40-140*			
Surrogate: PCB 198 (2C)	*2.94*			*ug/kg dry*	*3.725*		*78.9*	*40-125*			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

N-Hexane Extractable Material by Extraction and Gravimetry - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B20F080 - * DEFAULT PREP *****											
Blank (B20F080-BLK1)					Prepared & Analyzed: 05-Jun-2020						
Oil and Grease	ND	25.0	100	mg/kg dry wt.							U
Blank (B20F080-BLK2)					Prepared & Analyzed: 05-Jun-2020						
Oil and Grease	ND	25.0	100	mg/kg dry wt.							U
LCS (B20F080-BS1)					Prepared & Analyzed: 05-Jun-2020						
Oil and Grease	580	25.0	100	mg/kg dry wt.	533.3		109	60-125			
Duplicate (B20F080-DUP1)		**Source: 20E2903-03**			Prepared & Analyzed: 05-Jun-2020						
Oil and Grease	133	24.2	97.0	mg/kg dry wt.		233			54.6	30	RPD-06
Matrix Spike (B20F080-MS1)		**Source: 20E2903-03**			Prepared & Analyzed: 05-Jun-2020						
Oil and Grease	560	24.4	97.7	mg/kg dry wt.	260.6	233	125	50-125			
Matrix Spike Dup (B20F080-MSD1)		**Source: 20E2903-03**			Prepared & Analyzed: 05-Jun-2020						
Oil and Grease	473	23.9	95.7	mg/kg dry wt.	255.1	233	94.1	50-125	16.8	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

SM4500Norg_C Nitrogen, Total Kjeldahl - Quality Control

Eurofins TestAmerica, Canton

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 439666 - SM4500Norg_C_P											
MS (180-106487-1MS)		**Source: 180-106487-1**			Prepared & Analyzed: 23-Jun-2020						
Nitrogen, Kjeldahl	1120	110	190	mg/Kg dry	1290	ND	87	14-158			
MSD (180-106487-1MSD)		**Source: 180-106487-1**			Prepared & Analyzed: 23-Jun-2020						
Nitrogen, Kjeldahl	1070	110	190	mg/Kg dry	1240	ND	87	14-158	4	33	
MB (240-43966617-A)					Prepared & Analyzed: 23-Jun-2020						
Nitrogen, Kjeldahl	ND	88	150	mg/Kg				-			
LCS (240-43966618-A)					Prepared & Analyzed: 23-Jun-2020						
Nitrogen, Kjeldahl	1040	88	150	mg/Kg	1060		98	65-133			

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

2540G Total, Fixed, and Volatile Solids - Quality Control

Eurofins TestAmerica, Burlington

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 317640 -											
DU (180-106487-5DU)		**Source: 20E2903-05**			Prepared: Analyzed: 06-Jun-2020						
Total Volatile Solids	0.638	0.50	0.50	%		0.67		-	5	10	

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Chicago District	Project: Kenosha Dredge	
231 S. LaSalle, Suite 1500		**Reported:**
Chicago IL, 60604	Project Manager: Jennifer Miller	10-Jul-2020

D_2974 Moisture, Ash and Organic Matter - Quality Control

Eurofins TestAmerica, Burlington

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 317642 -											
DU (180-106487-5DU)		**Source: 20E2903-05**			Prepared: Analyzed: 06-Jun-2020						
Ash Content	99.4	0.5	0.5	%		99.3		-	0	10	
Moisture Content	19.9	0.5	0.5	%		19.0		-	5	10	
Total Organic Matter	0.6	0.5	0.5	%		0.7		-	5	10	

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Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

EPA Lloyd_Kahn Organic Carbon, Total (TOC) - Quality Control

Eurofins TestAmerica, Burlington

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 155553 -											
MB (200-1555535)					Prepared: Analyzed: 08-Jun-2020						
Total Organic Carbon	ND	680	1000	mg/Kg				-			
LCS (200-1555536)					Prepared: Analyzed: 08-Jun-2020						
Total Organic Carbon	8690	680	1000	mg/Kg	9260		94	75-125			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Chicago District 231 S. LaSalle, Suite 1500 Chicago IL, 60604	Project: Kenosha Dredge Project Manager: Jennifer Miller	**Reported:** 10-Jul-2020

SW 846 9014 Cyanide - Quality Control

Eurofins TestAmerica, Pittsburgh

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 317788 - 9010C											
MS (180-106487-1MS)		**Source: 20E2903-01**			Prepared: 08-Jun-2020 Analyzed: 09-Jun-2020						
Cyanide, Total	3.13	0.079	0.26	mg/Kg dry	5.15	ND	61	75-125			F1
MSD (180-106487-1MSD)		**Source: 20E2903-01**			Prepared: 08-Jun-2020 Analyzed: 09-Jun-2020						
Cyanide, Total	2.81	0.074	0.24	mg/Kg dry	4.85	ND	58	75-125	11	20	F1
LCS (180-3177883-A)					Prepared: 08-Jun-2020 Analyzed: 09-Jun-2020						
Cyanide, Total	20.8	0.31	1.0	mg/Kg	23.1		90	25-150			
MB (180-3177884-A)					Prepared: 08-Jun-2020 Analyzed: 09-Jun-2020						
Cyanide, Total	ND	0.15	0.50	mg/Kg				-			
HLCS (H180-3177882-A)					Prepared: 08-Jun-2020 Analyzed: 09-Jun-2020						
Cyanide, Total	0.259	0.0031	0.010	mg/Kg	0.250		103	90-110			
LLCS (L180-3177881-A)					Prepared: 08-Jun-2020 Analyzed: 09-Jun-2020						
Cyanide, Total	0.0539	0.0031	0.010	mg/Kg	0.0500		108	90-110			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

CHAIN OF CUSTODY RECORD

Page 1/1

Sampling Company:	USACE - LRC	Client:	same as sampler	Laboratory:	USACE ERDC-EP-C
POC:	Jen Miller	POC:		POC:	Kayley Watson Laber
Address:	231 S. LaSalle St #500	Address:		Address:	3909 Halls Ferry RD Bldg 3299
	Chicago IL. 60604				Vicksburg, MS 39180
Email:	Jennifer.Miller@usace.army.mil	Email:		Email:	kayley.c.watson@usace.army.mil
Phone:	847-298-2399	Phone:		Phone:	601-634-3835

# of Sampling Sites	Sample ID: Dist	Project	Station	Date	Time	Depth	Matrix	# of Containers	Metals + P + Hg	PCBs (Aroclor)	SVOC	PAH SIM	Ammoina	Oil and Grease	TVS	TOC	Cyanide	COD	TKN			Grain Size (Sieve/Hydrometer)		
									16 oz Glass Jar						8 oz Glass Jar				4 oz Glass Jar			1 gal ziploc- Please double bag		
1	LRC	Kenosha Harbor	KH-2020-01	5/28	1005	17.5 ft	sed	4	X	X		X	X	X	X	X	X	X				X		
2	↓	↓	KH-2020-02	5/28	1101	25 ft	sed	4	X	X		X	X	X	X	X	X	X				X		
3			KH-2020-03	5/28	1119	21.5 ft	sed	4	X	X		X	X	X	X	X	X	X				X		
4			KH-2020-04	5/28	1149	18 ft	sed	4	X	X		X	X	X	X	X	X	X				X		
5			KH-2020-DUP	5/28	/	/	sed	4	X	X		X	X	X	X	X	X	X				X		
6					See field logs (Blind)																			
7																								
8																								
9																								
10																								
11																								
12																								
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Please return coolers to :

1. I hereby transfer the sample containers to ERDC. Samples have been properly labeled and kept on ice or refrigerated.

Total # of Containers	Name	Date	Time
20	Ben O'Neil	5/28	1315

2. I accept these samples for transfer to ERDC:

Total # of Containers	Name	Date	Time
	[illegible]	5/29/2020	1403

3. Condition of samples upon arrival at ERDC:

4. Cooler temperature upon arrival at ERDC: 5.0°C

5. Additional Information:

N.P. = no preserved, HNO3 = preserved with nitric acid, H2SO4 = preserved with sulfuric acid

6. Send Copy of COC: USACE-ERDC-EP-C
POC: Kayley Watson Laber and Jenifer Netchaev
Email: kayley.c.watson@usace.army.mil
jenifer.m.netchaev@usace.army.mil
Phone: 601-634-3835 & 601-634-7431

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Data included from: W:\TransferIn\20E2903 TRANSFER 09 Jul 2020 0902.mdb
			Data included from: W:\TransferIn\20E2903 TRANSFER 10 Jul 2020 0931.mdb
			Data included from: W:\TransferIn\20E2903 TRANSFER 10 Jul 2020 0942.mdb
			Data included from: W:\TransferIn\20E2903 TRANSFER 10 Jul 2020 1530.mdb