
**HUNTINGTON INGALLS INDUSTRIES
PASCAGOULA FACILITY
10-YEAR MAINTENANCE DREDGING PROGRAM
(2022-2032) – PERMIT MODIFICATION 2026
JOINT APPLICATION AND NOTIFICATION**

**U.S. ARMY CORPS OF ENGINEERS
MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY**

Prepared for:
**Huntington Ingalls Industries
Pascagoula Operations
1000 Jerry St. Pe' Hwy.
Pascagoula, MS 39567**

Prepared by:
**Burk-Kleinpeter, Inc.
2400 Veterans Memorial Blvd., Suite 310
Kenner, LA 70062
(504) 486-5901**

August 2026

JOINT APPLICATION AND NOTIFICATION

U.S. ARMY CORPS OF ENGINEERS

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY/OFFICE OF POLLUTION CONTROL

This form is to be used for proposed activities in waters of the United States in Mississippi and for the erection of structures on suitable sites for water dependent industry. Note that some items, as indicated, apply only to projects located in the coastal area of Hancock, Harrison and Jackson Counties.

1. Date

8/14/2026

month day year

2. Applicant name, mailing address, phone number and email address:

Ingalls Shipbuilding - Pascagoula
Huntington Ingalls Industries
P.O. Box 149
Pascagoula, MS 39568-0149

Agent name, mailing address, phone number and email address:

Amelito G. Manganti
Huntington Ingalls Industries; P.O. Box 149
Pascagoula, MS 39568-0149: (228) 935-2073
Amelito.G.Manganti@hii.com

3. Official use only

COE _____
DMR _____
DEQ _____
A95 _____
DATE RECEIVED _____

4. Project location

Street Address 1000 Jerry St. Pe' Hwy. City/Community Pascagoula, MS 39567
Name of Waterway Pascagoula Bay Latitude 30.364 N Longitude (if known) 88.572 W
Geographic location: Section 2 Township 8 S Range 6 W County Jackson

5. Project description

New work _____ Maintenance work X

Dredging

<u>X</u> Channel	length <u>See Plan</u>	width _____	existing depth _____	proposed depth _____
<u> </u> Canal	length _____	width _____	existing depth _____	proposed depth _____
<u> </u> Boat Slip	length _____	width _____	existing depth _____	proposed depth _____
<u> </u> Marina	length _____	width _____	existing depth _____	proposed depth _____
<u> </u> Other-Mooring Basin	length _____	width _____	existing depth _____	proposed depth _____

Cubic yards of material to be removed See Table 1 Type of material Sand, Silt, Clay
Location of spoil disposal area On-site confined disposal facility
Dimensions of spoil area 128 acres Method of excavation Hydraulic Dredging
How will excavated material be contained? By being placed in a bermed confined disposal facility

Construction of structures

<u> </u> Bulkhead	Total length _____	Height above water _____
<u> </u> Pier	length _____	width _____ height _____
<u> </u> Boat Ramp	length _____	width _____ slope _____
<u> </u> Boat House	length _____	width _____ height _____

 Structures on designed sites for water dependent industry (Coastal area only). Explain in item 11 or include as attachment.

 Other (explain) _____

Filling

Dimensions of fill area None
Cubic yards of fill N/A Type of fill N/A

Other regulated activities (i.e. Seismic exploration, burning or clearing of marsh) Explain.

None

6. **Additional information relating to the proposed activity**

Does project area contain any marsh vegetation? Yes _____ No X

(If yes, explain) _____

Is any portion of the activity for which authorization is sought now complete? Yes X No _____

(If yes, explain) Maintenance dredging of existing docks and channels

Month and year activity took place On-going

If project is for maintenance work on existing structures or existing channels, describe legal authorization for the existing work. Provide permit number, dates or other form(s) of authorization. SAM-2022-00224-PAH, dated March 11, 2023

Has any agency denied approval for the activity described herein or for any activity that is directly related to the activity described herein?

Yes _____ No X (If yes, explain) _____

7. **Project schedule**

Proposed start date 10/15/2026 Proposed completion date 3/11/2033

Expected completion date (or development timetable) for any projects dependent on the activity described herein. _____

See Table 1 for dredging schedule and quantities for the time period from October 2026 to March 2033

8. **Estimated cost of the project** To be determined

9. **Describe the purpose of this project. Describe the relationship between this project and any secondary or future development the project is designed to support.** _____

Continue the currently permitted maintenance dredging at the Huntington Ingalls Industries Pascagoula West Bank and East Bank facilities until March 2033. Increase the dredging depth at the West Bank Launch Pit to -77 ft MLW from the currently permitted depth of -74 ft MLW. Extend the east bank sonar pit (-55 ft MLW) to the north by about 1500 feet.

Intended use: Private _____ Commercial X Public _____ Other (Explain) _____

10. **Describe the public benefits of the proposed activity and of the projects dependent on the proposed activity.**

Also describe the extent of public use of the proposed project.

HII is the Largest private employer in Mississippi. Continued employment levels depend on the maintenance dredging.

11. **Narrative Project Description:**

Huntington Ingalls Industries, Pascagoula (HII) is currently permitted to conduct maintenance dredging at its' shipbuilding operations in Pascagoula, Mississippi under the USACE permit # SAM-2022-00224-PAH, dated March 11, 2023, MDMR permit # DMR22-000102, dated June 17, 2022, and MDEQ Water Quality Certification # WQC2022020, dated July 7, 2022. HII is authorized to conduct the following dredge operations as per the referenced permits:

1. Maintenance Dredging to -38 ft MLW at the East Bank Docks;
2. Maintenance Dredging to -55 ft MLW at the East Bank Sonar Pit;
3. Removal of Structures and Maintenance Dredging to -38 ft MLW at the West Bank Old Launch Grid Area;
4. Dredging to a depth of -55 ft MLW at the West Bank Sonar Pit;
5. Maintenance dredging at the West Bank Docks to -38 ft MLW; and
6. Maintenance dredging to a depth of -74 ft MLW at West Bank Launch Pit.

HII needs to make the following changes to the dredging operations in order to meet its' shipbuilding requirements: i) Increase the dredging depth at the West Bank Launch Pit to -77 ft MLW (scheduled for October 2026) from the currently permitted depth of -74 ft MLW. In addition, the MDMR permit is due for extension/renewal in June 2027 while the USACE permit is effective until March 11, 2033. HII is submitting this permit modification application to meet these requirements.

(Refer to Figures 1, 2, 3, 3A, 4, 4A)

HII will dispose the dredge material in an existing upland confined disposal facility located on the site. (refer to Figures 5, 6).

12. Provide the names and addresses of the adjacent property owners. Also identify the property owners on the plan view of the drawing described in Attachment "A". (Attach additional sheets if necessary.)

1. Jackson County Port Authority
3033 Pascagoula Street (P.O. Box 70)
Pascagoula, MS 39567

2.

13. List all approvals or certifications received or applied for from Federal, State and Local agencies for any structures, construction, discharges, deposits or other activities described in this application. Note that the signature in Item 14 certifies that application has been made to or that permits are not required from the following agencies. If permits are not required, place N/A in the space for Type Approval.

<u>Agency</u>	<u>Type Approval</u>	<u>Application Date</u>	<u>Approval Date</u>
Dept. of Environmental Quality		8/14/2026	
Dept. of Marine Resources		8/14/2026	
Army Corps of Engineers		8/14/2026	
City/County_____			
Other_____			

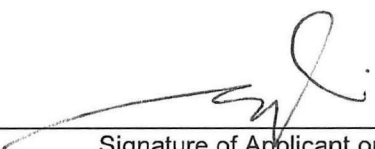
14. Certification and signatures

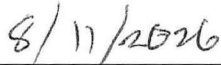
Application is hereby made for authorization to conduct the activities described herein. I agree to provide any additional information/data that may be necessary to provide reasonable assurance or evidence to show that the proposed project will comply with the applicable state water quality standards or other environmental protection standards both during construction and after the project is completed. I also agree to provide entry to the project site for inspectors from the environmental protection agencies for the purpose of making preliminary analyses of the site and monitoring permitted works. I certify that I am familiar with and responsible for the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I am the owner of the property where the proposed project is located or that I have a legal interest in the property and that I have full legal authority to seek this permit.

U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willingly falsifies, conceals, or covers up by any trick, scheme or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both.

Mississippi Coastal Program (Coastal area only)

I certify that the proposed project for which authorization is sought complies with the approved Mississippi Coastal Program and will be conducted in a manner consistent with the program.



Signature of Applicant or Agent

Date

15. Fees

Payable to MS Dept. of Marine Resources
\$50.00 Single-family residential application fee
\$500.00 Commercial application fee
Public notice fee may be required

Please include appropriate fees for all projects
proposed in coastal areas of Hancock, Harrison and
Jackson Counties.

16. If project is in Hancock, Harrison or Jackson Counties, send one completed copy of this application form and appropriate fees listed in Item 15 to:

Department of Marine Resources
Bureau of Wetlands Permitting
1141 Bayview Avenue
Biloxi, MS 39530
(228) 374-5000

If project IS NOT in Hancock, Harrison or Jackson Counties, send one completed copy of this application form to each agency listed below:

District Engineer
Mobile District
Attn: CESAM-RD
P.O. Box 2288
Mobile, AL 36628-0001

District Engineer
Vicksburg District
Regulatory Branch
Attn: CEMVK-OD-F
4155 Clay Street
Vicksburg, MS 39183-3435

Director
Mississippi Dept. of Environmental Quality
Office of Pollution Control
P.O. Box 10385
Jackson, MS 39289

17. In addition to the completed application form, the following attachments are required:***Attachment "A" Drawings***

Provide a vicinity map showing the location of the proposed site along with a written description of how to reach the site from major highways or landmarks. Provide accurate drawings of the project site with proposed activities shown in detail. All drawings must be to scale or with dimensions noted on drawings and must show a plan view and cross section or elevation. Use 8 1/2 x 11" white paper or drawing sheet attached.

Attachment "B" Authorized Agent

If applicant desires to have an agent or consultant act in his behalf for permit coordination, a signed authorization designating said agent must be provided with the application forms. The authorized agent named may sign the application forms and the consistency statement.

Attachment "C" Environmental Assessment (Coastal Area Only)

Provide an appropriate report or statement assessing environmental impacts of the proposed activity and the final project dependent on it. The project's effects on the wetlands and the effects on the life dependent on them should be addressed. Also provide a complete description of any measures to be taken to reduce detrimental offsite effects to the coastal wetlands during and after the proposed activity. Alternative analysis, minimization and mitigation information may be required to complete project evaluation.

Attachment "D" Variance or Revisions to Mississippi Coastal Program (Coastal area only)

If the applicant is requesting a variance to the guidelines in Section 2, Part III or a revision to the Coastal Wetlands Use Plan in Section 2, Part IV of the Rules, Regulations, Guidelines and Procedures of the Mississippi Coastal Program, a request and justification must be provided.

Attachment "A" Drawings



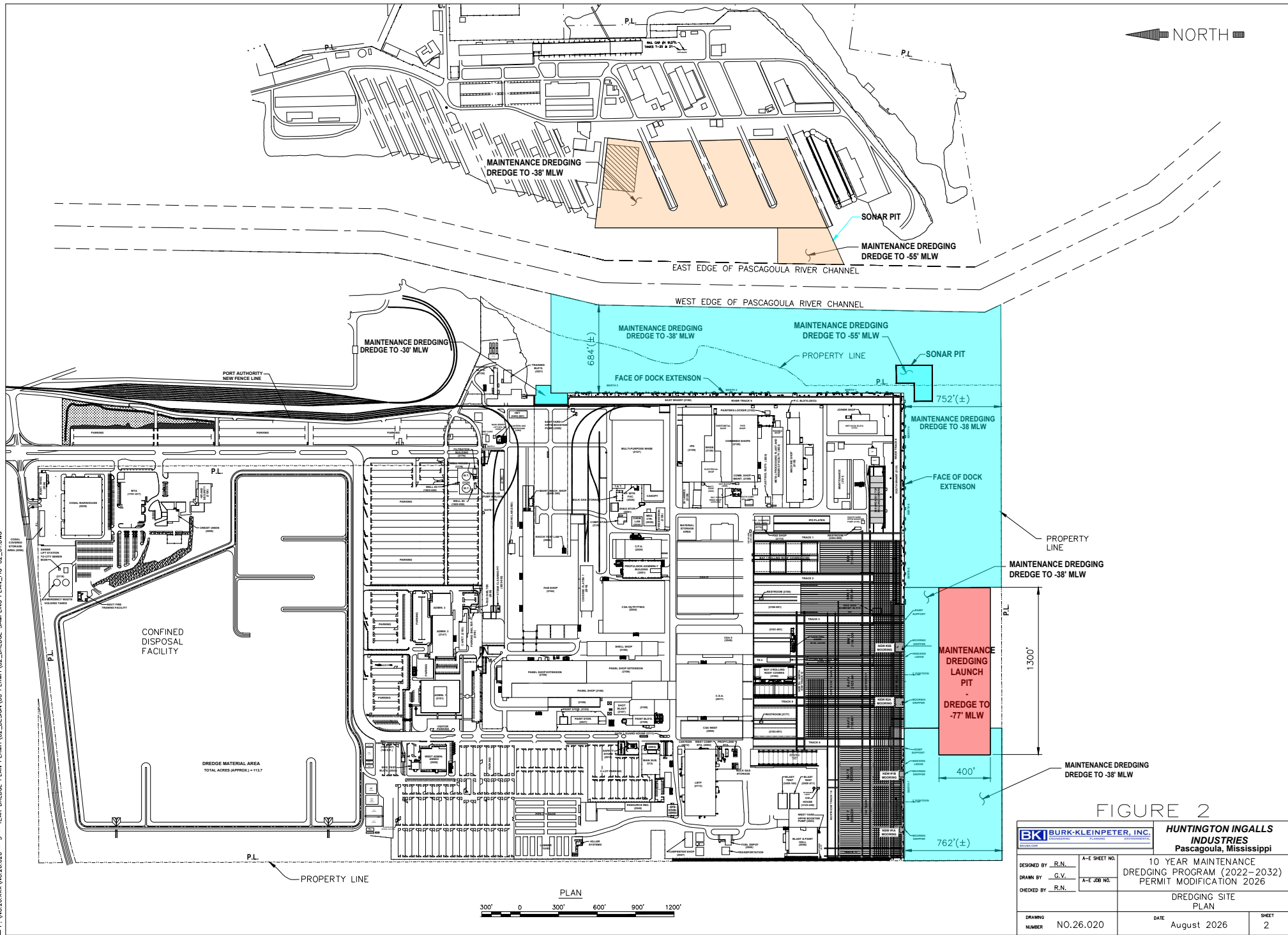
LEGEND:

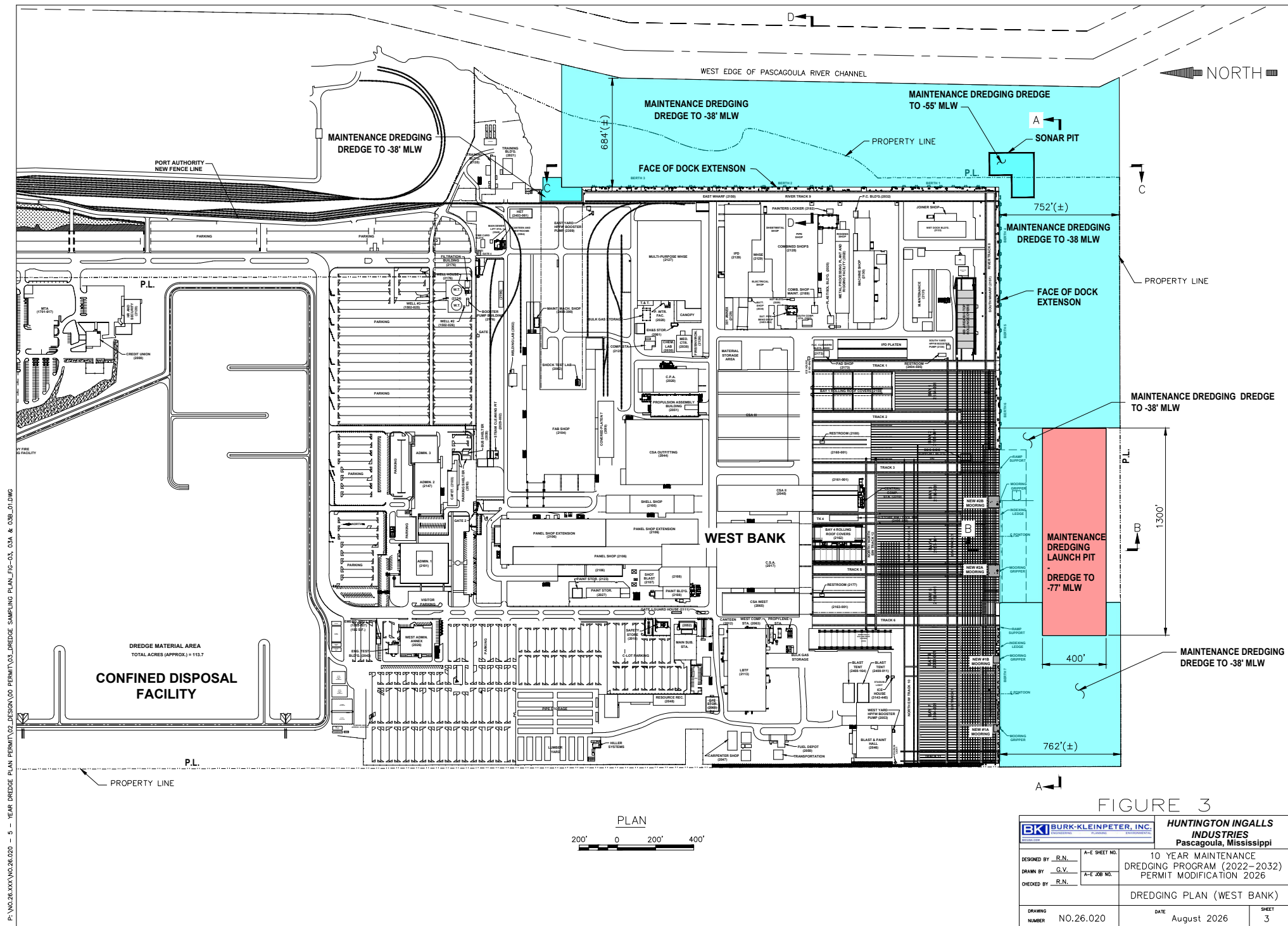
- MAINTENANCE DREDGING AREA (WEST BANK)
- MAINTENANCE DREDGING AREA (EAST BANK)
- CHANGE IN MAINTENANCE DREDGE DEPTH

FIGURE 1

BURK-KLEINPETER, INC. ENGINEERINGPLANNINGENVIRONMENTAL BKIUSA.COM	HUNTINGTON INGALLS INDUSTRIES PASCAGOULA, MISSISSIPPI	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	VICINITY MAP
		PROJECT NUMBER: NO.26.020	DATE: August, 2026
DRAWN BY: GV	DESIGNED BY: RN	APPROVED BY: RN	SHEET: 1

P:\NO.26\XXX\NO.26.020 - 5 - YEAR DREDGE PLAN PERMIT\02 DESIGN\03 PERMIT\02 DREDGE SAMPLING PLAN_FIG-02.DWG





P:\NO.26.XXX\NO.26.020 - 5 - YEAR DREDGE PLAN PERMIT\02 DESIGN\03 DREDGE SAMPLING PLAN_FIG-03_03A & 03B_01.DWG

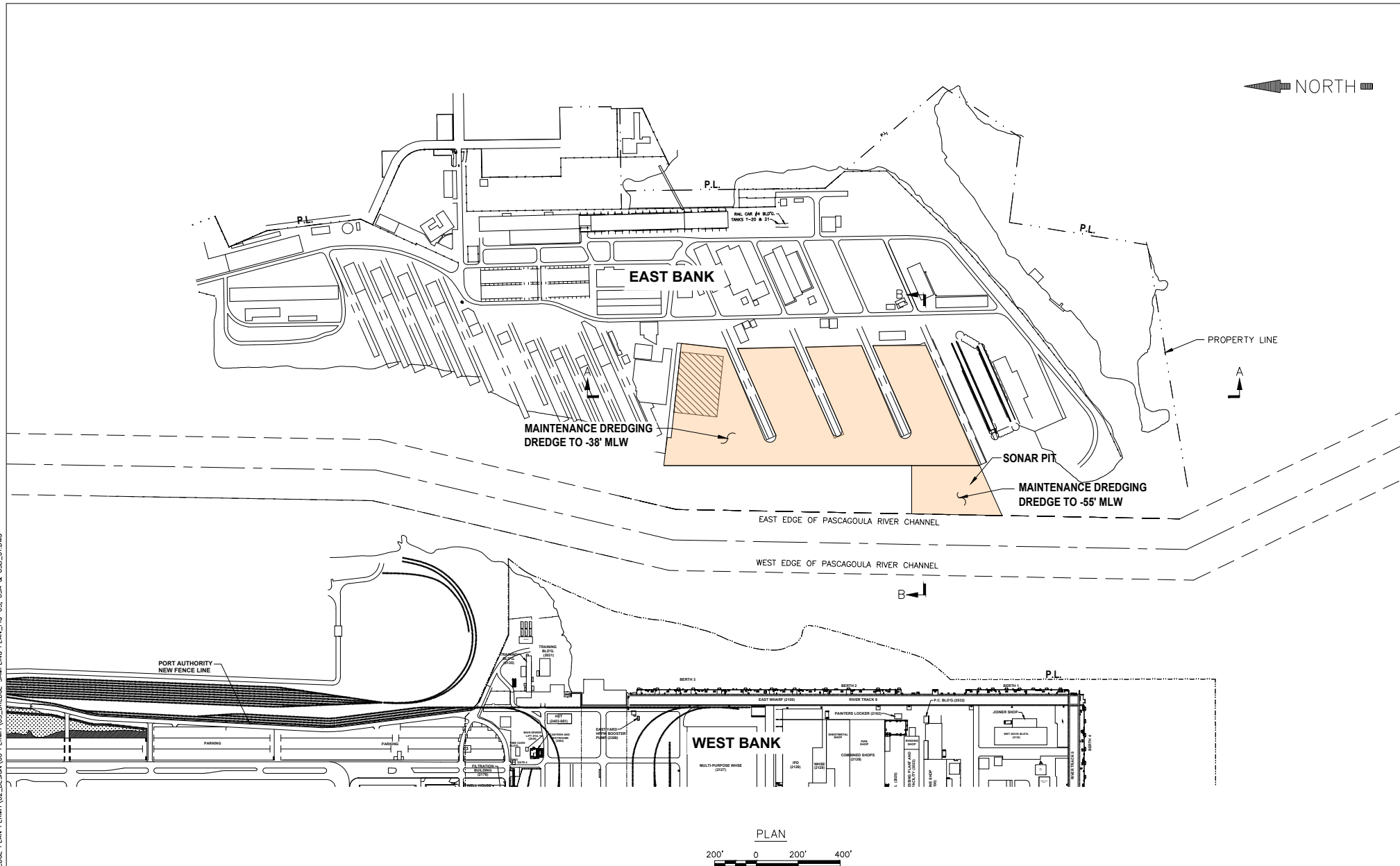


FIGURE 3A

BKI BURK-KLEINPETER, INC. INCORPORATED PLANNING ENGINEERING		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY R.N.	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY G.V.	A-E JOB NO.		
CHECKED BY R.N.		DREDGING PLAN (EAST BANK)	
DRAWING NUMBER	N0.26.020	DATE August 2026	SHEET 3A

P:\NO.26.020\NO.26.020 - 5 - YEAR DREDGE PLAN PERMIT\02 DESIGN\00 PERMIT\04 DREDGE SAMPLING PLAN_FIG-04 & FIG-04A-01.DWG

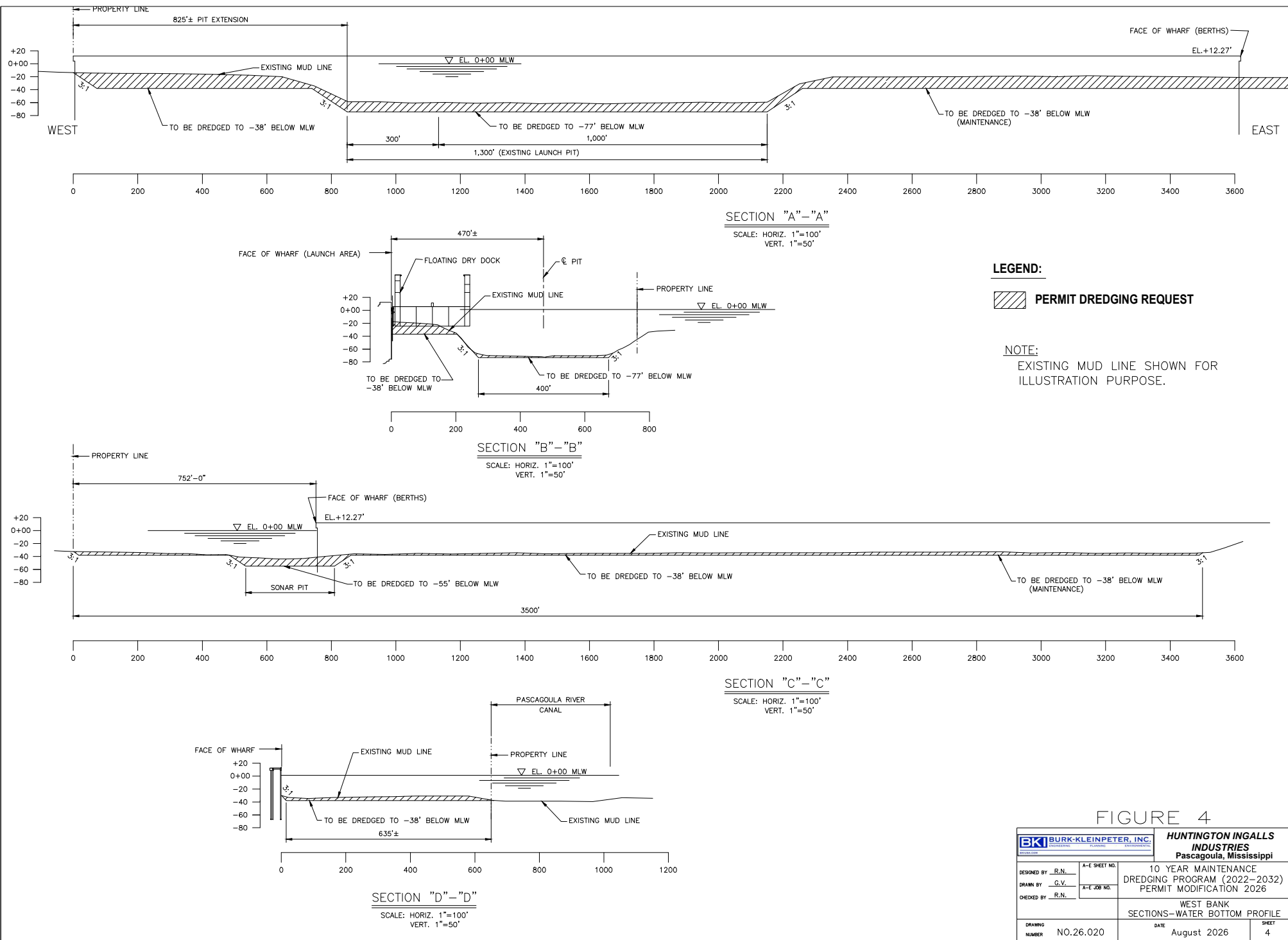
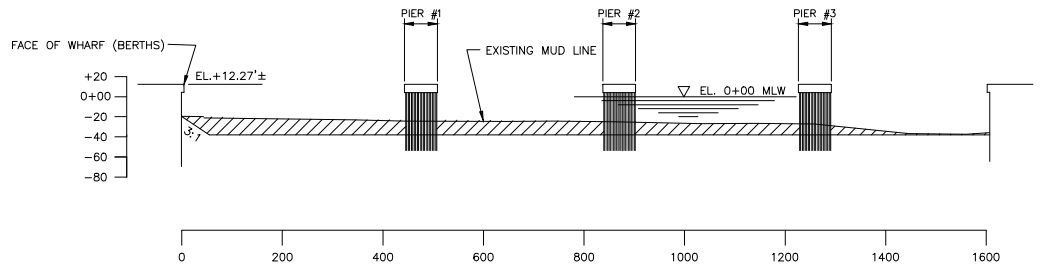
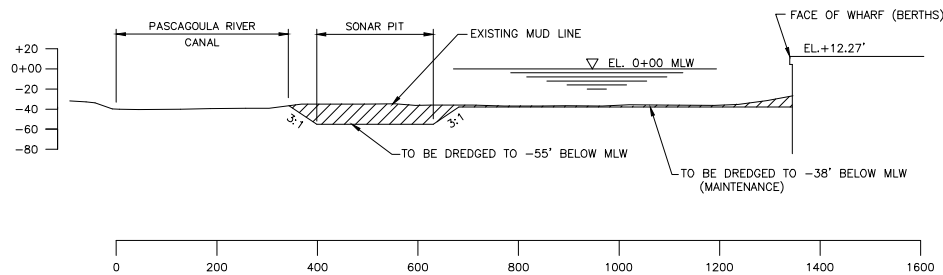


FIGURE 4

BK BURK-KLEINPETER, INC. ENGINEERING PLANNING ENVIRONMENTAL		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY: R.N.	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY: G.V.	A-E JOB NO.		
CHECKED BY: R.N.		WEST BANK SECTIONS-WATER BOTTOM PROFILE	
DRAWING NUMBER: NO.26.020	DATE: August 2026	SHEET: 4	



SECTION "A"-"A"
SCALE: HORIZ. 1"=100'
VERT. 1"=50'



SECTION "B"-"B"
SCALE: HORIZ. 1"=100'
VERT. 1"=50'

LEGEND:

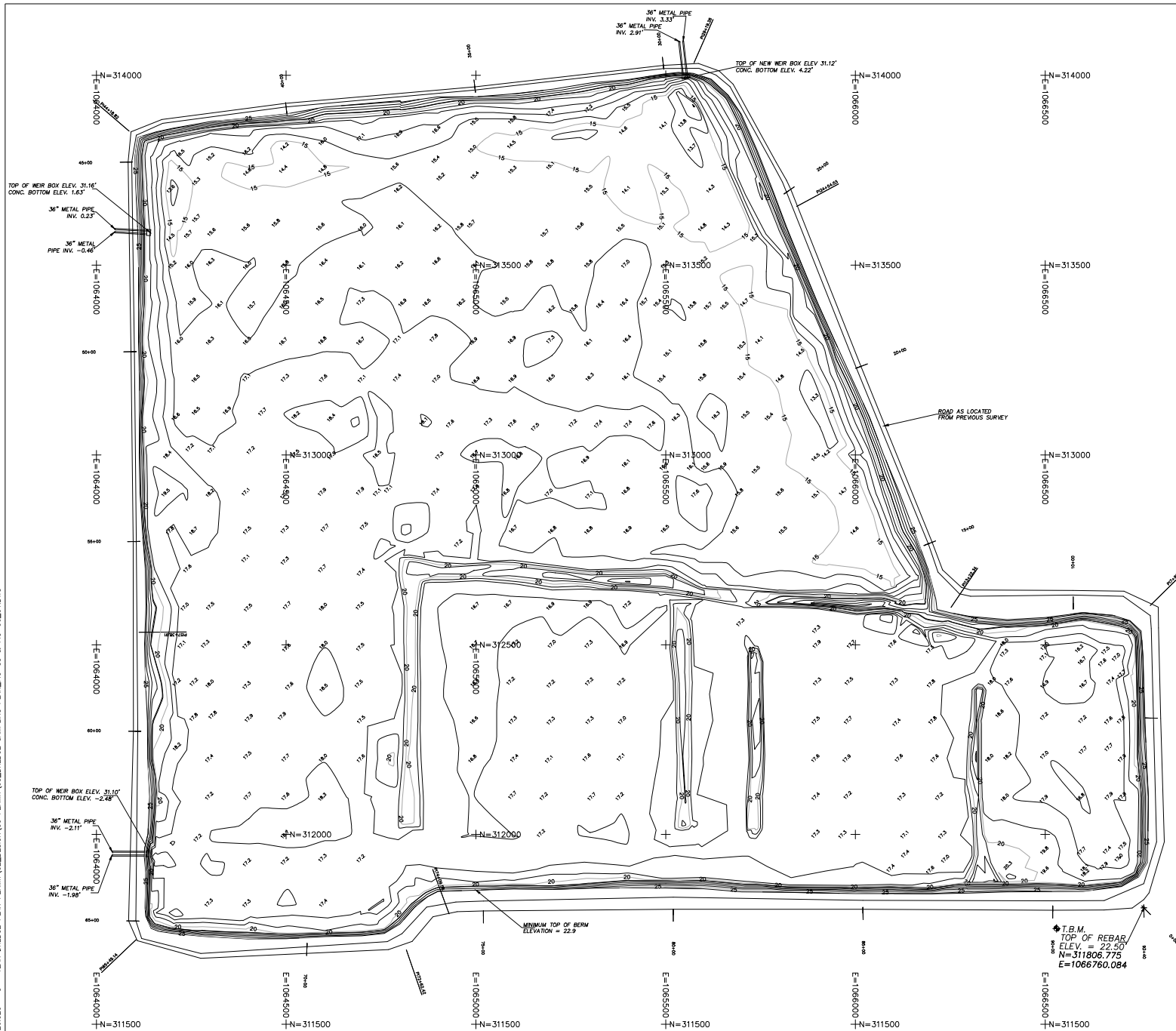
 **PERMIT DREDGING REQUEST**

NOTE:

EXISTING MUD LINE SHOWN FOR ILLUSTRATION PURPOSE.

FIGURE 4A

BK BURK-KLEINPETER, INC. ENGINEERING PLANNING ENVIRONMENTAL		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY <u>R.N.</u>	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY <u>G.V.</u>	A-E JOB NO.		
CHECKED BY <u>R.N.</u>			
		EAST BANK SECTIONS-WATER BOTTOM PROFILE	
DRAWING NUMBER	NO.26.020	DATE	SHEET
		August 2026	4A



NOTES

- STANDARDS OF PRACTICE REQUIRE THAT "THE HORIZONTAL POSITION OF PHYSICAL FEATURES MUST BE PLOTTED TO 1/120TH INCH OF FINAL MAP SCALE. DIMENSIONS "SNAPPED" FROM THE ELECTRONIC VERSION OF THIS MAP SHOULD BE CONSIDERED TO BE NO MORE ACCURATE THAN 1/120TH OF THE MAP SCALE NOTED. CRITICAL CLEARANCE DIMENSIONS MUST BE FIELD CHECKED.
- TYPE OF SURVEY: TOPOGRAPHIC
- FIELD DATE: OCTOBER 13, 2021
- ELEVATIONS REFER TO NAVD 88 (USING GEOID 12B) ESTABLISHED BY RIK GPS UTILIZING MISSISSIPPI NETWORK AS A CONTINUOUSLY OPERATING REFERENCE STATION.
- ONSITE TEM TOP OF REBAR (ELEV. = 22.50') (SEE MAP FOR LOCATION OF LOW POINT)
- VOLUME CALCULATED TO 2' BELOW MINIMUM BERM ELEVATION OF 22.90' (SEE MAP FOR LOCATION OF LOW POINT)

Fill to Elev. 22.90' Available Volume 603,195.5 C.Y.

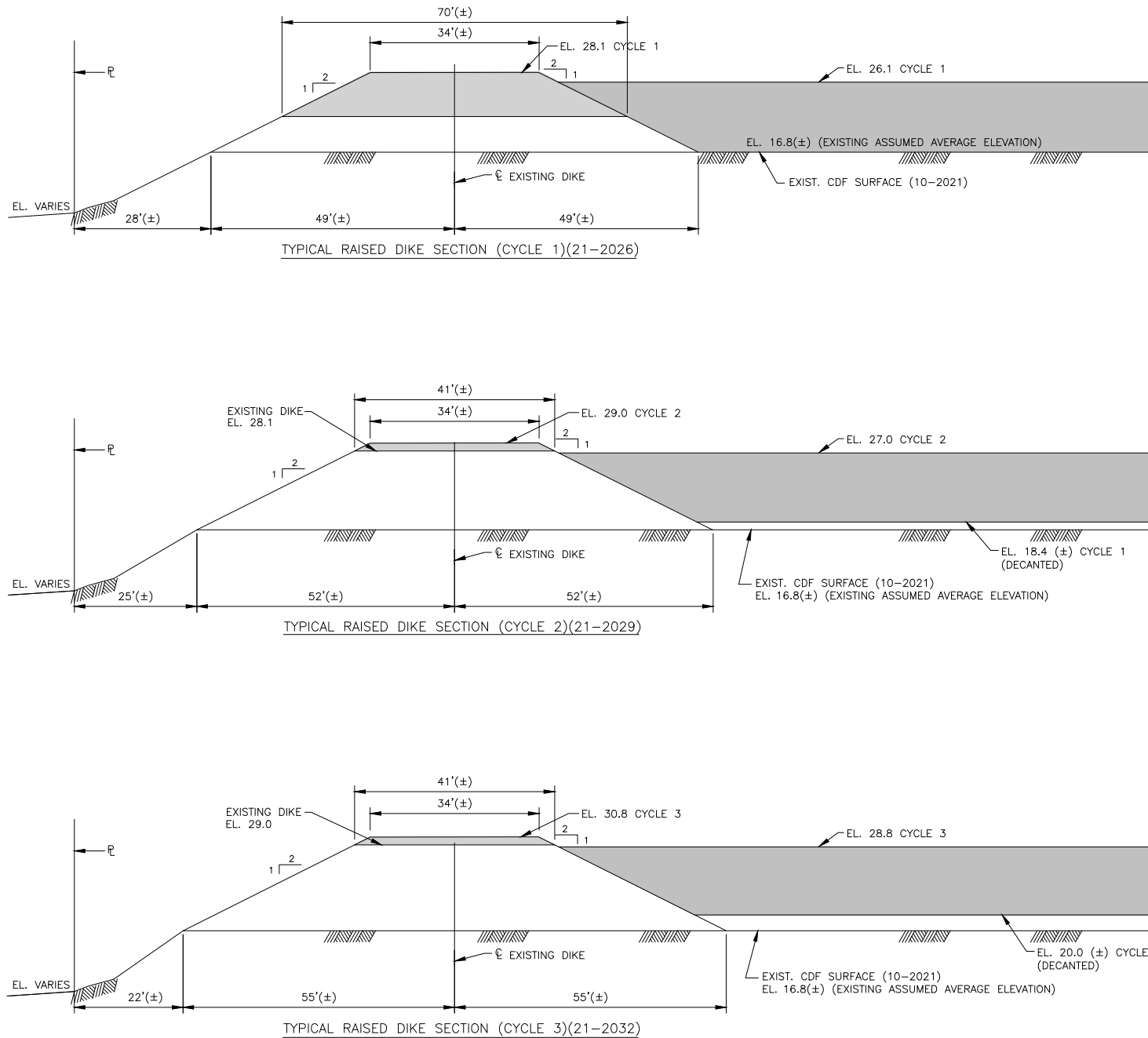
I HEREBY STATE THAT ALL PARTS OF THIS SURVEY AND DRAWING HAVE BEEN COMPLETED IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR SURVEYING IN THE STATE OF MISSISSIPPI TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, AND CONFORMS TO A CLASS "D" SURVEY.

CECIL T. HUDSON, PS DATE: OCTOBER 13, 2021
MISSISSIPPI REGISTRATION NO. PS-3220
PRINTS NOT VALID UNLESS THEY BEAR AN ORIGINAL SEAL.

FIGURE 5

BK BURK-KLEINPETER, INC. INCORPORATED PLANNING ENGINEERING		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY R.N.	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY G.V.	A-E JOB NO.		
CHECKED BY R.N.		SPOIL AREA - SURVEY PLAN	
DRAWING NUMBER NO.26.020	DATE August 2026	SHEET 5	

P:\NO.26.000\NO.26.020 - 5 - YEAR DREDGE PLAN PERMIT\02 DESIGN\01 PERMIT\05 DREDGE SAMPLING PLAN_FIG-05 & FIG-06_01.DWG



NOTES:

- 1.) GEOTECHNICAL INVESTIGATION AND EVALUATION WILL BE PERFORMED BEFORE RAISING DIKES.
- 2.) RAISED DIKE STRUCTURE TO BE ENGINEERED USING GEOTECHNICAL INFORMATION AND MAY INCLUDE USE OF GEO-GRID REINFORCEMENT.
- 3.) DRAWING FOR ILLUSTRATION PURPOSE ONLY, NOT FOR CONSTRUCTION
- 4.) SEE TABLE 1 FOR QUANTITIES/CALCULATION RESULTS.



FIGURE 6

BK BURK-KLEINPETER, INC. ENGINEERING PLANNING ENVIRONMENTAL		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY <u>R.N.</u>	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY <u>G.V.</u>	A-E JOB NO.		
CHECKED BY <u>R.N.</u>		CONFINED DISPOSAL FACILITY DIKE SECTIONS	
DRAWING NUMBER	NO.26.020	DATE	SHEET
		August 26	6

**HUNTINGTON INGALLS INDUSTRIES
PASCAGOULA FACILITY
10-YEAR MAINTENANCE DREDGING PROGRAM
(2022-2032) – PERMIT MODIFICATION 2026**

ENVIRONMENTAL ASSESSMENT

Prepared for:
**Huntington Ingalls Industries
Pascagoula Operations
1000 Jerry St. Pe' Hwy.
Pascagoula, MS 39567**

Prepared by:
**Burk-Kleinpeter, Inc.
2400 Veterans Memorial Blvd., Suite 310
Kenner, LA 70062
(504) 486-5901**

August 2026

**HUNTINGTON INGALLS INDUSTRIES
PASCAGOULA FACILITY
10-YEAR MAINTENANCE DREDGING PROGRAM (2022-2032)
PERMIT MODIFICATION 2026
ENVIRONMENTAL ASSESSMENT**

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**HUNTINGTON INGALLS INDUSTRIES
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**HUNTINGTON INGALLS INDUSTRIES
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F	Biological Assessment Report

SECTION 1

PROJECT DESCRIPTION

1.1 BACKGROUND

Huntington Ingalls Industries (HII), formerly known as Northrop Grumman Ship System (NGSS), has been building Naval, Merchant Marine, and commercial vessels and structures at its' Pascagoula facility located at the mouth of the Pascagoula River since 1938. Maintenance dredging and dredging for certain specific depth requirements and expansions have been performed throughout the history of the facility. The HII's most recent dredging permit from the United States Army Corps of Engineers (USACE) is "Department of the Army Letter of Permission Number SAM-2022-00224-PAH", dated March 11, 2023, and is effective for a period of 10 years until March 11, 2033. The Mississippi Department of Marine Resources (MDMR) permit # DMR22-000102, dated June 17, 2022, is effective until June 17, 2027. These permits authorize maintenance dredging to depths ranging from minus 38 feet Mean Low Water (MLW) to minus 74 feet MLW and include the following maintenance dredging activities:

- Maintenance Dredging to -38 ft MLW at the East Bank Docks;
- Maintenance Dredging to -55 ft MLW at the East Bank Sonar Pit;
- Removal of Structures and Maintenance Dredging to -38 ft MLW at the West Bank Old Launch Grid Area;
- Maintenance Dredging to -55 ft MLW at the West Bank Sonar Pit;
- Maintenance Dredging at the West Bank Docks to -38 ft MLW; and
- Maintenance Dredging to a depth of -74 ft MLW at the West Bank Launch Pit

HII will dispose of the dredge material in an existing upland confined disposal facility located on the site.

HII is proposing to make the following changes to the dredging operations in order to meet its' shipbuilding requirements: i) Increase the dredging depth at the West Bank Launch Pit to -77 ft MLW (scheduled for October 2026) from the currently permitted depth of -74 ft MLW. In addition, the MDMR permit is due for extension/renewal in June 2027 while the USACE permit is effective until March 11, 2033. Therefore, HII is submitting a permit modification/renewal application (Joint Application and Notification) to address these requirements.

**HUNTINGTON INGALLS INDUSTRIES
PASCAGOULA FACILITY
10-YEAR MAINTENANCE DREDGING
(PERMIT MODIFICATION 2026)
ENVIRONMENTAL ASSESSMENT**

1.2 PROJECT LOCATION

The HII Pascagoula Facility is located on the lower east and west banks of the East Pascagoula River, in the City of Pascagoula, Jackson County, Mississippi. The West Pascagoula River lies approximately 1.5 miles west of the site. The maintenance dredging area extends along the west bank facilities southern and eastern shore (along the west bank of the Pascagoula River) and along the east bank facilities western shore (along the east bank of the Pascagoula River). Refer to Figure 1 for the project vicinity map.

HII facility is adjacent to areas where maintenance dredging has been taking place on a periodic basis. The Port of Pascagoula and ancillary companies are located north of, or upriver from the HII site. Former Naval Station Pascagoula is located on an island south of the HII site; and a major oil refinery, Chevron, is approximately 6 miles to the east of the site. Figure 1 illustrates the industrialized nature of the area with relevant industries and HII site labeled.

1.3 RELATION TO PREVIOUSLY AUTHORIZED ACTIVITIES

In December 2004, HII was granted a permit to maintenance dredge, approximately 1,160,000 cubic yards of material, over a ten-year period from existing berthing areas, launch areas, and sonar pit to various existing depths of -50, -70, and -78 feet MLW at the east and west bank facilities (Permit No. MS04-02628-L dated November 1, 2004). A permit modification issued in January 2006 authorized additional dredging of 340,000 cubic yards from areas south of Bay 6 and Bay 7 at the west bank facilities to a depth of -35 feet MLW. In December 2014, HII was granted a modification to the permit (Modification #3 to MS04-2628-L, dated December 3, 2014) to continue maintenance dredging for ten years until November 1, 2024 at the west bank facilities. The permit modification permitted continued dredging in the ship berths to a depth of -38 feet MLW, in the Sonar Pit to a depth of -50 feet MLW, and in the Launch Pit to a depth of -71 feet MLW. HII was granted a modification to the permit (Modification #4 to MS04-2628-L, dated May 23, 2017) to increase the maintenance dredging depth in the Launch Pit at the west bank facilities to elevation minus 74 feet MLW. HII's current USACE permit# SAM-2022-00224-PAH, dated March 11, 2023, is effective for a period of 10 years until March 11, 2033. The MDMR permit # DMR22-000102, dated June 17, 2022, is effective until June 17, 2027.



LEGEND:

- MAINTENANCE DREDGING AREA (WEST BANK)
- MAINTENANCE DREDGING AREA (EAST BANK)
- CHANGE IN MAINTENANCE DREDGE DEPTH

FIGURE 1

BKI BURK-KLEINPETER, INC. ENGINEERING PLANNING ENVIRONMENTAL BKIUSA.COM	HUNTINGTON INGALLS INDUSTRIES PASCAGOULA, MISSISSIPPI	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	VICINITY MAP
		PROJECT NUMBER: NO.26.020	DATE: August, 2026
DRAWN BY: GV	DESIGNED BY: RN	APPROVED BY: RN	SHEET: 1

**HUNTINGTON INGALLS INDUSTRIES
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10-YEAR MAINTENANCE DREDGING
(PERMIT MODIFICATION 2026)
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This permit application requests authorization for the following changes to the dredging activities at HII:

- Increase the dredging depth at the West Bank Launch Pit to -77 ft MLW (scheduled for October 2026) from the currently permitted depth of -74 ft MLW; and

In addition, the permit application requests renewal of MDMR permit for another five (5) years.

SECTION 2

PURPOSE AND NEED FOR ACTION

2.1 PURPOSE

The purpose of the on-going maintenance dredging and the permit application is to meet HII continual maintenance dredging needs. HII will continue the maintenance dredging at the east bank and west bank facilities to various depths as per USACE and MDMR permits (currently permitted depths ranging from minus 38 feet MLW to minus 74 feet MLW). The permits enable HII to carefully plan its dredging schedule to manage the facility operations as well as to allow for properly managed disposal of maintenance dredged material in its confined disposal facility. Currently, HII is operating its maintenance dredging requirements under a USACE permit# SAM-2022-00224-PAH, dated March 11, 2023 and MDMR permit # DMR22-000102, dated June 17, 2022. The maintenance dredging areas are shown in Figure 2 (Dredging Site Plan).

The purpose of the permit modification application is to request authorization for the following changes to the dredging activities at HII:

- Increase the dredging depth at the West Bank Launch Pit to -77 ft MLW (scheduled for October 2026) from the currently permitted depth of -74 ft MLW; and

In addition, the permit application requests renewal of MDMR permit for another five (5) years.

The purpose of increasing the dredging depth at the West Bank Launch Pit from -74 ft MLW to -77 ft MLW is to provide operational flexibility/safety during launching of ships from the floating dry dock. Increasing the depth by 3 ft will reduce the risk of floating dry dock being grounded in the sand bed.

P:\NO.26\XXX\NO.26.020 - 5 - YEAR DREDGE PLAN PERMIT\02 DESIGN\03 PERMIT\02 DREDGE SAMPLING PLAN_FIG-02.DWG

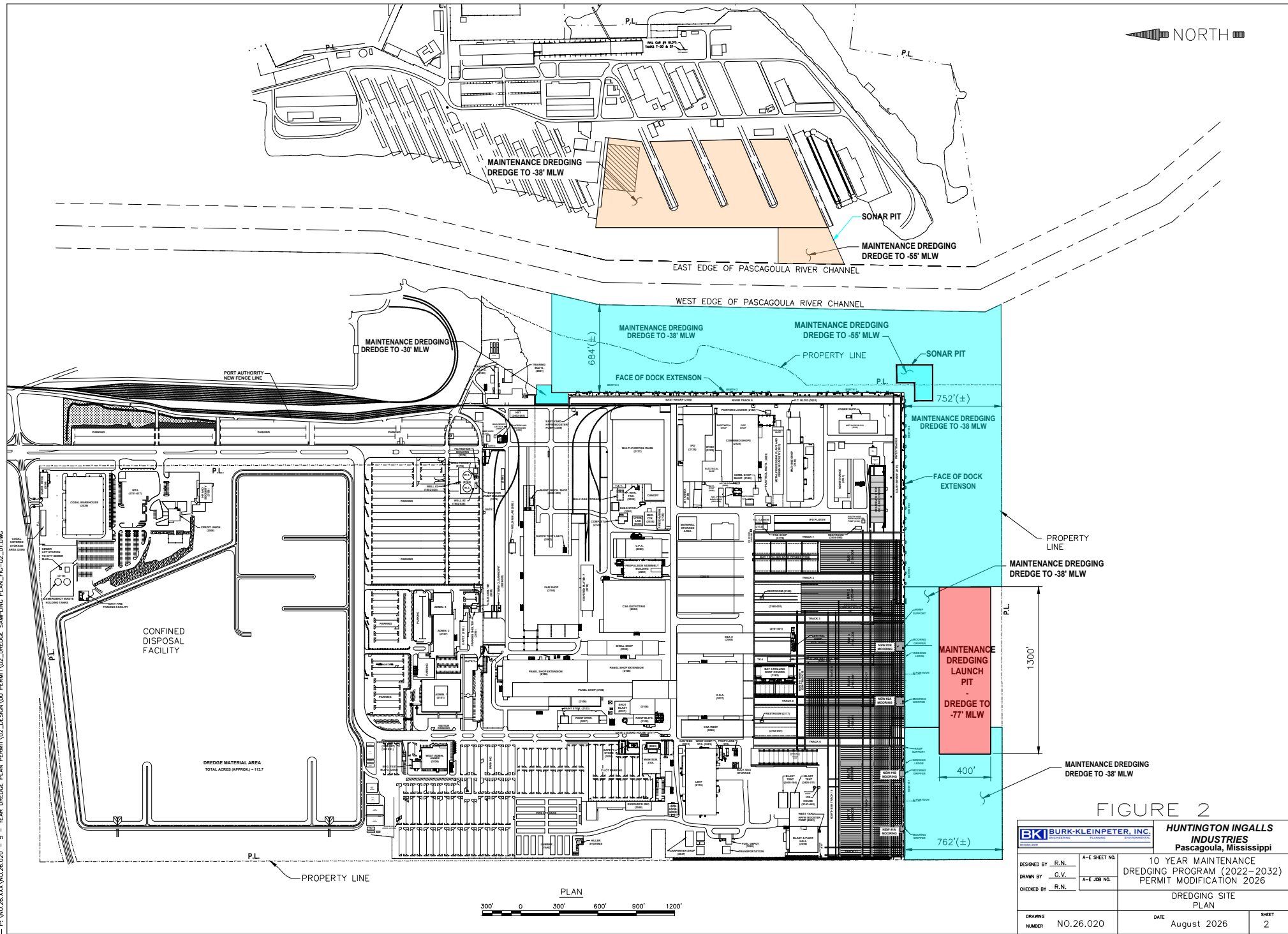


FIGURE 2

BK BURK-KLEINPETER, INC. ENGINEERING PLANNING SURVEYING		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY <u>R.N.</u>	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY <u>G.V.</u>	A-E JOB NO.	DREDGING SITE PLAN	
CHECKED BY <u>R.N.</u>		DRAWING NUMBER <u>NO.26.020</u>	DATE <u>August 2026</u> SHEET <u>2</u>

2.2 NEED

Maintenance dredging at HII Pascagoula facility is required on a periodic basis as the harbor, berths, turning basins, and launch pits are artificially made as this is not a natural deep draft harbor. Siltation from the slow-moving Pascagoula River and tidal exchanges bringing in sand material from the Mississippi Sound, continually depositing material in the work area and ship channels necessary for ship movements. Experience has proven that maintenance dredging on a three-year schedule is most efficient to maintain the required water depths. Dredging on the east bank docks and sonar pits is required for mooring and docking of navy and Coast Guard ships and sonar testing of DDG ships. Dredging on the West Bank Launch Pit Dry Dock is required for launching and docking of navy ships.

HII has the most complicated maintenance dredging requirements in the Pascagoula harbor. HII basically dredges two different types of areas. One area is the approach to and from the main river channel from the various berths, piers, and equipment testing areas on the West Bank and the East Bank of the facility. The maintenance dredging will be confined to the area around the West Bank Facility and the East Bank Facility. The area along the West Bank facility and the East Bank Facility is essentially an extension of the channel, being used only for navigation, and exhibiting the same requirements for dredging to minus 38 MLW as the adjacent river channel.

The other required maintenance dredging is the area at the ship berths and the Pontoon (dry dock). These are work areas and these facilities pose unique problems for HII which require special consideration. Specifically, maintenance dredging of these areas cannot take place while the berths or the dry dock are in use.

The two different zones of dredging, shown in Figure 2, are distinguished from each other by the fact that the channel areas are easily accessible for dredging, while the berths and Launch Pit are often occupied. Therefore, dredging must take place around shipyard activities or the shipyard activities must be modified to accommodate the dredging. In the navigation zones, time and the speed of dredging are not critical concerns, while in the work areas, they are crucial.

The Berths

There are seven ship berths currently in service at HII on the West Bank. The berths are where new ships are moored for the year or more that it takes to complete outfitting of a ship for final delivery to the customer. Ships also may return to the shipyard for regularly scheduled maintenance, emergency repairs, or overhauling. These ships stay at a berth for a couple of weeks to many months.

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Maintenance dredging is a major disruption for the shipyard. Maintenance dredging at the berths is done to an elevation minus 38.0 M.L.W. Depending on how many ships are at the shipyard's berths at the time of maintenance dredging, ships must either be moved from berth to berth or, if there are no empty berths, ships are double-berthed. Moving of ships around while berthed and being outfitted is obviously an undesirable operation due to expense and schedule. It is, therefore, essential that dredging of the berths be accomplished by the quickest, least intrusive and most reliable method available.

The Launch Pit

The Pontoon is one of the most important and versatile pieces of equipment in HII inventory. The "Pontoon," as it is called, is a dry dock, 238 feet wide by 800 feet long. The Pontoon is used to launch ships built in the West Bank shipyard, to move ships from sea to shore for extensive repairs, and to perform work on ships while on the drydock itself. During a launch event, the ship is rolled to the edge of the dock, the dockside wall of the Pontoon is removed, the ship is rolled (via powered translation cars) onto the Pontoon, and the wall is replaced. The Pontoon is then winched by chains attached to heavy anchors out to the Launch Pit. The Pontoon is then submerged and the ship floats off for finish work at one of the berths. The launching of a ship is an event that is scheduled in advance. Nothing is allowed to interfere with the launch date(s), since failure to adhere to the schedule could back up other production activities in the yard.

The Pontoon is also used as a workstation for ships requiring repairs, overhauling, propulsion hardware maintenance or painting below the waterline. Work performed on the Pontoon can frequently take several weeks to several months to complete, so regularly scheduled or planned maintenance dredging would be scheduled around a launch date.

The Pontoon is also used in a reverse role to move a ship from the water to the shore. Dredging of the Launch Pit, therefore, must be carefully scheduled around known events and must be capable of responding to sudden demands on the Pontoon.

Maintenance dredging at the launch pit will be to elevations - 74 ft MLW as per the current permit. There is a need to increase the dredging depth to - 77 ft MLW to improve the operational flexibility during launch of the ships from floating dry dock. Increasing the dredging depth will reduce the risk of the dry dock being grounded on the sand bed.

SECTION 3

ALTERNATIVES INCLUDING PROPOSED ACTION

3.1 NO ACTION ALTERNATIVE

The no action alternative consists of continuing the shipyard operations without any maintenance dredging of existing berthing areas, launch areas, and sonar pit. Without maintenance dredging, HII will not be able to maintain the specific depth requirements in the berthing areas, launch areas, and sonar pit due to continued siltation of the channels. This will adversely impact the shipyard operations.

Not increasing the dredging depth at the West Bank Launch Pit to -77 ft MLW from the currently permitted depth of -74 ft MLW will restrict the operational flexibility during launching of the ships from the floating dry dock. Not increasing the dredging depth will also increase the risk of grounding of floating dry dock in the sand bed.

HII is the largest industrial employer in the entire State of Mississippi. Reduced economic activity at the shipyard will have significant adverse impacts on the economy of Jackson County and the State of Mississippi. Thus, the no action alternative will have a negative impact to both HII and the State of Mississippi.

3.2 MAINTENANCE DREDGING

Maintenance dredging at HII Pascagoula facility will be conducted on a periodic basis at the berthing areas, launch areas, and sonar pit. Two proven dredging technologies are available to perform maintenance dredging work at the HII Pascagoula facility. They are hydraulic (cutter head suction) and mechanical (buckets) methods. The appropriate methods for disposing of the dredged material differ for each technology. For hydraulic dredging, pipeline transport and storage at a nearby upland confined disposal facility (CDF) is the most efficient. For the mechanical dredge, transport by hopper barge to an approved offshore disposal site is the standard procedure. Both of these procedures have been evaluated by HII in the past.

There are significant differences between the two technologies that have important implications for HII. The most significant operational difference between the two methods of dredging was found to be the production rates of the two types of equipment. The hydraulic method has proven to be the most efficient time wise and the most economical.

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The required minimum slope of 3:1 (horizontal: vertical) will be maintained at the increased depth of -77 ft MLW in the West Bank Launch Pit. The required minimum slope of 3:1 (horizontal: vertical) will also be maintained in the east bank sonar pit expansion.

Three dredge material disposal alternatives have been studied and evaluated by HII. These disposal methods consist of the following: 1) Disposal in the on-site CDF; 2) Disposal in a MDMR approved beneficial use site; and 3) a combination of on-site CDF disposal and MDMR approved beneficial use site. HII can only employ hydraulic dredging in order to maintain its' tight production schedule during the dredging operations. In order to dispose the dredge material in a MDMR approved beneficial use site, the site should be located in the immediate vicinity of the dredge area as HII needs to employ hydraulic dredging to maintain its' tight production schedule. If the beneficial use site is located farther from the dredge area, the dredge material needs to be dredged by mechanical methods and hauled off by barges to the disposal site. This will negatively impact the HII production schedule as dredging by mechanical methods is slower compared to hydraulic dredging. Past experience has proven that hydraulic dredging with disposal in on-site CDF is the most economical and environmentally sound dredging alternative. Therefore, hydraulic dredging combined with on-site CDF disposal is the preferred alternative in the absence of MDMR approved beneficial use sites in the immediate vicinity of the HII Pascagoula facility.

SECTION 4

DREDGE MATERIAL DISPOSAL

4.1 HII ON-SITE MANAGED CONFINED DISPOSAL FACILITY

At the north end of the HII facility, HII operates their own dredge material Confined Disposal Facility (CDF) of approximately 128 acres in size, including levees. Currently, this CDF is actively managed by HII to facilitate the dewatering process of previous dredging operations, allowing the CDF to be used to its fullest capacity. Properly managed and engineered, the potential exists for the CDF to meet the dredging needs of HII for many years to come.

The option of using the CDF alone as a disposal alternative has certain benefits. It would allow the use of hydraulic dredging (the preferred and recommended method) for all of HII dredging needs. This would allow HII to schedule its expanded facility dredging requirements and maintenance dredging around shipyard operations and berthing schedules.

The dredging schedule over the next 6 years (from October 2026 to September 2032 is provided in Table 1. The dredging plan and section drawings are provided in Figure 3, and Figure 4 respectively. The CDF plan and section drawings are provided in Figure 5 and Figure 6 respectively.

TABLE 1
10 - YEAR DREDGING SCHEDULE (10/2026 - 09/2032)

DREDGING CYCLE	DREDGING ITEM	PROJECTED DREDGING START TIME (MONTH-YEAR)	THEORETICAL VALUE (cy)	CDF VOLUME REQUIRED (cy) (theoretical x 1.8 (fluff) = cy)	APPROX. CDF AREA AVAILABLE (Minus Dike Section) (ACRES)	AVERAGE SURFACE MATERIAL ELEVATION* (Before / After Dredging)	LEVEE ELEVATION REQUIRED w/ 2 ft. Freeboard (El.)	SPOIL AREA CAPACITY WITH 2' FREEBOARD (C.Y.) (CDF AREA X (LEVEE EL. - EXIST. LEVEE EL. - 2' FREEBOARD) / 27)	NOTES
1	MAINTENANCE WESTBANK (Berth 3,7, Sonar Pit & Launch Pit)	Oct-26	220,000	400,000	90	16.5* / 26.1	28.1	1,394,000	Dike to be Raised, Dressed and Regraded to Uniform Elevation of 28.1 Before Dredging
2	MAINTENANCE WESTBANK (Berth 6), EAST BANK (Pier 3 and 4, Pier 4 Sonar Pit)	Sep-29	440,000	790,000	90	17.4* / 27.0	29.0	1,394,000	Dike to be Raised, Dressed and Regraded to Uniform Elevation of 29.0. Before Dredging. Requires Spoil Area Management, Weir Monitoring and Dredging Coordination Subcontract
3	MAINTENANCE WESTBANK (Berth 1,2,4,5, Dry Dock, & Launch Pit)	Sep-32	400,000	720,000	90	18.2* / 28.8	30.8	1,655,000	Dike to be Raised, Dressed and Regraded to Uniform Elevation of 30.8. Before Dredging. Requires Spoil Area Management, Weir Monitoring and Dredging Coordination Subcontract
ASSUMPTION - 90% CONSOLIDATION / DRYING VOLUME OVER 3 YEAR PERIOD.									
* After 90% Consolidation of Previous Dredge Spoil									
	Revision 1, 02.24.17. Added 110,000 CY for deepening launch Pit								

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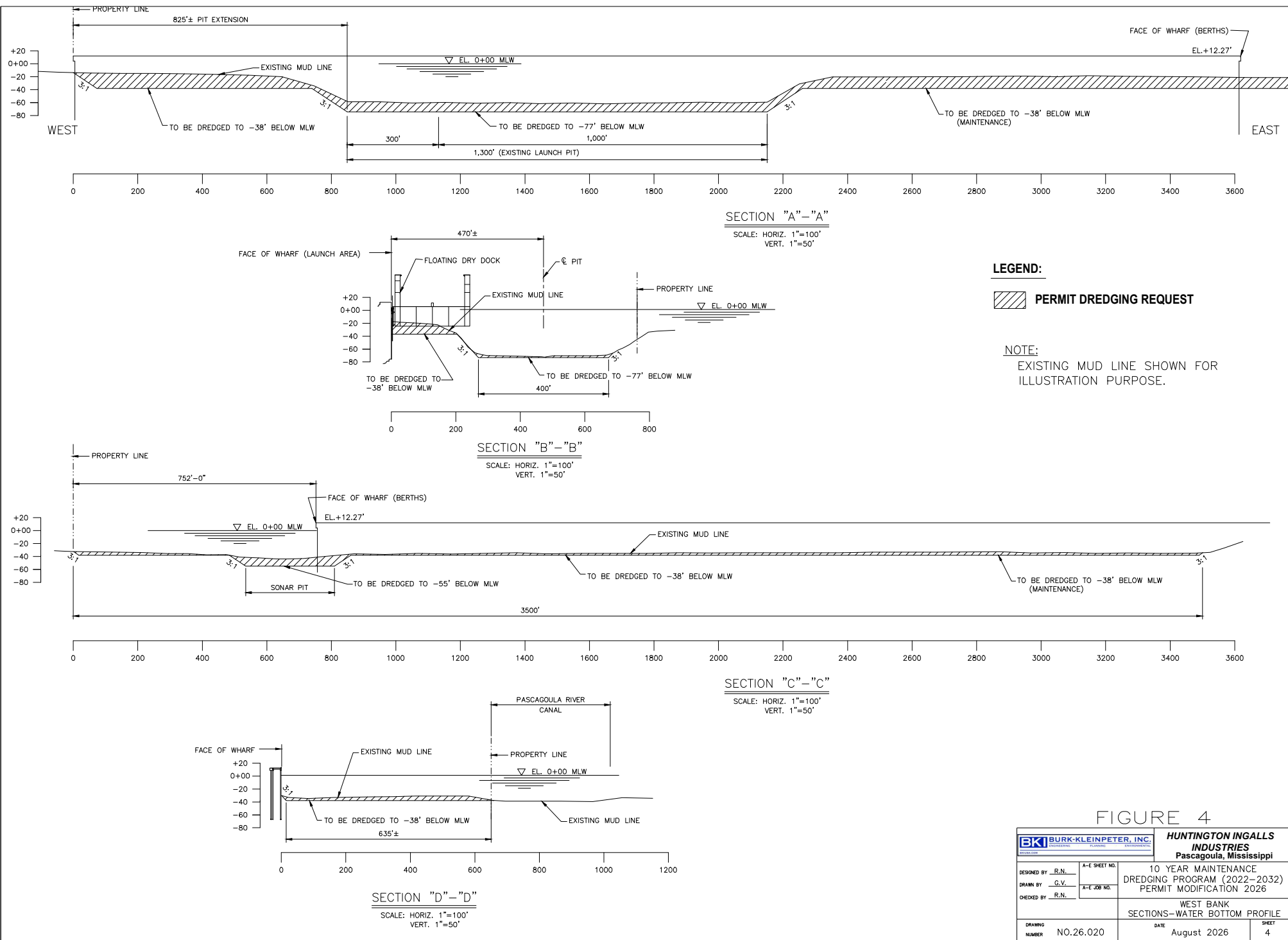
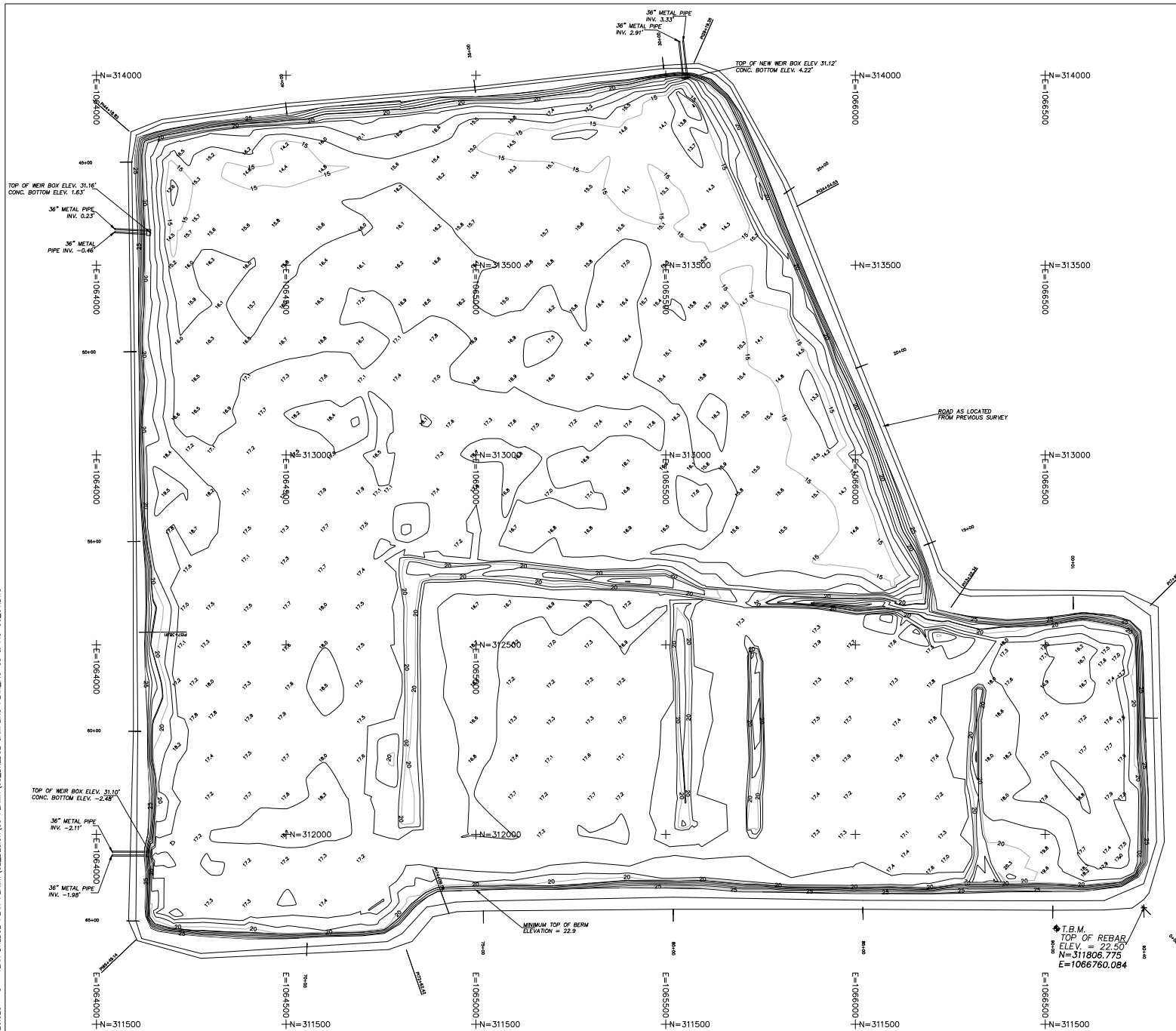


FIGURE 4

BK BURK-KLEINPETER, INC. ENGINEERING PLANNING ENVIRONMENTAL		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY: R.N.	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY: G.V.	A-E JOB NO.		
CHECKED BY: R.N.		WEST BANK SECTIONS-WATER BOTTOM PROFILE	
DRAWING NUMBER: NO.26.020	DATE: August 2026	SHEET: 4	



- NOTES**
- 1.) STANDARDS OF PRACTICE REQUIRE THAT "THE HORIZONTAL POSITION OF PHYSICAL FEATURES MUST BE PLOTTED TO 1/120TH INCH OF FINAL MAP SCALE. DIMENSIONS "SNAPPED" FROM THE ELECTRONIC VERSION OF THIS MAP SHOULD BE CONSIDERED TO BE NO MORE ACCURATE THAN 1/120TH OF THE MAP SCALE NOTED. CRITICAL CLEARANCE DIMENSIONS MUST BE FIELD CHECKED.
 - 2.) TYPE OF SURVEY: TOPOGRAPHIC
 - 3.) FIELD DATE: OCTOBER 13, 2021
 - 4.) ELEVATIONS REFER TO NAVD 88 (USING GEOID 12B) ESTABLISHED BY RIK GPS UTILIZING MISSISSIPPI NETWORK AS A CONTINUOUSLY OPERATING REFERENCE STATION.
 - 5.) ONSITE TEM TOP OF REBAR (ELEV. = 22.50')
 - 6.) VOLUME CALCULATED TO 2' BELOW MINIMUM BERM ELEVATION OF 22.90' (SEE MAP FOR LOCATION OF LOW POINT);
- Fill to Elev. 22.90' Available Volume 603,165.5 C.Y.

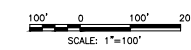
I HEREBY STATE THAT ALL PARTS OF THIS SURVEY AND DRAWING HAVE BEEN COMPLETED IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR SURVEYING IN THE STATE OF MISSISSIPPI TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, AND CONFORMS TO A CLASS "D" SURVEY.

CECIL T. HUDSON, PS
MISSISSIPPI REGISTRATION NO. PS-3220
PRINTS NOT VALID UNLESS THEY BEAR AN ORIGINAL SEAL.

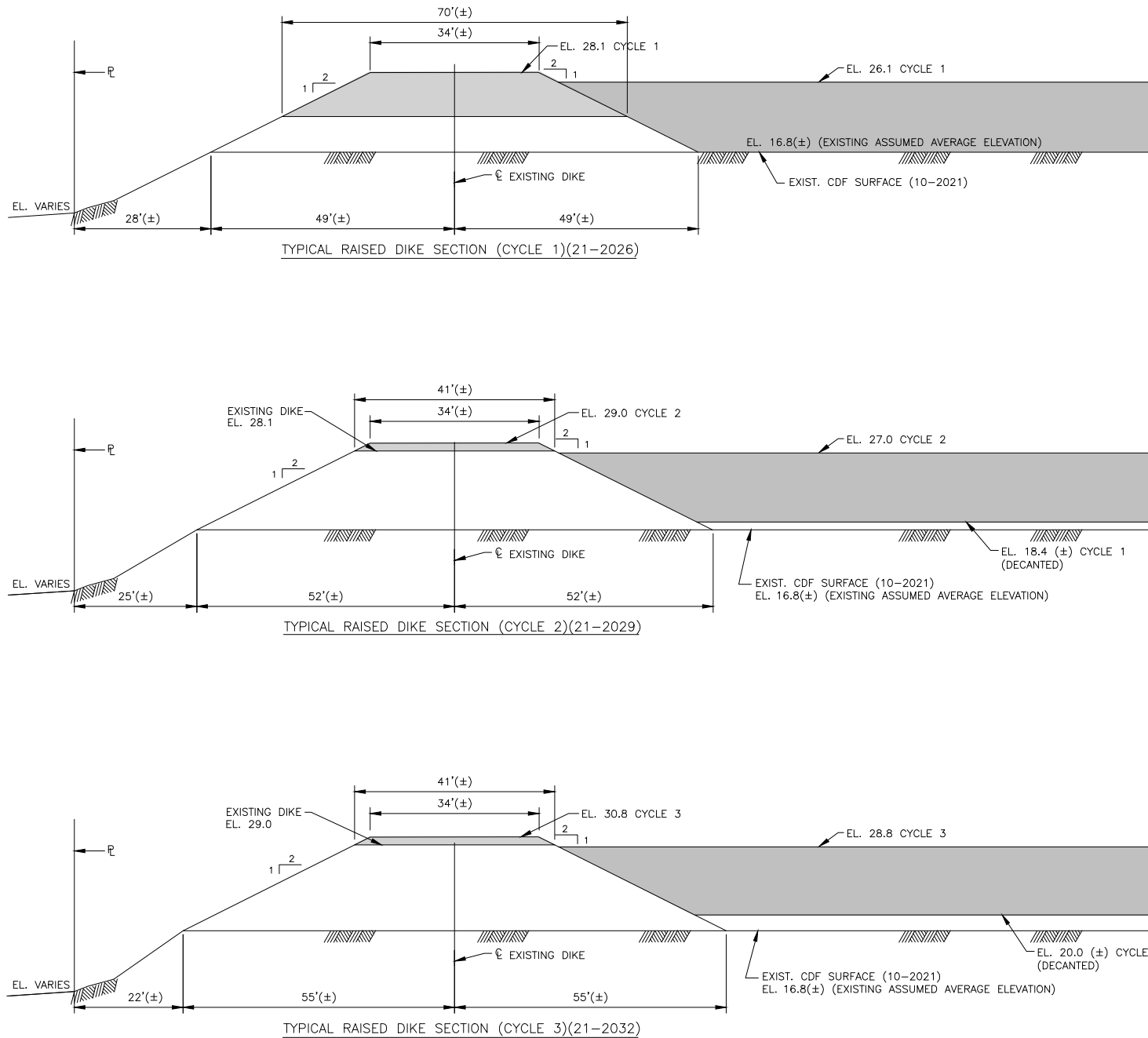
DATE: OCTOBER 13, 2021

FIGURE 5

BK BURK-KLEINPETER, INC. INCORPORATED PLANNING ENGINEERING		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY <u>R.N.</u>	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY <u>G.V.</u>	A-E JOB NO.		
CHECKED BY <u>R.N.</u>		SPOIL AREA - SURVEY PLAN	
DRAWING NUMBER	NO.26.020	DATE	August 2026
		SHEET	5



P:\NO.26.000\NO.26.020 - 5 - YEAR DREDGE PLAN PERMIT\02 DESIGN\01 PERMIT\05 DREDGE SAMPLING PLAN_FIG-05 & FIG-06_01.DWG



NOTES:

- 1.) GEOTECHNICAL INVESTIGATION AND EVALUATION WILL BE PERFORMED BEFORE RAISING DIKES.
- 2.) RAISED DIKE STRUCTURE TO BE ENGINEERED USING GEOTECHNICAL INFORMATION AND MAY INCLUDE USE OF GEO-GRID REINFORCEMENT.
- 3.) DRAWING FOR ILLUSTRATION PURPOSE ONLY, NOT FOR CONSTRUCTION
- 4.) SEE TABLE 1 FOR QUANTITIES/CALCULATION RESULTS.



FIGURE 6

BK BURK-KLEINPETER, INC. ENGINEERING PLANNING ENVIRONMENTAL		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY <u>R.N.</u>	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032) PERMIT MODIFICATION 2026	
DRAWN BY <u>G.V.</u>	A-E JOB NO.		
CHECKED BY <u>R.N.</u>		CONFINED DISPOSAL FACILITY DIKE SECTIONS	
DRAWING NUMBER	NO.26.020	DATE	SHEET
		August 26	6

SECTION 5

AFFECTED ENVIRONMENT

5.1 PHYSICAL

5.1.1 Geology

The Mississippi Gulf Coast is in the physiographic province known as the Gulf Coastal Plain. The geology of the area consists of recent (Quaternary Geologic Period) alluvial deposits overlaying Citronelle (Quaternary Geologic Period) Formation Sands, which in turn overlay Pascagoula Formation (Miocene Geologic Epic, part of the Tertiary Geologic Period) clay. Most of the HII West Bank Facility is constructed on man-made land that was created in the 1960s.

5.1.2 Climate and Weather

Pascagoula Bay has a hot, subtropical climate. It is characterized by long, hot and humid summers, and mild and humid winters. Temperatures between May and October average between 69 – 82° Fahrenheit (F). Winter temperatures between November and April average between 49 - 68° F. The first winter freeze generally occurs in December and the last freeze generally occurs in February. Cold spells usually last only a few days due to the dominance of warm gulf air moving inland from the Gulf of America year round.

Copious rains fall throughout the year as a result of the dominant coastal air masses moving inland and mixing with continental air. Average annual rainfall is 64 inches per year and heavy thunderstorms occur frequently. Less rainfall usually occurs in the fall months and snow only occurs at intervals of decades. Since 1870, 44 tropical storms and hurricanes have passed within 60 miles of Pascagoula, the recent being Hurricane Sally in September 2020, Hurricane Zeta in October 2020, and Tropical Storm Bertha in July 2026.

5.1.3 Surface Water

Surface water resources at the site include Pascagoula Bay, the Mississippi Sound, Gulf of America, and the East Pascagoula River. These natural waterways consist of fresh to brackish waters. These waters are used for commercial marine traffic as well as military activities. The Pascagoula Bay has been closed to shellfish harvesting since 1936, when an outbreak of hepatitis occurred. The Mississippi Department of Environmental Quality (MDEQ) has attributed the closure to a large number of industrial sewage treatment plants and discharges from commercial and industrial facilities in the

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area. The East Pascagoula River is not present in the Mississippi 2024 Section 303 (d) List of Impaired Water Bodies (1).

A water quality assessment was conducted in the project area in May 2013 in accordance with a sampling and analysis plan approved by MDEQ. The sampling and analysis plan and the MDEQ approval letter are provided in Appendix A. Water samples were collected at four locations at 10 feet, 20 feet, and 30 feet depth and were analyzed in the field for pH, Conductivity, Dissolved Oxygen (DO), and Temperature. Refer to Figure 7 for sample locations. The water quality parameters are presented in Table 2. The laboratory report is presented in Appendix B.

HII is planning to conduct an updated sampling and analysis for pH, Conductivity, DO, and Temperature at five locations (four locations in the dredging area of West Bank and one location in the dredging area of East Bank) in August 2026 upon receiving approval from MDEQ. The sampling and analysis plan and the letter submitted to MDEQ is provided in Appendix A-1.

5.1.4 Sediment

Sediment in the project area consists of primarily sand, silt, and clay. A baseline dredge material analysis was conducted in May 2013 in accordance with a sampling and analysis plan approved by MDEQ. The sampling and analysis plan and the MDEQ approval letter are provided in Appendix A. Dredge material samples were collected from four locations and were analyzed for Total Organic Carbon (TOC), Volatile Organic Compounds (VOC), Semi-Volatile Organic Compounds (SVOC), priority pollutant metals, and Polychlorinated Biphenyls (PCBs). VOC, SVOC, and PCB concentrations in all the sediment samples were below quantitation limits (BQL). Some priority pollutant metals were detected in the sediment samples but were below MDEQ target remediation goal (TRG) levels. TOC in the sediment samples ranged from 3,060 mg/kg to 6,790 mg/kg. The sediment quality parameters for TOC and priority pollutant metals are presented in Table 3. The sample location map is provided in Figure 7. The laboratory report is presented in Appendix B.

HII is planning to conduct an updated sampling and analysis of dredge material for TOC, VOC, SVOC, priority pollutant metals, and PCBs at five locations (four locations in the dredging area of West Bank and one location in the dredging area of East Bank) in August 2026 upon receiving approval from MDEQ. The sampling and analysis plan and the letter submitted to MDEQ is provided in Appendix A-1.

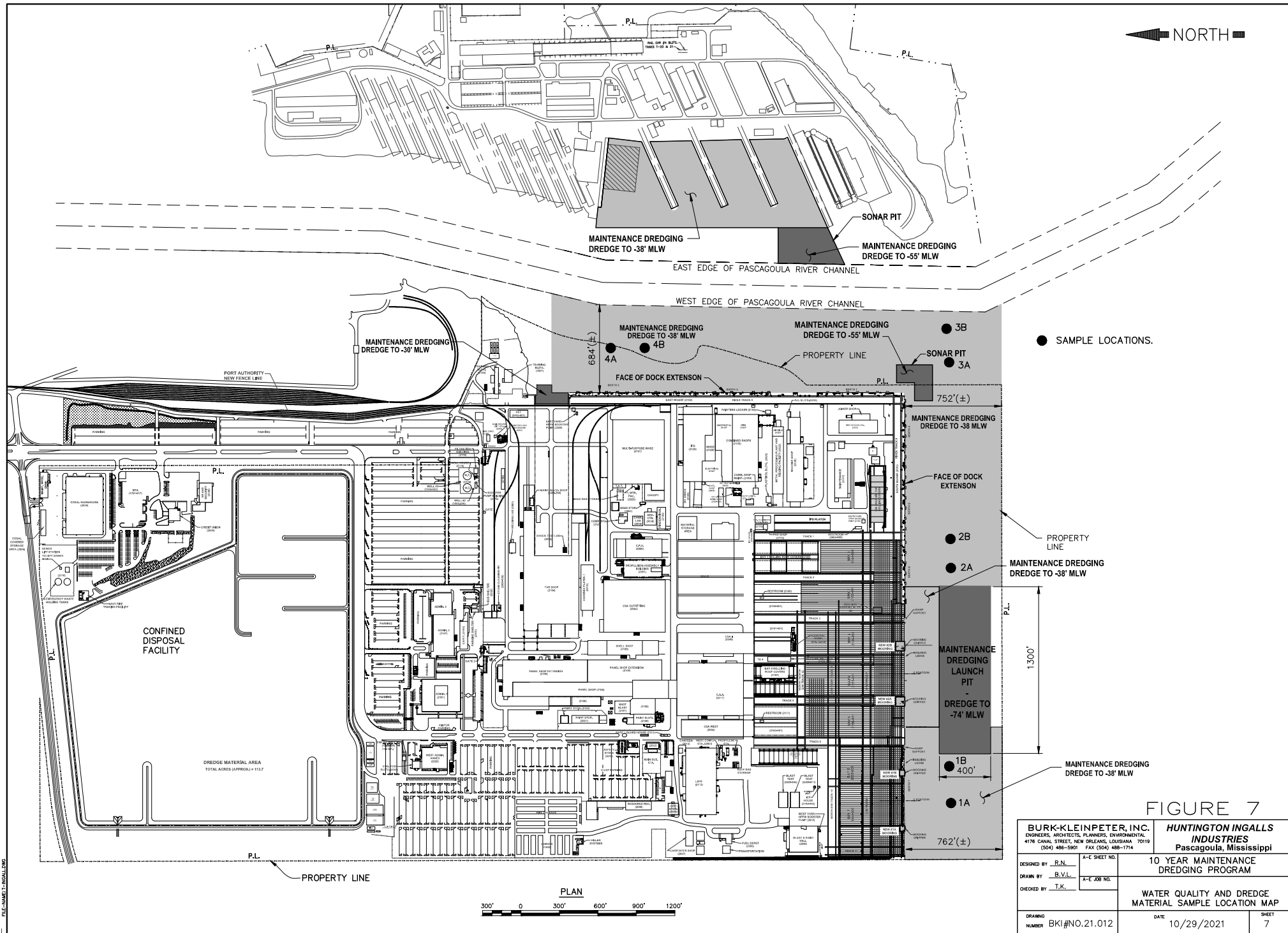


Table 2
Water Quality Parameters

Parameter	Site 1B	Site 2B	Site 3B	Site 4B		
Dissolved Oxygen, mg/l						
@10 ft depth	7.9	7.6	8.0	8.1		
@20 ft depth	7.5	6.9	7.6	7.6		
@30 ft depth	6.8	5.9	6.1	7.0		
Conductivity, mmhos/cm						
@10 ft depth	20.25	23.69	22.82	19.06		
@20 ft depth	22.85	26.62	25.08	22.17		
@30 ft depth	26.86	27.68	33.97	26.86		
pH, standard units						
@10 ft depth	7.89	8.00	8.15	8.11		
@20 ft depth	7.94	7.97	8.03	8.06		
@30 ft depth	7.93	7.94	7.88	7.99		
Temperature, °C						
@10 ft depth	26.4	27.2	26.1	26.5		
@20 ft depth	26.2	27.4	26.1	26.1		
@30 ft depth	26.0	28.9	25.4	25.9		

Table 3
Sediment Analytical Results
TOC and Metals

Parameter	Site 1 A/B	Site 2 A/B	Site 3 A/B	Site 4 A/B	TRG - Soil (Restricted)	TRG - Soil (Unrestricted)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Antimony	<5.45	<5.45	<5.00	<5.28	81.7	31.3
Arsenic	3.25	3.88*	3.10	3.29	3.82	0.426
Beryllium	<0.455	<0.455	0.418	<0.439	1,020	156
Cadmium	<0.455	<0.455	<0.417	<0.439	1,020	39.1
Chromium (Total)	6.97	7.27	7.40	7.36	381	227
Copper	4.82	4.78	4.44	5.45	8,170	3,130
Lead	5.19	5.11	6.23	5.21	1,700	400
Nickel	<3.64	<3.64	3.67	3.59	4,080	1,560
Selenium	<3.18	<3.18	<2.92	<3.07	1,020	391
Silver	<0.909	<0.909	<0.833	<0.877	1,020	391
Thallium	<0.909	<0.909	<0.833	<0.877	143	5.48
Zinc	23.8	21.1	23.3	21.3	61,300	23,500
Mercury	0.0257	0.0212	0.0255	0.0208	61.3	10
TOC	3,060	3,520	6,290	6,790	N/A	N/A

* Arsenic concentration is slightly higher than TRG-Soil (restricted) but the difference is insignificant

**HUNTINGTON INGALLS INDUSTRIES
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5.2 BIOLOGICAL

5.2.1 Fish and Wildlife

Due to the nature of the project site, minimal habitat for terrestrial species is provided. The project is located in an area within the facility boundaries which has been historically used for navigation and shipbuilding operations. Minimal habitat for fish and wildlife exists at the project area.

5.2.2 Threatened and Endangered Species

The Information for Planning and Conservation (IpaC) decision support system identifies Endangered Species Act (ESA) species as potentially affected by activities within the region of the Project. These protected ESA species are presented in Table 4. Critical habitat has been designated in Mississippi for some of these species. A map of these critical habitats is presented in Figure 8.

Table 4. ESA Species in the Project Area			
Common Name	Scientific Name	Federal ESA Designation	Critical Habitat in MS
Monarch Butterfly	<i>Danaus plexippus</i>	Proposed Threatened	No
Gulf Sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened	Yes
Dusky Gopher Frog	<i>Rana sevosa</i>	Endangered	Yes
Alabama Red-bellied Turtle	<i>Pseudemys alabamensis</i>	Endangered	No
Gopher Tortoise	<i>Gopherus polyphemus</i>	Threatened	No
Green Sea Turtle	<i>Chelonia mydas</i>	Threatened	No
Hawksbill Sea Turtle	<i>Eretmochelys imbricata</i>	Endangered	No
Kemp's Ridley Sea Turtle	<i>Lepidochelys kempii</i>	Endangered	No
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered	No
Loggerhead Sea Turtle	<i>Caretta caretta</i>	Threatened	Yes
Eastern Black Rail	<i>Laterallus jamaicensis</i>	Threatened	No
Piping Plover	<i>Charadrius melodus</i>	Threatened	Yes
Rufa Red Knot	<i>Calidris canutus rufa</i>	Threatened	Yes (proposed)
Tricolored Bat	<i>Perimyotis subflavus</i>	Proposed Endangered	No
West Indian Manatee	<i>Trichechus manatus</i>	Threatened	No

Within the Gulf of America, NOAA Fisheries has only designated critical habitat for the Gulf Sturgeon.

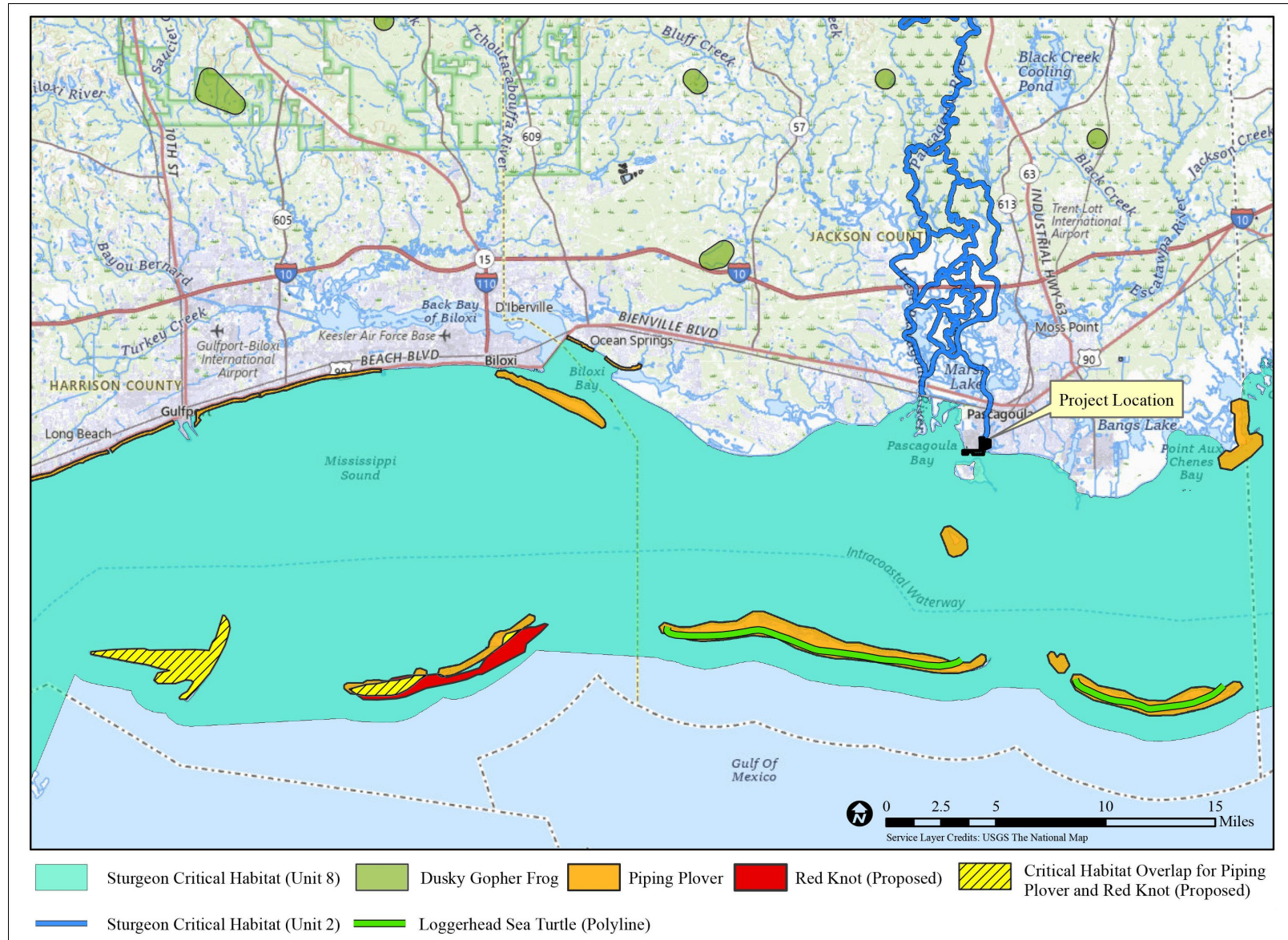


Figure 8. Critical habitat in Mississippi for ESA protected species as it relates to the Project location.

5.2.3 Vegetation

The project site is located on a developed industrial site. A review of the National Wetland Inventory (NWI) Map for the project site indicates no wetlands are located on or immediately adjacent to the project site (2). The NWI map is presented in Appendix C.

5.3 CULTURAL ENVIRONMENT

5.3.1 Historical and Archeological Resources

According to the Mississippi Department of Archives and History (MDAH), there are no recorded historical or archeological resources at or near the project site. Refer to Appendix D for a copy of the letter of no-objection received from the MDAH in September 2021. A new Section 106 Cultural Resource Assessment Application was submitted on 7/15/2026 and is under review by MDAH. Refer to Appendix D1 for the submitted Section 106 Cultural Resource Assessment Application.

5.3.2 Economics

According to U.S. Census Data, Jackson County is one of the most populous counties in Mississippi. The July 2025 estimated population was approximately 147,666. The average per capita income between 2020 and 2024 was \$35,389. Refer to Appendix E for a copy of the Jackson County demographic information.

5.3.3 Recreation

Due to the industrial nature of the project site and vicinity (shipyard, port, and industrial facilities) and the sensitive nature of the work performed at HII (military shipbuilding), the project site and immediate vicinity are not used for recreational purposes.

SECTION 6

PROJECT IMPACTS

6.1 PHYSICAL

6.1.1 Geology

The proposed action will have minor long-term impact on the geology. Approximately, 1.1 million cubic yards of maintenance dredging will be conducted over a period of six years from 2026 to 2032 and will be disposed in an on-site confined disposal facility. The topography will be maintained at a level of -38 to -77 feet in the project area.

6.1.2 Climate and Weather

The proposed activity will have no impact on the climate and weather.

6.1.3 Surface Water

Minor temporary impacts to the surface water resources, such as increase in turbidity, will occur during dredging. These impacts will be minimized by conducting the dredging with minimal disturbance to the water column. Turbidity levels in the water will be monitored in the project area during dredging operations and will be maintained below the permitted levels. A water quality assessment conducted in May 2013 indicated DO levels ranging from 5.9 mg/l to 8.1 mg/l. The dredging operations are not expected to have an adverse effect on the DO levels. A baseline dredge material analysis conducted in May 2013 indicated that VOC, SVOC, and PCB concentrations in the dredge material were BQL. The analysis also indicated that priority pollutant metals were below MDEQ TRG levels. Therefore, dredging is not expected to result in an increase of the pollutant levels in the water. Dredged material will be disposed in an on-site CDF. Dredge material will be allowed to settle in the CDF and the water discharged from the CDF will be monitored for turbidity and will be maintained below permitted levels.

As stated in section 5.1.3 HII is planning to conduct an updated sampling and analysis of water for pH, Conductivity, DO, and Temperature at five locations (four locations in the dredging area of West Bank and one location in the dredging area of East Bank) in August 2026 upon receiving approval from MDEQ. As state in section 5.1.4, HII is planning to conduct an updated sampling and analysis of dredge material for TOC, VOC, SVOC, priority pollutant metals, and PCBs at five locations (four locations in the dredging area of West Bank and one location in the dredging area of East Bank) in August 2026 upon receiving approval from MDEQ. The sampling and analysis plan and the letter submitted to MDEQ is provided in Appendix A-1.

6.2 BIOLOGICAL RESOURCES

6.2.1 Fish and Wildlife

Short term minor impacts to fish and wildlife will occur during dredging phase of the project. Since the project area has been used for ship building operations for a long time, the existence of significant fish and wildlife activity is unlikely. Impacts outside the dredge area are judged to be minimal and are limited to the immediate vicinity of the activities and for the duration of construction of the project.

6.2.2 Threatened and Endangered Species

A Biological Assessment (BA) was conducted to evaluate the impact of the project on threatened and endangered species and their habitat. The BA identified the ESA species potentially affected by activities within the region of the project. These protected ESA species are presented in Table 4. Critical habitat has been designated in Mississippi for some of these species. A map of these critical habitats is presented in Figure 8. The BA determined that the following ESA-listed species are not likely to be affected by the project: i) Dusky Gopher Frog; ii) Alabama Red-bellied Turtle; iii) Gopher Tortoise; iv) Eastern Black Rail; v) Mississippi Sandhill Crane; vi) Piping Plover; vii) Red Knot; and viii) Wood Stork. The BA identified the following ESA-listed species have the potential to be affected by the project: i) Sea Turtles; ii) West Indian Manatee; iii) Marine Mammals; and iv) Gulf Sturgeon. The BA concluded that the potential for impacts on the Sea Turtles, the West Indian Manatee, and the Marine Mammals are low.

The BA identified four (4) primary constituent elements (PCE) for Gulf Sturgeon critical habitat are present in the project area: i) abundant prey items for subadults and adults; ii) water quality; iii) sediment quality; and iv) safe and unobstructed pathways. The BA concluded the following temporary impacts to the PCEs from maintenance dredging.

- *Prey abundance: Gulf sturgeon prey abundance will be temporarily impacted by dredging due to the removal of benthic invertebrates and sediment. However, the benthic communities will recover quickly from the physical disturbances caused by dredging. The recovered post-dredging community composition is expected to be similar to the pre-dredging conditions.*
- *Water quality: Water quality impacts from dredging are expected to be temporary and minimal, with suspended particles settling out within a short time frame without measurable, persistent effects on water quality.*

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- *Sediment quality: Changing the sediment character could impair normal Gulf sturgeon foraging behavior; additionally, it could alter the benthic community, potentially reducing the availability of prey items. After cessation of each maintenance dredging interval, sediment conditions in the dredged areas are expected to be functionally equivalent to the pre-dredging condition. Maintenance dredging in the project area is unlikely to adversely modify the sediment quality for Gulf sturgeon critical habitat.*
- *Safe and unobstructed pathways: Maintenance dredging in the project area will not result in barriers to migrating or foraging sturgeons.*

Therefore, the BA concluded that there will be no significant adverse impact to the Gulf Sturgeon critical habitat from the maintenance dredging in the project area. The BA report is provided in Appendix F.

6.2.3 Coastal Wetlands

There are no wetlands in the project area. Therefore, the project will not result in any impacts to the wetlands. Table 5 provides a summary of the project impacts on the coastal wetlands.

Table 5
Coastal Wetland Impacts

Attribute	Impact
Biological Integrity and Productivity	No Impact
Natural Supply of Sediments and Nutrients	No Impact
Natural Temperature Regimes	No Impact
Salinity Regimes	No Impact
Sediment Transport Process	No Impact
Water Flow and Circulation	No Impact
Long Term Biological Productivity	No Impact

6.3 CULTURAL RESOURCES

6.3.1 Historical and Archeological Resources

According to the MDAH, there are no recorded historical or archeological resources at or near the project site. Therefore, the project will not result in any adverse impacts to historical and archeological resources. Refer to Appendix D for a copy of the letter from the MDAH. A new Section 106 Cultural Resource Assessment Application was submitted on 7/15/2026. In response to this submission MDAH (via letter dated August 13, 2026) requested that the consultation be conducted by the USACE. Refer to Appendix D1 for the submitted Section 106 Cultural Resource Assessment Application and MDAH letter dated August 13, 2026.

6.3.2 Recreation

Due to the industrial nature of the project site and vicinity (shipyard, port, and industrial facilities) and the sensitive nature of the work performed at HII (military shipbuilding), the project site and immediate vicinity are not used for recreational purposes. Therefore, the project will not result in any adverse impact to recreation.

6.4 ECONOMICS

The long term economic benefit resulting from the project will be the maintenance, and possible expansion, of the current workforce. The proposed project will enable HII to be more competitive in a wider range of ship construction business areas and expand its current level of work.

6.5 CUMULATIVE IMPACTS

Cumulative impacts are those impacts on the environment that result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions. This section analyzes the proposed actions as well as any connected cumulative and similar existing and potential actions occurring in the area surrounding the site. The potential adverse direct environmental and socioeconomic impacts associated with the proposed action are insignificant. In general, the proposed maintenance dredging operations would have no significant adverse secondary or cumulative effects.

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The maintenance dredging had been conducted at the HII Pascagoula facility for several decades and the proposed action is continuation of these activities for another ten years. The maintenance dredging operations at the HII Pascagoula facility will not change the current activities in the vicinity. Recreational, commercial, and industrial activities in the vicinity will be unaffected by the proposed action. Therefore, no significant cumulative impacts are expected from the proposed action.

Past or present actions in the immediate vicinity of the project area include the following (source: USACE EIS 2019 for the Pascagoula Harbor):

- Chevron Pascagoula Base Oil Facility
- Gulf LNG Clean Energy Project
- Mississippi Phosphates
- Maintenance Dredging
- Beneficial Use Sites
- Pascagoula Bayou Casotte Terminals
- Pascagoula Harbor Navigation Channel
- Bayou Casotte Navigation Channel and Cyclical Maintenance Dredging

The Project's contribution to the cumulative impacts already present in the immediate vicinity, including the HII facility, would be negligible.

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SECTION 7

CONCLUSIONS

This EA finds that the proposed action will not result in significant adverse environmental impacts. The positive economic impacts to Jackson County and the State of Mississippi and the minimal short term environmental impacts support the proposed action. This project will enable HII to produce a wider variety of military vessels while positively affecting the economy and employment rate of the State of Mississippi.

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SECTION 8

REFERENCES

1. Mississippi 2024 Section 303 (D) List of Impaired Water Bodies, April 2024, Prepared by Mississippi Department of Environmental Quality, Surface Water Division of the Office of Pollution Control
2. <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>

**HUNTINGTON INGALLS INDUSTRIES
PASCAGOULA FACILITY
10-YEAR MAINTENANCE DREDGING
(PERMIT MODIFICATION 2026)
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SECTION 9

PREPARERS

This EA was prepared by Burk-Kleinpeter, Inc. (BKI) on behalf of HII for the 10-year maintenance dredging permit modification 2026. This document was prepared by Reddy Nandipati, Environmental Engineer of BKI.

APPENDIX A

Sampling and Analysis Plan & MDEQ Approval Letter



STATE OF MISSISSIPPI

PHIL BRYANT
GOVERNOR

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

TRUDY D. FISHER, EXECUTIVE DIRECTOR

April 30, 2013

Mr. Reddy Nandipati, P.E.
Burk-Kleinpeter, Inc.
Post Office Box 19087
New Orleans, LA 70179-0087

Re: Huntington Ingalls Industries
Sampling Plan Review
10-year Maintenance Dredging
Jackson County

Dear Mr. Nandipati:

The Mississippi Department of Environmental Quality has received your request for comments via letter dated March 18, 2013, in regards to the sampling plan for baseline dredge material analysis associated with the Huntington Ingalls Industries facility located in Pascagoula, Mississippi. This pre-application request for comments was made in reference to a 10-year maintenance dredging permit application and indicates that dredged material would be disposed in an existing upland confined disposal facility located on the site.

The Department has determined that the sampling plan and dredge material analysis should be sufficient for disposal of dredged material in an existing upland confined disposal facility. However, should the material be considered for beneficial use, additional analyses would be required. The applicant should contact George Ramseur (228-523-4120), Program Coordinator for the Beneficial Use Program at the Mississippi Department of Marine Resources for further information.

If you have any questions further questions in preparing the permit application, please feel free to contact me at (601) 961-5322.



Sincerely,

Carrie Barefoot, P.E.
Environmental Permits Division

cc: George Ramseur, Mississippi Department of Marine Resources

1670 WQC20090001

OFFICE OF POLLUTION CONTROL

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TELEPHONE (504) 486-5901 FAX (504) 488-1714
P. O. BOX 19087, NEW ORLEANS, LA 70179-0087
WWW.BKIUSA.COM



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March 18, 2013

Mississippi Department of Environmental Quality
Office of Pollution Control
Environmental Permits Division – Water Quality Certification
P.O. Box 2261
Jackson, Mississippi 39225-2261

RE: Huntington Ingalls Industries, Pascagoula – 10 Year Maintenance Dredging
USACE/MDMR Permit Application (BKI NO.12.047-0400)

Dear Sir/Madam:

Burk-Kleinpeter, Inc. (BKI) is currently working on a "Ten-Year Maintenance Dredging USACE/MDMR Permit" application for Huntington Ingalls Industries (HII), Pascagoula, Mississippi. HII (formerly Northrop Grumman) is currently permitted under Permit # MS04-02628-L, which expires in November 2014. HII will dispose the dredge material in an existing upland confined disposal facility located on the site.

In order to obtain water quality certification for the permit, HII is proposing to conduct a baseline dredge material analysis. HII is proposing to collect four composite dredge samples at the locations indicated on Figure 1 and Figure 2. Four pairs of samples will be collected from the following locations: 1A and 1B; 2A and 2B; 3A and 3B; and 4A and 4B. The top two-foot layer of dredge material sample will be collected at each location. Each pair of dredge samples will be composited and the composite samples will be analyzed for total organic carbon (TOC), volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), priority pollutant metals, and polychlorinated biphenyls (PCBs).

Water samples will be collected at the surface, 10 feet, 20 feet, and 30 feet depth from these locations and will be analyzed in the field for the following parameters: pH; temperature; conductivity; and dissolved oxygen.





OVER 100 YEARS OF SERVICE

A summary of previous dredge material and water quality analysis conducted in 1998 and 2005 are provided in Appendix I.

BKI requests MDEQ comments on the proposed sampling and analysis plan. Please feel free to contact me at (504)483-6232, if you have any questions or need additional information. We highly appreciate your guidance and cooperation on this issue.

Yours Truly,

Burk-Kleinpeter, Inc.

A handwritten signature in blue ink, appearing to read "NMD Reddy".

Reddy Nandipati, P.E.
Associate

Cc: Mississippi Department of Marine Resources
U.S. Army Corps of Engineers





LEGEND:



MAINTENANCE DREDGING AREA



PROPOSED SAMPLE LOCATIONS.



1998 SAMPLE LOCATIONS

FIGURE 1

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119
(504) 488-5901 FAX (504) 488-1714

**HUNTINGTON INGALLS
INDUSTRIES**
Pascagoula, Mississippi

DESIGNED BY R.N.

A-E SHEET NO.

DRAWN BY B.V.L.

A-E JOB NO.

CHECKED BY S.I.S.

NO12.047

**10 YEAR MAINTENANCE
DREDGING PROGRAM**

**DREDGE MATERIAL
SAMPLING PLAN**

DRAWING
NUMBER **BKI#NO.12.047**

DATE **2/25/2013**

SHEET
1

APPENDIX B

Laboratory Report



EASI, LLC

Analytical Testing and Field Services

EASI Job Number: 40362

Laboratory Report prepared for:

BURK KLEINPETER

P. O. Box 19087

New Orleans, LA 70179

Attention: Reddy Nandipati, P.E.

RE: Ingalls Project

Report Narrative

On May 28, 2013 eight (8) sediment samples (2 samples from each of 4 sites) were collected and received for analytical characterization. Both sediment samples from each site (labeled A & B) were composited as per client request. In addition to the sediment samples, water samples were collected at each site at various depths. Water quality parameters at each site were field analyzed immediately upon collection and results are shown on the following pages. Composited sediment sample results are also shown on the following pages. The chain of custody and quality assurance / quality control data are attached to the report. If you have any questions regarding this report, please contact Mr. Mike Antoine at your convenience.

APPROVED BY:

DATE:

7/9/2013

Brigid M. Guerra
Project Manager

Total Number of Report Pages: 26

The results contained within this report relate only to the analyses conducted and to the samples received by the laboratory. The results also conform to current requirements of LAC 33:1, AIHA and NELAC unless noted. This report shall not be reproduced, except in full, without written approval of EASI, LLC. EASI, LLC is accredited by the American Industrial Hygiene Association, **AIHA Lab number 102300**, and the Louisiana Department of Environmental Quality, **LELAP Certificate number 02036**.

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Water Quality Parameters

		Water Depth		
Site 1B	Units	10 feet	20 feet	30 feet
Dissolved Oxygen	mg/l	7.9	7.5	6.8
Conductivity	mmhos/cm	20.25	22.85	26.86
pH	std.units	7.89	7.94	7.93
Temperature	°C	26.4	26.2	26.0
Site 2B	Units	10 feet	20 feet	30 feet
Dissolved Oxygen	mg/l	7.6	6.9	5.9
Conductivity	mmhos/cm	23.69	26.62	27.68
pH	std.units	8.00	7.97	7.94
Temperature	°C	27.2	27.4	28.9
Site 3B	Units	10 feet	20 feet	30 feet
Dissolved Oxygen	mg/l	8.0	7.6	6.1
Conductivity	mmhos/cm	22.82	25.08	33.97
pH	std.units	8.15	8.03	7.88
Temperature	°C	26.1	26.1	25.4
Site 4B	Units	10 feet	20 feet	30 feet
Dissolved Oxygen	mg/l	8.1	7.6	7.0
Conductivity	mmhos/cm	19.06	22.17	26.86
pH	std.units	8.11	8.06	7.99
Temperature	°C	26.5	26.1	25.9

Laboratory Report

Sample Identification: Site 1A/B
Sample Date: May 28, 2013
Sample Time: 1000/1030
Laboratory Number: 4036201
Matrix: Solid

Volatile Compound Parameters	Analysis Result	Analysis Units	PQL	Comments
Acrolein	BQL	mg/kg	50.0	
Acrylonitrile	BQL	mg/kg	50.0	
Benzene	BQL	mg/kg	10.0	
Bromodichloromethane	BQL	mg/kg	10.0	
Bromoform	BQL	mg/kg	10.0	
Carbon tetrachloride	BQL	mg/kg	10.0	
Chlorobenzene	BQL	mg/kg	50.0	
Chloroethane	BQL	mg/kg	10.0	
Chloroform	BQL	mg/kg	10.0	
2-Chloroethyl vinyl ether	BQL	mg/kg	10.0	
Dibromochloromethane	BQL	mg/kg	10.0	
1,1-Dichloroethane	BQL	mg/kg	10.0	
1,2-Dichloroethane	BQL	mg/kg	10.0	
1,1-Dichloroethylene	BQL	mg/kg	10.0	
1,2-Dichloropropane	BQL	mg/kg	10.0	
cis-1,3-Dichloropropene	BQL	mg/kg	10.0	
Ethyl benzene	BQL	mg/kg	10.0	
Methyl bromide (bromomethane)	BQL	mg/kg	50.0	
Methyl chloride (chloromethane)	BQL	mg/kg	50.0	
Methylene Chloride	BQL	mg/kg	20.0	
1,1,2,2-Tetrachloroethane	BQL	mg/kg	10.0	
Tetrachloroethylene	BQL	mg/kg	10.0	
Toluene	BQL	mg/kg	10.0	
1,2-trans-Dichloroethylene	BQL	mg/kg	10.0	
1,1,1-Trichloroethane	BQL	mg/kg	10.0	
1,1,2-Trichloroethane	BQL	mg/kg	10.0	
Trichloroethylene	BQL	mg/kg	10.0	
Vinyl Chloride	BQL	mg/kg	10.0	
Surrogates	% Rec	Analysis Date/Time/Analyst		
1,2-Dichloroethane-d4	152	060713/1703/CM		
Toluene, d8	126			
4-Bromofluorobenzene	134			

Laboratory Report

Sample Identification: Site 2A/B
Sample Date: May 28, 2013
Sample Time: 1130/1500
Laboratory Number: 4036202
Matrix: Solid

Volatile Compound Parameters	Analysis Result	Analysis Units	PQL	Comments
Acrolein	BQL	mg/kg	50.0	
Acrylonitrile	BQL	mg/kg	50.0	
Benzene	BQL	mg/kg	10.0	
Bromodichloromethane	BQL	mg/kg	10.0	
Bromoform	BQL	mg/kg	10.0	
Carbon tetrachloride	BQL	mg/kg	10.0	
Chlorobenzene	BQL	mg/kg	50.0	
Chloroethane	BQL	mg/kg	10.0	
Chloroform	BQL	mg/kg	10.0	
2-Chloroethyl vinyl ether	BQL	mg/kg	10.0	
Dibromochloromethane	BQL	mg/kg	10.0	
1,1-Dichloroethane	BQL	mg/kg	10.0	
1,2-Dichloroethane	BQL	mg/kg	10.0	
1,1-Dichloroethylene	BQL	mg/kg	10.0	
1,2-Dichloropropane	BQL	mg/kg	10.0	
cis-1,3-Dichloropropene	BQL	mg/kg	10.0	
Ethyl benzene	BQL	mg/kg	10.0	
Methyl bromide (bromomethane)	BQL	mg/kg	50.0	
Methyl chloride (chloromethane)	BQL	mg/kg	50.0	
Methylene Chloride	BQL	mg/kg	20.0	
1,1,2,2-Tetrachloroethane	BQL	mg/kg	10.0	
Tetrachloroethylene	BQL	mg/kg	10.0	
Toluene	BQL	mg/kg	10.0	
1,2-trans-Dichloroethylene	BQL	mg/kg	10.0	
1,1,1-Trichloroethane	BQL	mg/kg	10.0	
1,1,2-Trichloroethane	BQL	mg/kg	10.0	
Trichloroethylene	BQL	mg/kg	10.0	
Vinyl Chloride	BQL	mg/kg	10.0	
Surrogates	% Rec	Analysis Date/Time/Analyst		
1,2-Dichloroethane-d4	152	060713/1737/CM		
Toluene, d8	116			
4-Bromofluorobenzene	136			

Laboratory Report

Sample Identification: Site 3A/B
Sample Date: May 28, 2013
Sample Time: 1145/1200
Laboratory Number: 4036203
Matrix: Solid

Volatile Compound Parameters	Analysis Result	Analysis Units	PQL	Comments
Acrolein	BQL	mg/kg	50.0	
Acrylonitrile	BQL	mg/kg	50.0	
Benzene	BQL	mg/kg	10.0	
Bromodichloromethane	BQL	mg/kg	10.0	
Bromoform	BQL	mg/kg	10.0	
Carbon tetrachloride	BQL	mg/kg	10.0	
Chlorobenzene	BQL	mg/kg	50.0	
Chloroethane	BQL	mg/kg	10.0	
Chloroform	BQL	mg/kg	10.0	
2-Chloroethyl vinyl ether	BQL	mg/kg	10.0	
Dibromochloromethane	BQL	mg/kg	10.0	
1,1-Dichloroethane	BQL	mg/kg	10.0	
1,2-Dichloroethane	BQL	mg/kg	10.0	
1,1-Dichloroethylene	BQL	mg/kg	10.0	
1,2-Dichloropropane	BQL	mg/kg	10.0	
cis-1,3-Dichloropropene	BQL	mg/kg	10.0	
Ethyl benzene	BQL	mg/kg	10.0	
Methyl bromide (bromomethane)	BQL	mg/kg	50.0	
Methyl chloride (chloromethane)	BQL	mg/kg	50.0	
Methylene Chloride	BQL	mg/kg	20.0	
1,1,2,2-Tetrachloroethane	BQL	mg/kg	10.0	
Tetrachloroethylene	BQL	mg/kg	10.0	
Toluene	BQL	mg/kg	10.0	
1,2-trans-Dichloroethylene	BQL	mg/kg	10.0	
1,1,1-Trichloroethane	BQL	mg/kg	10.0	
1,1,2-Trichloroethane	BQL	mg/kg	10.0	
Trichloroethylene	BQL	mg/kg	10.0	
Vinyl Chloride	BQL	mg/kg	10.0	
Surrogates	% Rec	Analysis Date/Time/Analyst		
1,2-Dichloroethane-d4	152	060713/1810/CM		
Toluene, d8	133			
4-Bromofluorobenzene	145			

Laboratory Report

Sample Identification: Site 4A/B
Sample Date: May 28, 2013
Sample Time: 1230/1315
Laboratory Number: 4036204
Matrix: Solid

Volatile Compound Parameters	Analysis Result	Analysis Units	PQL	Comments
Acrolein	BQL	mg/kg	50.0	
Acrylonitrile	BQL	mg/kg	50.0	
Benzene	BQL	mg/kg	10.0	
Bromodichloromethane	BQL	mg/kg	10.0	
Bromoform	BQL	mg/kg	10.0	
Carbon tetrachloride	BQL	mg/kg	10.0	
Chlorobenzene	BQL	mg/kg	50.0	
Chloroethane	BQL	mg/kg	10.0	
Chloroform	BQL	mg/kg	10.0	
2-Chloroethyl vinyl ether	BQL	mg/kg	10.0	
Dibromochloromethane	BQL	mg/kg	10.0	
1,1-Dichloroethane	BQL	mg/kg	10.0	
1,2-Dichloroethane	BQL	mg/kg	10.0	
1,1-Dichloroethylene	BQL	mg/kg	10.0	
1,2-Dichloropropane	BQL	mg/kg	10.0	
cis-1,3-Dichloropropene	BQL	mg/kg	10.0	
Ethyl benzene	BQL	mg/kg	10.0	
Methyl bromide (bromomethane)	BQL	mg/kg	50.0	
Methyl chloride (chloromethane)	BQL	mg/kg	50.0	
Methylene Chloride	BQL	mg/kg	20.0	
1,1,2,2-Tetrachloroethane	BQL	mg/kg	10.0	
Tetrachloroethylene	BQL	mg/kg	10.0	
Toluene	BQL	mg/kg	10.0	
1,2-trans-Dichloroethylene	BQL	mg/kg	10.0	
1,1,1-Trichloroethane	BQL	mg/kg	10.0	
1,1,2-Trichloroethane	BQL	mg/kg	10.0	
Trichloroethylene	BQL	mg/kg	10.0	
Vinyl Chloride	BQL	mg/kg	10.0	
Surrogates	% Rec	Analysis Date/Time/Analyst		
1,2-Dichloroethane-d4	145	060713/1843/CM		
Toluene, d8	168			
4-Bromofluorobenzene	149			

Laboratory Report

Sample Identification: Site 1A/B
Sample Date: May 28, 2013
Sample Time: 1000/1030
Laboratory Number: 4036201
Matrix: Solid

Semivolatile Parameters	Analysis Result	Analysis Units	PQL	Comments
Benzoic Acid	BQL	mg/kg	50.0	
2-Chlorophenol	BQL	mg/kg	10.0	
3-Chlorophenol	BQL	mg/kg	10.0	
4-Chlorophenol	BQL	mg/kg	10.0	
4-Chloro-3-methylphenol	BQL	mg/kg	10.0	
2,3-Dichlorophenol	BQL	mg/kg	10.0	
2,4-Dichlorophenol	BQL	mg/kg	10.0	
2,5-Dichlorophenol	BQL	mg/kg	10.0	
2,6-Dichlorophenol	BQL	mg/kg	10.0	
3,4-Dichlorophenol	BQL	mg/kg	10.0	
2,4-Dimethylphenol	BQL	mg/kg	10.0	
4,6-Dinitro-2-methylphenol	BQL	mg/kg	50.0	
2,4-Dinitrophenol	BQL	mg/kg	50.0	
2-Nitrophenol	BQL	mg/kg	20.0	
4-Nitrophenol	BQL	mg/kg	50.0	
Pentachlorophenol	BQL	mg/kg	50.0	
Phenol	BQL	mg/kg	10.0	
2,4,6-Trichlorophenol	BQL	mg/kg	10.0	
Acenaphthene	BQL	mg/kg	10.0	
Acenaphthylene	BQL	mg/kg	10.0	
Anthracene	BQL	mg/kg	10.0	
Benidine	BQL	mg/kg	50.0	
Benzo(a)anthracene	BQL	mg/kg	10.0	
Benzo(b)fluoranthene	BQL	mg/kg	10.0	
Benzo(k)fluoranthene	BQL	mg/kg	10.0	
Benzo(a)pyrene	BQL	mg/kg	10.0	
Benzo(ghi)perylene	BQL	mg/kg	20.0	
bis(2-Chloroethoxy)methane	BQL	mg/kg	10.0	
Benzyl butyl phthalate	BQL	mg/kg	10.0	
Bis(2-chloroethyl)ether	BQL	mg/kg	10.0	
Bis(2-chloroisopropyl)ether	BQL	mg/kg	10.0	
Bis(2-ethylhexyl)phthalate	BQL	mg/kg	10.0	
4-Bromophenyl phenyl ether	BQL	mg/kg	10.0	
2-Chloronaphthalene	BQL	mg/kg	10.0	
4-Chlorophenyl phenyl ether	BQL	mg/kg	10.0	

Laboratory Report

Sample Identification: Site 1A/B
Sample Date: May 28, 2013
Sample Time: 1000/1030
Laboratory Number: 4036201
Matrix: Solid

Semivolatile Parameters	Analysis Result	Analysis Units	PQL	Comments
Chrysene	BQL	mg/kg	10.0	
1,2-Dichlorobenzene	BQL	mg/kg	10.0	
1,3-Dichlorobenzene	BQL	mg/kg	10.0	
1,4-Dichlorobenzene	BQL	mg/kg	10.0	
Dibenzo(a,h)anthracene	BQL	mg/kg	20.0	
Di-n-butylphthalate	BQL	mg/kg	10.0	
3,3-Dichlorobenzidine	BQL	mg/kg	50.0	
Diethyl phthalate	BQL	mg/kg	10.0	
Dimethyl phthalate	BQL	mg/kg	10.0	
2,4-Dinitrotoluene	BQL	mg/kg	10.0	
2,6-Dinitrotoluene	BQL	mg/kg	10.0	
Di-n-octylphthalate	BQL	mg/kg	10.0	
1,2-Diphenylhydrazine	BQL	mg/kg	20.0	
Fluoranthene	BQL	mg/kg	10.0	
Fluorene	BQL	mg/kg	10.0	
Hexachlorobenzene	BQL	mg/kg	10.0	
Hexachlorobutadiene	BQL	mg/kg	10.0	
Hexachlorocyclopentadiene	BQL	mg/kg	10.0	
Hexachloroethane	BQL	mg/kg	10.0	
Indeno(1,2,3-cd)pyrene	BQL	mg/kg	10.0	
Isophorone	BQL	mg/kg	10.0	
Naphthalene	BQL	mg/kg	10.0	
Nitrobenzene	BQL	mg/kg	10.0	
N-nitrosodimethylamine	BQL	mg/kg	50.0	
N-nitrosodiphenylamine	BQL	mg/kg	20.0	
N-nitrosodi-n-propylamine	BQL	mg/kg	20.0	
Phenanthrene	BQL	mg/kg	10.0	
Pyrene	BQL	mg/kg	10.0	
1,2,4-Trichlorobenzene	BQL	mg/kg	10.0	

Surrogates	% Rec	Date Prepared	Analysis Date/Time/Analyst
2-Fluorophenol	58	053013	053013/1915/MA
Phenol-d5	52		
Nitrobenzene-d5	64		
2-Fluorobiphenyl	96		
4-Terphenyl-d14	91		

Laboratory Report

Sample Identification: Site 2A/B
Sample Date: May 28, 2013
Sample Time: 1130/1500
Laboratory Number: 4036202
Matrix: Solid

Semivolatile Parameters	Analysis Result	Analysis Units	PQL	Comments
Benzoic Acid	BQL	mg/kg	50.0	
2-Chlorophenol	BQL	mg/kg	10.0	
3-Chlorophenol	BQL	mg/kg	10.0	
4-Chlorophenol	BQL	mg/kg	10.0	
4-Chloro-3-methylphenol	BQL	mg/kg	10.0	
2,3-Dichlorophenol	BQL	mg/kg	10.0	
2,4-Dichlorophenol	BQL	mg/kg	10.0	
2,5-Dichlorophenol	BQL	mg/kg	10.0	
2,6-Dichlorophenol	BQL	mg/kg	10.0	
3,4-Dichlorophenol	BQL	mg/kg	10.0	
2,4-Dimethylphenol	BQL	mg/kg	10.0	
4,6-Dinitro-2-methylphenol	BQL	mg/kg	50.0	
2,4-Dinitrophenol	BQL	mg/kg	50.0	
2-Nitrophenol	BQL	mg/kg	20.0	
4-Nitrophenol	BQL	mg/kg	50.0	
Pentachlorophenol	BQL	mg/kg	50.0	
Phenol	BQL	mg/kg	10.0	
2,4,6-Trichlorophenol	BQL	mg/kg	10.0	
Acenaphthene	BQL	mg/kg	10.0	
Acenaphthylene	BQL	mg/kg	10.0	
Anthracene	BQL	mg/kg	10.0	
Benidine	BQL	mg/kg	50.0	
Benzo(a)anthracene	BQL	mg/kg	10.0	
Benzo(b)fluoranthene	BQL	mg/kg	10.0	
Benzo(k)fluoranthene	BQL	mg/kg	10.0	
Benzo(a)pyrene	BQL	mg/kg	10.0	
Benzo(ghi)perylene	BQL	mg/kg	20.0	
bis(2-Chloroethoxy)methane	BQL	mg/kg	10.0	
Benzyl butyl phthalate	BQL	mg/kg	10.0	
Bis(2-chloroethyl)ether	BQL	mg/kg	10.0	
Bis(2-chloroisopropyl)ether	BQL	mg/kg	10.0	
Bis(2-ethylhexyl)phthalate	BQL	mg/kg	10.0	
4-Bromophenyl phenyl ether	BQL	mg/kg	10.0	
2-Chloronaphthalene	BQL	mg/kg	10.0	
4-Chlorophenyl phenyl ether	BQL	mg/kg	10.0	

Laboratory Report

Sample Identification: Site 2A/B
Sample Date: May 28, 2013
Sample Time: 1130/1500
Laboratory Number: 4036202
Matrix: Solid

Semivolatile Parameters	Analysis Result	Analysis Units	PQL	Comments
Chrysene	BQL	mg/kg	10.0	
1,2-Dichlorobenzene	BQL	mg/kg	10.0	
1,3-Dichlorobenzene	BQL	mg/kg	10.0	
1,4-Dichlorobenzene	BQL	mg/kg	10.0	
Dibenzo(a,h)anthracene	BQL	mg/kg	20.0	
Di-n-butylphthalate	BQL	mg/kg	10.0	
3,3-Dichlorobenzidine	BQL	mg/kg	50.0	
Diethyl phthalate	BQL	mg/kg	10.0	
Dimethyl phthalate	BQL	mg/kg	10.0	
2,4-Dinitrotoluene	BQL	mg/kg	10.0	
2,6-Dinitrotoluene	BQL	mg/kg	10.0	
Di-n-octylphthalate	BQL	mg/kg	10.0	
1,2-Diphenylhydrazine	BQL	mg/kg	20.0	
Fluoranthene	BQL	mg/kg	10.0	
Fluorene	BQL	mg/kg	10.0	
Hexachlorobenzene	BQL	mg/kg	10.0	
Hexachlorobutadiene	BQL	mg/kg	10.0	
Hexachlorocyclopentadiene	BQL	mg/kg	10.0	
Hexachloroethane	BQL	mg/kg	10.0	
Indeno(1,2,3-cd)pyrene	BQL	mg/kg	10.0	
Isophorone	BQL	mg/kg	10.0	
Naphthalene	BQL	mg/kg	10.0	
Nitrobenzene	BQL	mg/kg	10.0	
N-nitrosodimethylamine	BQL	mg/kg	50.0	
N-nitrosodiphenylamine	BQL	mg/kg	20.0	
N-nitrosodi-n-propylamine	BQL	mg/kg	20.0	
Phenanthrene	BQL	mg/kg	10.0	
Pyrene	BQL	mg/kg	10.0	
1,2,4-Trichlorobenzene	BQL	mg/kg	10.0	

Surrogates	% Rec	Date Prepared	Analysis Date/Time/Analyst
2-Fluorophenol	53	053013	053013/2002/MA
Phenol-d5	50		
Nitrobenzene-d5	75		
2-Fluorobiphenyl	90		
4-Terphenyl-d14	90		

Laboratory Report

Sample Identification: Site 3A/B
Sample Date: May 28, 2013
Sample Time: 1145/1200
Laboratory Number: 4036203
Matrix: Solid

Semivolatile Parameters	Analysis Result	Analysis Units	PQL	Comments
Benzoic Acid	BQL	mg/kg	50.0	
2-Chlorophenol	BQL	mg/kg	10.0	
3-Chlorophenol	BQL	mg/kg	10.0	
4-Chlorophenol	BQL	mg/kg	10.0	
4-Chloro-3-methylphenol	BQL	mg/kg	10.0	
2,3-Dichlorophenol	BQL	mg/kg	10.0	
2,4-Dichlorophenol	BQL	mg/kg	10.0	
2,5-Dichlorophenol	BQL	mg/kg	10.0	
2,6-Dichlorophenol	BQL	mg/kg	10.0	
3,4-Dichlorophenol	BQL	mg/kg	10.0	
2,4-Dimethylphenol	BQL	mg/kg	10.0	
4,6-Dinitro-2-methylphenol	BQL	mg/kg	50.0	
2,4-Dinitrophenol	BQL	mg/kg	50.0	
2-Nitrophenol	BQL	mg/kg	20.0	
4-Nitrophenol	BQL	mg/kg	50.0	
Pentachlorophenol	BQL	mg/kg	50.0	
Phenol	BQL	mg/kg	10.0	
2,4,6-Trichlorophenol	BQL	mg/kg	10.0	
Acenaphthene	BQL	mg/kg	10.0	
Acenaphthylene	BQL	mg/kg	10.0	
Anthracene	BQL	mg/kg	10.0	
Benidine	BQL	mg/kg	50.0	
Benzo(a)anthracene	BQL	mg/kg	10.0	
Benzo(b)fluoranthene	BQL	mg/kg	10.0	
Benzo(k)fluoranthene	BQL	mg/kg	10.0	
Benzo(a)pyrene	BQL	mg/kg	10.0	
Benzo(ghi)perylene	BQL	mg/kg	20.0	
bis(2-Chloroethoxy)methane	BQL	mg/kg	10.0	
Benzyl butyl phthalate	BQL	mg/kg	10.0	
Bis(2-chloroethyl)ether	BQL	mg/kg	10.0	
Bis(2-chloroisopropyl)ether	BQL	mg/kg	10.0	
Bis(2-ethylhexyl)phthalate	BQL	mg/kg	10.0	
4-Bromophenyl phenyl ether	BQL	mg/kg	10.0	
2-Chloronaphthalene	BQL	mg/kg	10.0	
4-Chlorophenyl phenyl ether	BQL	mg/kg	10.0	

Laboratory Report

Sample Identification: Site 3A/B
Sample Date: May 28, 2013
Sample Time: 1145/1200
Laboratory Number: 4036203
Matrix: Solid

Semivolatile Parameters	Analysis Result	Analysis Units	PQL	Comments
Chrysene	BQL	mg/kg	10.0	
1,2-Dichlorobenzene	BQL	mg/kg	10.0	
1,3-Dichlorobenzene	BQL	mg/kg	10.0	
1,4-Dichlorobenzene	BQL	mg/kg	10.0	
Dibenzo(a,h)anthracene	BQL	mg/kg	20.0	
Di-n-butylphthalate	BQL	mg/kg	10.0	
3,3-Dichlorobenzidine	BQL	mg/kg	50.0	
Diethyl phthalate	BQL	mg/kg	10.0	
Dimethyl phthalate	BQL	mg/kg	10.0	
2,4-Dinitrotoluene	BQL	mg/kg	10.0	
2,6-Dinitrotoluene	BQL	mg/kg	10.0	
Di-n-octylphthalate	BQL	mg/kg	10.0	
1,2-Diphenylhydrazine	BQL	mg/kg	20.0	
Fluoranthene	BQL	mg/kg	10.0	
Fluorene	BQL	mg/kg	10.0	
Hexachlorobenzene	BQL	mg/kg	10.0	
Hexachlorobutadiene	BQL	mg/kg	10.0	
Hexachlorocyclopentadiene	BQL	mg/kg	10.0	
Hexachloroethane	BQL	mg/kg	10.0	
Indeno(1,2,3-cd)pyrene	BQL	mg/kg	10.0	
Isophorone	BQL	mg/kg	10.0	
Naphthalene	BQL	mg/kg	10.0	
Nitrobenzene	BQL	mg/kg	10.0	
N-nitrosodimethylamine	BQL	mg/kg	50.0	
N-nitrosodiphenylamine	BQL	mg/kg	20.0	
N-nitrosodi-n-propylamine	BQL	mg/kg	20.0	
Phenanthrene	BQL	mg/kg	10.0	
Pyrene	BQL	mg/kg	10.0	
1,2,4-Trichlorobenzene	BQL	mg/kg	10.0	

Surrogates	% Rec	Date Prepared	Analysis Date/Time/Analyst
2-Fluorophenol	60	053013	053013/2048/MA
Phenol-d5	56		
Nitrobenzene-d5	71		
2-Fluorobiphenyl	102		
4-Terphenyl-d14	96		

Laboratory Report

Sample Identification: Site 4A/B
Sample Date: May 28, 2013
Sample Time: 1230/1315
Laboratory Number: 4036204
Matrix: Solid

Semivolatile Parameters	Analysis Result	Analysis Units	PQL	Comments
Benzoic Acid	BQL	mg/kg	50.0	
2-Chlorophenol	BQL	mg/kg	10.0	
3-Chlorophenol	BQL	mg/kg	10.0	
4-Chlorophenol	BQL	mg/kg	10.0	
4-Chloro-3-methylphenol	BQL	mg/kg	10.0	
2,3-Dichlorophenol	BQL	mg/kg	10.0	
2,4-Dichlorophenol	BQL	mg/kg	10.0	
2,5-Dichlorophenol	BQL	mg/kg	10.0	
2,6-Dichlorophenol	BQL	mg/kg	10.0	
3,4-Dichlorophenol	BQL	mg/kg	10.0	
2,4-Dimethylphenol	BQL	mg/kg	10.0	
4,6-Dinitro-2-methylphenol	BQL	mg/kg	50.0	
2,4-Dinitrophenol	BQL	mg/kg	50.0	
2-Nitrophenol	BQL	mg/kg	20.0	
4-Nitrophenol	BQL	mg/kg	50.0	
Pentachlorophenol	BQL	mg/kg	50.0	
Phenol	BQL	mg/kg	10.0	
2,4,6-Trichlorophenol	BQL	mg/kg	10.0	
Acenaphthene	BQL	mg/kg	10.0	
Acenaphthylene	BQL	mg/kg	10.0	
Anthracene	BQL	mg/kg	10.0	
Benidine	BQL	mg/kg	50.0	
Benzo(a)anthracene	BQL	mg/kg	10.0	
Benzo(b)fluoranthene	BQL	mg/kg	10.0	
Benzo(k)fluoranthene	BQL	mg/kg	10.0	
Benzo(a)pyrene	BQL	mg/kg	10.0	
Benzo(ghi)perylene	BQL	mg/kg	20.0	
bis(2-Chloroethoxy)methane	BQL	mg/kg	10.0	
Benzyl butyl phthalate	BQL	mg/kg	10.0	
Bis(2-chloroethyl)ether	BQL	mg/kg	10.0	
Bis(2-chloroisopropyl)ether	BQL	mg/kg	10.0	
Bis(2-ethylhexyl)phthalate	BQL	mg/kg	10.0	
4-Bromophenyl phenyl ether	BQL	mg/kg	10.0	
2-Chloronaphthalene	BQL	mg/kg	10.0	
4-Chlorophenyl phenyl ether	BQL	mg/kg	10.0	

Laboratory Report

Sample Identification: Site 4A/B
Sample Date: May 28, 2013
Sample Time: 1230/1315
Laboratory Number: 4036204
Matrix: Solid

Semivolatile Parameters	Analysis Result	Analysis Units	PQL	Comments
Chrysene	BQL	mg/kg	10.0	
1,2-Dichlorobenzene	BQL	mg/kg	10.0	
1,3-Dichlorobenzene	BQL	mg/kg	10.0	
1,4-Dichlorobenzene	BQL	mg/kg	10.0	
Dibenzo(a,h)anthracene	BQL	mg/kg	20.0	
Di-n-butylphthalate	BQL	mg/kg	10.0	
3,3-Dichlorobenzidine	BQL	mg/kg	50.0	
Diethyl phthalate	BQL	mg/kg	10.0	
Dimethyl phthalate	BQL	mg/kg	10.0	
2,4-Dinitrotoluene	BQL	mg/kg	10.0	
2,6-Dinitrotoluene	BQL	mg/kg	10.0	
Di-n-octylphthalate	BQL	mg/kg	10.0	
1,2-Diphenylhydrazine	BQL	mg/kg	20.0	
Fluoranthene	BQL	mg/kg	10.0	
Fluorene	BQL	mg/kg	10.0	
Hexachlorobenzene	BQL	mg/kg	10.0	
Hexachlorobutadiene	BQL	mg/kg	10.0	
Hexachlorocyclopentadiene	BQL	mg/kg	10.0	
Hexachloroethane	BQL	mg/kg	10.0	
Indeno(1,2,3-cd)pyrene	BQL	mg/kg	10.0	
Isophorone	BQL	mg/kg	10.0	
Naphthalene	BQL	mg/kg	10.0	
Nitrobenzene	BQL	mg/kg	10.0	
N-nitrosodimethylamine	BQL	mg/kg	50.0	
N-nitrosodiphenylamine	BQL	mg/kg	20.0	
N-nitrosodi-n-propylamine	BQL	mg/kg	20.0	
Phenanthrene	BQL	mg/kg	10.0	
Pyrene	BQL	mg/kg	10.0	
1,2,4-Trichlorobenzene	BQL	mg/kg	10.0	

Surrogates	% Rec	Date Prepared	Analysis Date/Time/Analyst
2-Fluorophenol	59	053013	053013/2134/MA
Phenol-d5	56		
Nitrobenzene-d5	80		
2-Fluorobiphenyl	104		
4-Terphenyl-d14	97		

Laboratory Report

Sample Identification: Site 1A/B
Sample Date: May 28, 2013
Sample Time: 1000/1030
Laboratory Number: 4036201
Matrix: Solid

Metals Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Antimony	BQL	mg/kg	5.45	061613/0759	MB
Arsenic	3.25	mg/kg	0.909	061613/0759	MB
Beryllium	BQL	mg/kg	0.455	061613/0759	MB
Cadmium	BQL	mg/kg	0.455	061613/0759	MB
Chromium (Total)	6.97	mg/kg	0.909	061613/0759	MB
Copper	4.82	mg/kg	0.909	061613/0759	MB
Lead	5.19	mg/kg	0.455	061613/1302	MB
Nickel	BQL	mg/kg	3.64	061613/0759	MB
Selenium	BQL	mg/kg	3.18	061613/0759	MB
Silver	BQL	mg/kg	0.909	061613/0759	MB
Thallium	BQL	mg/kg	0.909	061613/0759	MB
Zinc	23.8	mg/kg	1.82	061613/1302	MB
Mercury	0.0257	mg/kg	0.0162	061213/1521	MB
Polychlorinated Biphenyls (PCBs)	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Arochlor 1016	BQL	mg/kg	0.017	060713/1551	MA
Arochlor 1221	BQL	mg/kg	0.017	060713/1551	MA
Arochlor 1232	BQL	mg/kg	0.017	060713/1551	MA
Arochlor 1242	BQL	mg/kg	0.017	060713/1551	MA
Arochlor 1248	BQL	mg/kg	0.017	060713/1551	MA
Arochlor 1254	BQL	mg/kg	0.017	060713/1551	MA
Arochlor 1260	BQL	mg/kg	0.017	060713/1551	MA
Analysis Parameter	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
TOC	3,060	mg/kg	2,090	062113/0954	TJ

Laboratory Report

Sample Identification: Site 2A/B
Sample Date: May 28, 2013
Sample Time: 1130/1500
Laboratory Number: 4036202
Matrix: Solid

Metals Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Antimony	BQL	mg/kg	5.45	061613/0803	MB
Arsenic	3.88	mg/kg	0.909	061613/0803	MB
Beryllium	BQL	mg/kg	0.455	061613/0803	MB
Cadmium	BQL	mg/kg	0.455	061613/0803	MB
Chromium (Total)	7.27	mg/kg	0.909	061613/0803	MB
Copper	4.78	mg/kg	0.909	061613/0803	MB
Lead	5.11	mg/kg	0.455	061613/1306	MB
Nickel	BQL	mg/kg	3.64	061613/0803	MB
Selenium	BQL	mg/kg	3.18	061613/0803	MB
Silver	BQL	mg/kg	0.909	061613/0803	MB
Thallium	BQL	mg/kg	0.909	061613/0803	MB
Zinc	21.1	mg/kg	1.82	061613/1306	MB
Mercury	0.0212	mg/kg	0.0167	061213/1523	MB
Polychlorinated Biphenyls (PCBs)	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Arochlor 1016	BQL	mg/kg	0.017	060713/1634	MA
Arochlor 1221	BQL	mg/kg	0.017	060713/1634	MA
Arochlor 1232	BQL	mg/kg	0.017	060713/1634	MA
Arochlor 1242	BQL	mg/kg	0.017	060713/1634	MA
Arochlor 1248	BQL	mg/kg	0.017	060713/1634	MA
Arochlor 1254	BQL	mg/kg	0.017	060713/1634	MA
Arochlor 1260	BQL	mg/kg	0.017	060713/1634	MA
Analysis Parameter	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
TOC	3,520	mg/kg	1,760	062113/1002	TJ

Laboratory Report

Sample Identification: Site 3A/B
Sample Date: May 28, 2013
Sample Time: 1145/1200
Laboratory Number: 4036203
Matrix: Solid

Metals Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Antimony	BQL	mg/kg	5.00	061613/0331	MB
Arsenic	3.10	mg/kg	0.833	061613/0331	MB
Beryllium	0.418	mg/kg	0.417	061613/0331	MB
Cadmium	BQL	mg/kg	0.417	061613/0331	MB
Chromium (Total)	7.40	mg/kg	0.833	061613/0331	MB
Copper	4.44	mg/kg	0.833	061613/0331	MB
Lead	6.23	mg/kg	0.417	061613/0331	MB
Nickel	3.67	mg/kg	3.33	061613/0331	MB
Selenium	BQL	mg/kg	2.92	061613/0331	MB
Silver	BQL	mg/kg	0.833	061613/0651	MB
Thallium	BQL	mg/kg	0.833	061613/0331	MB
Zinc	23.3	mg/kg	1.67	061613/0331	MB
Mercury	0.0255	mg/kg	0.0146	061213/1507	MB
Polychlorinated Biphenyls (PCBs)	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Arochlor 1016	BQL	mg/kg	0.017	060713/1718	MA
Arochlor 1221	BQL	mg/kg	0.017	060713/1718	MA
Arochlor 1232	BQL	mg/kg	0.017	060713/1718	MA
Arochlor 1242	BQL	mg/kg	0.017	060713/1718	MA
Arochlor 1248	BQL	mg/kg	0.017	060713/1718	MA
Arochlor 1254	BQL	mg/kg	0.017	060713/1718	MA
Arochlor 1260	BQL	mg/kg	0.017	060713/1718	MA
Analysis Parameter	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
TOC	6,290	mg/kg	1,940	062413/0831	TJ

Laboratory Report

Sample Identification: Site 4A/B
Sample Date: May 28, 2013
Sample Time: 1230/1315
Laboratory Number: 4036204
Matrix: Solid

Metals Parameters	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Antimony	BQL	mg/kg	5.26	061613/0807	MB
Arsenic	3.29	mg/kg	0.877	061613/0807	MB
Beryllium	BQL	mg/kg	0.439	061613/0807	MB
Cadmium	BQL	mg/kg	0.439	061613/0807	MB
Chromium (Total)	7.36	mg/kg	0.877	061613/0807	MB
Copper	5.45	mg/kg	0.877	061613/0807	MB
Lead	5.21	mg/kg	0.439	061613/1309	MB
Nickel	3.59	mg/kg	3.51	061613/0807	MB
Selenium	BQL	mg/kg	3.07	061613/0807	MB
Silver	BQL	mg/kg	0.877	061613/0807	MB
Thallium	BQL	mg/kg	0.877	061613/0807	MB
Zinc	21.3	mg/kg	1.75	061613/1309	MB
Mercury	0.0208	mg/kg	0.0194	061213/1525	MB
Polychlorinated Biphenyls (PCBs)	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
Arochlor 1016	BQL	mg/kg	0.017	060713/1801	MA
Arochlor 1221	BQL	mg/kg	0.017	060713/1801	MA
Arochlor 1232	BQL	mg/kg	0.017	060713/1801	MA
Arochlor 1242	BQL	mg/kg	0.017	060713/1801	MA
Arochlor 1248	BQL	mg/kg	0.017	060713/1801	MA
Arochlor 1254	BQL	mg/kg	0.017	060713/1801	MA
Arochlor 1260	BQL	mg/kg	0.017	060713/1801	MA
Analysis Parameter	Analysis Result	Analysis Units	PQL	Analysis Date & Time	By
TOC	6,790	mg/kg	1,700	062413/0847	TJ

Methodology

Job Number: 40362

Reference: Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, USEPA, SW-846.

Parameter	Method
Volatiles	8260B
Semivolatiles *	8270C
PCB's	8082
TOC *	9060
Antimony *	6010
Arsenic *	6010
Barium *	6010
Beryllium *	6010
Cadmium *	6010
Chromium *	6010
Copper *	6010
Lead *	6010
Mercury *	7471
Nickel *	6010
Selenium *	6010
Silver *	6010
Thallium *	6010
Zinc *	6010

* Subcontracted to Pace Analytical Services, Inc., LELAP Certification #02006

Quality Assurance/ Quality Control

Job Number: 40362

Parameter	Sample ID (3A/B)	Sample Result ppb	Spike Added ppb	MS % Rec.	MSD % Rec.
Benzene	4036203	BQL	50.0	123	130
Bromodichloromethane	4036203	BQL	50.0	130	80
Bromoform	4036203	BQL	50.0	122	120
Carbon tetrachloride	4036203	BQL	50.0	106	82
Chlorobenzene	4036203	BQL	50.0	138	132
Chloroethane	4036203	BQL	50.0	65	67
Chloroform	4036203	BQL	50.0	92	95
Dibromochloromethane	4036203	BQL	50.0	130	124
1,1-Dichloroethane	4036203	BQL	50.0	112	109
1,2-Dichloroethane	4036203	BQL	50.0	88	91
1,1-Dichloroethylene	4036203	BQL	50.0	65	74
1,2-Dichloropropane	4036203	BQL	50.0	75	77
cis-1,3-Dichloropropene	4036203	BQL	50.0	91	92
Ethyl benzene	4036203	BQL	50.0	122	134
Methyl bromide (bromomethane)	4036203	BQL	50.0	63	62
Methylene Chloride	4036203	BQL	50.0	107	102
1,1,2,2-Tetrachloroethane	4036203	BQL	50.0	106	123
Tetrachloroethylene	4036203	BQL	50.0	82	62
Toluene	4036203	BQL	50.0	89	70
1,2-trans-Dichloroethylene	4036203	BQL	50.0	89	89
1,1,1-Trichloroethane	4036203	BQL	50.0	71	72
1,1,2-Trichloroethane	4036203	BQL	50.0	87	83
Trichloroethylene	4036203	BQL	50.0	120	130
Vinyl Chloride	4036203	BQL	50.0	61	66

Quality Assurance/ Quality Control

Job Number: 40362

Parameter	Sample ID (3A/B)	Sample Result ppb	Spike Added ppb	MS % Rec.	MSD % Rec.
2-Chlorophenol	4036203	BQL	1670	64	71
2,4-Dichlorophenol	4036203	BQL	1670	81	78
2,4-Dimethylphenol	4036203	BQL	1670	67	71
2-Nitrophenol	4036203	BQL	1670	71	67
Phenol	4036203	BQL	1670	54	51
2,4,6-Trichlorophenol	4036203	BQL	1670	70	77
Acenaphthene	4036203	BQL	1670	78	84
Acenaphthylene	4036203	BQL	1670	76	72
Anthracene	4036203	BQL	1670	72	77
Benzo(a)anthracene	4036203	BQL	1670	62	72
Benzo(b)fluoranthene	4036203	BQL	1670	74	62
Benzo(k)fluoranthene	4036203	BQL	1670	79	80
Benzo(a)pyrene	4036203	BQL	1670	73	68
Benzo(ghi)perylene	4036203	BQL	1670	60	65
bis(2-Chloroethoxy)methane	4036203	BQL	1670	57	61
Benzyl butyl phthalate	4036203	BQL	1670	81	88
Bis(2-chloroethyl)ether	4036203	BQL	1670	78	77
Bis(2-chloroisopropyl)ether	4036203	BQL	1670	50	47
Bis(2-ethylhexyl)phthalate	4036203	BQL	1670	90	99
4-Bromophenyl phenyl ether	4036203	BQL	1670	69	66
4-Chlorophenyl phenyl ether	4036203	BQL	1670	72	80
Chrysene	4036203	BQL	1670	69	73
1,2-Dichlorobenzene	4036203	BQL	1670	83	89
1,3-Dichlorobenzene	4036203	BQL	1670	90	83
1,4-Dichlorobenzene	4036203	BQL	1670	85	90
Dinbenz(a,h)anthracene	4036203	BQL	1670	66	73
Di-n-butylphthalate	4036203	BQL	1670	94	89
Diethyl phthalate	4036203	BQL	1670	88	96
Dimethyl phthalate	4036203	BQL	1670	78	84
2,4-Dinitrotoluene	4036203	BQL	1670	74	81
2,6-Dinitrotoluene	4036203	BQL	1670	74	79
Di-n-octylphthalate	4036203	BQL	1670	98	105
Fluoranthene	4036203	BQL	1670	72	79
Fluorene	4036203	BQL	1670	68	75
Hexachlorobenzene	4036203	BQL	1670	64	68
Hexachlorobutadiene	4036203	BQL	1670	74	76
Hexachloroethane	4036203	BQL	1670	60	64
Indeno(1,2,3-cd)pyrene	4036203	BQL	1670	60	63
Naphthalene	4036203	BQL	1670	75	79
Nitrobenzene	4036203	BQL	1670	61	68
N-nitrosodi-n-propylamine	4036203	BQL	1670	65	75
Phenanthrene	4036203	BQL	1670	71	79
Pyrene	4036203	BQL	1670	75	81
1,2,4-Trichlorobenzene	4036203	BQL	1670	72	78

BQL-Below Quantitation Limit

Quality Assurance/ Quality Control

Job Number: 40362

Parameter	Sample ID (3A/B)	Sample Result ppb	Spike Added ppm	MS % Rec.	MSD % Rec.
PCB-1260 (Arochlor 1260)	4036203	BQL	0.167	82	103

Parameter	Sample ID (3A/B)	Sample Result ppm	Spike Added ppm	MS % Rec.	MSD % Rec.
Antimony	210273	BQL	90.9	42	46
Arsenic	210273	3.10	90.9	88	89
Beryllium	210273	0.418	90.9	98	99
Cadmium	210273	BQL	90.9	90	91
Chromium	210273	7.40	90.9	102	102
Copper	210273	4.44	90.9	94	95
Lead	210273	6.23	90.9	86	87
Nickel	210273	3.67	90.9	92	94
Selenium	210273	BQL	90.9	87	87
Thallium	210273	BQL	90.9	77	79
Zinc	210273	23.3	90.9	99	100
Silver	210273	BQL	45.5	86	86
Mercury	210272	0.0255	0.0909	90	90

Parameter	Sample ID (3A/B)	Sample Result mg/kg	Spike Added mg/kg	MS % Rec.	MSD % Rec.
TOC	811223	56,700	1,000	59	90

Quality Assurance/ Quality Control

Job Number: 40362

Parameter	QC Batch ID	Method Blank Result ppb	Spike Added ppb	LCS % Rec.
Benzene	060713	BQL	50.0	97
Bromodichloromethane	060713	BQL	50.0	72
Bromoform	060713	BQL	50.0	77
Carbon tetrachloride	060713	BQL	50.0	85
Chlorobenzene	060713	BQL	50.0	117
Chloroethane	060713	BQL	50.0	50
Chloroform	060713	BQL	10.0	91
Dibromochloromethane	060713	BQL	10.0	72
1,1-Dichloroethane	060713	BQL	50.0	118
1,2-Dichloroethane	060713	BQL	50.0	103
1,1-Dichloroethylene	060713	BQL	50.0	88
1,2-Dichloropropane	060713	BQL	50.0	122
cis-1,3-Dichloropropene	060713	BQL	50.0	130
Ethyl benzene	060713	BQL	50.0	83
Methylene Chloride	060713	BQL	50.0	77
1,1,2,2-Tetrachloroethane	060713	BQL	50.0	84
Tetrachloroethylene	060713	BQL	50.0	93
Toluene	060713	BQL	50.0	109
1,2-trans-Dichloroethylene	060713	BQL	50.0	73
1,1,1-Trichloroethane	060713	BQL	50.0	96
1,1,2-Trichloroethane	060713	BQL	50.0	146
Trichloroethylene	060713	BQL	50.0	77
Vinyl Chloride	060713	BQL	50.0	67

BQL-Below Quantitation Limit

Quality Assurance/ Quality Control

Job Number: 40362

Parameter	QC Batch ID	Method Blank Result ppb	Spike Added ppb	LCS % Rec.
2-Chlorophenol	053013	BQL	1670	65
2,4-Dichlorophenol	053013	BQL	1670	77
2,4-Dimethylphenol	053013	BQL	1670	25
2-Nitrophenol	053013	BQL	1670	61
Phenol	053013	BQL	1670	53
2,4,6-Trichlorophenol	053013	BQL	1670	65
Acenaphthene	053013	BQL	1670	83
Acenaphthylene	053013	BQL	1670	74
Anthracene	053013	BQL	1670	52
Benzo(a)anthracene	053013	BQL	1670	66
Benzo(b)fluoranthene	053013	BQL	1670	81
Benzo(k)fluoranthene	053013	BQL	1670	100
Benzo(a)pyrene	053013	BQL	1670	81
Benzo(ghi)perylene	053013	BQL	1670	73
bis(2-Chloroethoxy)methane	053013	BQL	1670	60
Benzyl butyl phthalate	053013	BQL	1670	84
Bis(2-chloroethyl)ether	053013	BQL	1670	80
Bis(2-chloroisopropyl)ether	053013	BQL	1670	44
Bis(2-ethylhexyl)phthalate	053013	BQL	1670	94
4-Bromophenyl phenyl ether	053013	BQL	1670	70
4-Chlorophenyl phenyl ether	053013	BQL	1670	78
Chrysene	053013	BQL	1670	74
1,2-Dichlorobenzene	053013	BQL	1670	86
1,3-Dichlorobenzene	053013	BQL	1670	86
1,4-Dichlorobenzene	053013	BQL	1670	87
Dinbenz(a,h)anthracene	053013	BQL	1670	81
Di-n-butylphthalate	053013	BQL	1670	91
Diethyl phthalate	053013	BQL	1670	95
Dimethyl phthalate	053013	BQL	1670	82
2,4-Dinitrotoluene	053013	BQL	1670	73
2,6-Dinitrotoluene	053013	BQL	1670	75
Di-n-octylphthalate	053013	BQL	1670	118
Fluoranthene	053013	BQL	1670	77
Fluorene	053013	BQL	1670	74
Hexachlorobenzene	053013	BQL	1670	68
Hexachlorobutadiene	053013	BQL	1670	77
Hexachloroethane	053013	BQL	1670	68
Indeno(1,2,3-cd)pyrene	053013	BQL	1670	68
Naphthalene	053013	BQL	1670	80
Nitrobenzene	053013	BQL	1670	66
N-nitrosodi-n-propylamine	053013	BQL	1670	72
Phenanthrene	053013	BQL	1670	76
Pyrene	053013	BQL	1670	80
1,2,4-Trichlorobenzene	053013	BQL	1670	76

BQL-Below Quantitation Limit

Quality Assurance/ Quality Control

Job Number: 40362

Parameter	QC Batch ID	Method Blank Result	Spike Added	LCS % Rec.
		ppb	ppm	
PCB-1260 (Arochlor 1260)	060713	BQL	0.167	114
Parameter	QC Batch ID	Method Blank Result	Spike Added	LCS % Rec.
		ppm	ppm	
Antimony	210273	BQL	98.0	97
Arsenic	210273	BQL	98.0	92
Beryllium	210273	BQL	98.0	100
Cadmium	210273	BQL	98.0	98
Chromium	210273	BQL	98.0	99
Copper	210273	BQL	98.0	97
Lead	210273	BQL	98.0	98
Nickel	210273	BQL	98.0	100
Selenium	210273	BQL	98.0	91
Thallium	210273	BQL	98.0	93
Zinc	210273	BQL	98.0	100
Silver	210273	BQL	49.0	95
Mercury	210272	BQL	0.100	102
Parameter	QC Batch ID	Method Blank Result	Spike Added	LCS % Rec.
		mg/kg	mg/kg	
TOC	811222	BQL	1,000	85

Chain of Custody and Analysis Request
Company Confidential and Proprietary

Page 1 of 1

EASI Job Number 40362		Project Reference/Client PO Number Fargalls Shipyard		Sample Preservatives (use preservative code) A A A A A A		Preservatives: A - $\leq 6^{\circ}\text{C}$ B - $\text{H}_2\text{SO}_4, \leq 6^{\circ}\text{C}$ C - $\text{HCl}, \leq 6^{\circ}\text{C}$ D - $\text{HNO}_3, \leq 6^{\circ}\text{C}$ E - $\text{NaOH}, \leq 6^{\circ}\text{C}$ F - $\text{Na}_2\text{S}_2\text{O}_3, \leq 6^{\circ}\text{C}$ G - $\text{NaOH/C}_4\text{H}_6\text{O}_4\text{Zn}, \leq 6^{\circ}\text{C}$ H - Encore Sampler, $\leq 6^{\circ}\text{C}$ *	
Client/Billing Information Burk Kleinfater ATTN: Reddy Nandipati, PE				Analyses Requested			
Regulatory Information (Check all that apply) ☐ Wastewater ☐ Stormwater ☐ Groundwater ☐ Drinking Water ☒ RCRA ☐ UST ☐ RECAP ☐ Non-Regulatory				Number of Containers	Composite or Grab (C or G)	Matrix (use matrix code)	Volatiles Semi Volatiles Metals PCBs TOC
Requested Turnaround ☒ Standard Turnaround ☐ Rush (surcharges may apply) Due Date _____							
Lab ID	Collected Date Time	Client Sample ID					Comments
01	5-28-13 1000	Site 1A	1	G	S	X X X X X	Composite both samples (A+B) together prior to analysis. NO
02	1030	Site 1B	1			X X X X X	
03	1130	Site 2A	1			X X X X X	
04	1500	Site 2B	1			X X X X X	
05	1145	Site 3A	1			X X X X X	
06	1200	Site 3B	1			X X X X X	
07	1230	Site 4A	1			X X X X X	
08	1315	Site 4B	1			X X X X X	
Note: This document is a legal and binding agreement to transfer custody and perform the requested analyses, whereby client agrees, by signing this document to pay for services on terms of NET 30 days or other agreeable terms.							
Relinquished by <i>[Signature]</i>		Date/Time 5-28-13/1940	Received by <i>[Signature]</i>		Special Instructions, QC Requirements, Possible Hazard ID		
Relinquished by		Date/Time	Received by				
Relinquished by		Date/Time	Received by				
Sampler(s) Michael Antoine							
Note: Client should review all relevant sample receipt information upon receipt of final lab report to ensure Data Quality Objectives of project/permit are achieved. Separate sheet may be used to record notes and/or resolution to non-compliant (compromised) samples. Refer to EASI's Sample Acceptance Policy, available upon request.							
Sample Receipt Information (To be completed by EASI upon receipt of samples)							
1. How samples received? Client/courier delivery, Iced? Yes No Field pick-up, Iced? Yes No If no, Iced upon receipt? Yes No Collected by EASI, Iced? <u>Yes</u> No							
2. Sample temp upon receipt at lab <u>11.5</u> °C determined by <u>IR1</u> IR2 Note: Samples requiring thermal preservation are acceptable if temp is >0° to 6° C or arrive iced on day of collection.							
3. Placement and condition of custody seals, if present							
4. COC properly completed, received in good condition and signed? <u>Yes</u> No							
5. Samples uniquely identified and labels/IDs legible? <u>Yes</u> No							
6. COC and labels/IDs agree? <u>Yes</u> No							
7. Appropriate containers used and sufficient quantity received? <u>Yes</u> No							
8. Samples within holding times? <u>Yes</u> No							
9. Samples requiring chemical preservation appropriately preserved? <u>Yes</u> No							
10. VOA vials free of bubbles >1/4" (6 mm)? <u>Yes</u> No							
Completed By/Date/Time 5-28-13							
NOTES:							

EASI, LLC 2501 Lexington Avenue, Kenner, Louisiana 70062 504-469-3685

APPENDIX C

National Wetland Inventory Map



U.S. Fish and Wildlife Service

National Wetlands Inventory

HII 10-Year Maintenance Dredging Permit



U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov

August 6, 2026

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX D

MDAH Approval Letter and Correspondence

September 7, 2021

Mr. Reddy Nandipati
Burk-Kleinpeter, Inc.
4176 Canal Street
New Orleans, Louisiana 70119-5994

RE: Request for LNO for 10 Year Maintenance Dredging by Huntington Ingalls Industries, Pascagoula, (USACE) MDAH Project Log #07-091-21 (02-007-21), Jackson County

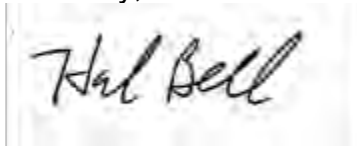
Dear Mr. Nandipati:

We have reviewed your August 12, 2021 request for a cultural resources assessment for the above referenced project in accordance with our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800. After reviewing the information provided, we concur that no historic resources should be effected. Therefore, we have no objection with the proposed undertaking.

Should there be additional work in connection with the project, or any changes in the scope of work, please let us know in order that we may provide you with appropriate comments in compliance with the above referenced regulations.

If you have any questions, please do not hesitate to contact us at (601) 576-6940.

Sincerely,



Hal Bell
Review and Compliance Officer

FOR: Katie Blount
State Historic Preservation Officer

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BURK-KLEINPETER, INC.

ENGINEERING · PLANNING · ENVIRONMENTAL

4176 CANAL STREET, NEW ORLEANS, LA 70119-5994
TELEPHONE (504) 486-5901 FAX (504) 488-1714
P.O. BOX 19087, NEW ORLEANS, LA 70179-0087
WWW.BKIUSA.COM



CHIEF EXECUTIVE OFFICER
J. W. "BILL" GIARDINA, JR., PE

PRESIDENT
MICHAEL D. CHOPIN, PE

CORPORATE SECRETARY
BRUCE L. BADON, AICP

SENIOR VICE PRESIDENTS
RENE A. CHOPIN, III, PE, SECB
HENRY M. PICARD, III, PE, PLS

August 12, 2021

Mississippi Department of Archives and History
Historic Preservation Division
P. O. Box 571
Jackson, MS 39205-0571

RE: Huntington Ingalls Industries, Pascagoula – 10 Year Maintenance Dredging: USACE/MDMR Permit Application (BKI NO.21.012)

Dear Sir/Madam:

Burk-Kleinpeter, Inc. (BKI) is currently working on a "Ten-Year Maintenance Dredging USACE/MDMR Permit" application for Huntington Ingalls Industries (HII), Pascagoula, Mississippi. During the previous permitting cycle, BKI received a letter of no objection, dated 2/14/2013, from the Mississippi Department of Archives and History (MDAH) stating that no cultural resources were likely to be affected in the project area. Project location maps and MDAH letter of no-objection (dated 2/14/2013) are enclosed for your reference.

BKI requests any updated information from MDAH records related to cultural resources in the project area and updated letter of no-objection for the project. Please feel free to contact me at (504)296-5040 or e-mail me reddynandipati@cox.net, if you have any questions or need additional information. We highly appreciate your guidance and cooperation on this issue.

Yours Truly,

Burk-Kleinpeter, Inc.

Reddy Nandipati, P.E.
Consultant (Environmental Engineer)





Attachments:

1. Maps
2. Letter from MDAH (2/14/2013)





PO Box 571, Jackson, MS 39205-0571
601-576-6850 • Fax 601-576-6975
mdah.state.ms.us
H.T. Holmes, Director

February 14, 2013

Mr. Reddy Nandipati
Burk-Kleinpeter, Inc.
4176 Canal Street
New Orleans, Louisiana 70119-5994

RE: Proposed ten year maintenance dredging by Huntington Ingalls Industries,
Pascagoula, MDAH Project Log #, 02-007-13, Jackson County

Dear Mr. Nadipati:

We have reviewed your request for a cultural resources assessment, received on February 1, for the above referenced project in accordance with our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800. After reviewing the information provided, it is our determination that no cultural resources are likely to be affected. Therefore, we have no objection with the proposed undertaking.

Should there be additional work in connection with the project, or any changes in the scope of work, please let us know in order that we may provide you with appropriate comments in compliance with the above referenced regulations.

If you have any questions, please do not hesitate to contact us at (601) 576-6940.

Sincerely,

Hal Bell
Review and Compliance Assistant

FOR: Greg Williamson
Review and Compliance Officer



LEGEND:



MAINTENANCE DREDGING AREA



SAMPLE LOCATIONS (MAY 2013)



NEW AREAS FOR DREDGING



CHANGE IN DREDGE DEPTH

FIGURE 1

BURK-KLEINPETER, INC. ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL 4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119 (504) 486-5901 FAX (504) 488-1714		HUNTINGTON INGALLS INDUSTRIES Pascagoula, Mississippi	
DESIGNED BY <u>R.N.</u>	A-E SHEET NO.	10 YEAR MAINTENANCE DREDGING PROGRAM (2022-2032)	
DRAWN BY <u>B.V.L.</u>	A-E JOB NO.		
CHECKED BY _____		VICINITY MAP	
DRAWING NUMBER <u>BKI#NO.21.012</u>	DATE <u>08/06/2021</u>	SHEET	

APPENDIX D1

Section 106 Cultural Resource Assessment Application



Section 106

Cultural Resource Assessment Application

You have successfully submitted your Cultural Resource Assessment for review.

Your confirmation number is: **202607151654011900934106**

You can return to this site to check the status of your assessment. If you did not register for an account, you can use the contact email address submitted in your Cultural Resource Assessment request and the Confirmation Number above to view the status.

[\[Return to Dashboard \]](#)



Section 106

View Cultural Resource Request

[\[Return to Dashboard \]](#)

Status: **In Review**

Project ID: 07-104-26

Project Name: Proposed Maintenance Dredging, Huntington Ingalls
Industry, Pascagoula

Submitted: 7/15/2026 4:54:01 PM

County: Jackson

Latitude / Longitude: 30.362962021 / -88.571461274

Section / Township / Range: 2 / 8 / 6

[\[View All Request Information \]](#)

Applicant Info:

Name: Reddy Nandipati

Email: reddynandipati@cox.net

Phone Number: 5042965040

Company: Accu-Environmental, LLC

Address 1: 4901 Lennox Blvd

City: New Orleans

State: Louisiana

Zip: 70131

Contact Person:

Name: Reddy Nandipati

Email: reddyandipati@cox.net

Phone Number: 5042965040

Company: Accu-Environmental, LLC

Address 1: 4901 Lennox Blvd

City: New Orleans

State: Louisiana

Zip: 70131

Type of Involvement:

Permit/License

Other Type of Involvement Explained:

Agency Involved:

Corps of Engineers

Project Information:

Project Description:

Ten-year maintenance dredging at Huntington Ingalls Industries (HII), Pascagoula as per USACE Permit #SAM-2022-00224-PAH until 3/11/2033: dredging at East Bank Docks, East Bank Sonar Pit, West Bank Old Launch Grid Area, West Bank Sonar Pit, West Bank Docks, and West Bank Launch Pit. HII is applying for a permit modification to i) increase the dredging depth at the West Bank Launch Pit from -74 ft to -77 ft; ii) extend the east bank sonar pit (-55 ft) to the north by about 1,500 ft to the north.

Project Location:

Project Address: 1000 Jerry St Pe' Hwy

Project City: Pascagoula

State: Mississippi

Zip: 39567

View Project Location

Proposed Work:

Project includes:

Other

Other Proposed Work Explained:

Maintenance dredging of existing channels and docks at the Huntington Ingalls Industries, Pascagoula to various depths ranging from -38 ft, -55 ft, and -77 ft in accordance with the USACE permit

Approximately how many acres are in the project area?

154

To your knowledge, has a cultural resources survey been conducted in the project area?

No

Describe the present use and condition of the property:

The property is an active Huntington Ingalls Industries (HII) Pascagoula facility building Naval, Merchant Marine, and commercial vessels and structures since 1938. Present use of the property is as docks and channels for HII shipbuilding activities.

National Register of Historic Places:

Does this project involve properties listed in the National Register of Historic Places?

No

Name the historic property or district, if known:

Are there any structures in the project area?

No

Year structure was built:

Federal and/or State Historic Preservation Tax Incentives:

Is this project a part of a historic tax credit?

No

Mississippi Landmarks:

Does this project include properties that are designated Mississippi Landmarks?

No

Project Specifications:

Have plans and specifications for the project been completed?

No

Has the ground at the project location been previously developed, graded, or disturbed?

Yes

Describe the nature of the disturbed/developed portion:

Maintenance dredging activities has been going on for years in the project area at Huntington Ingalls Industries, Pascagoula.

Will this project necessitate the acquisition of fill material?

No

Has the site from which fill material will be acquired been selected?

No

Is the fill material sourced from a pre-approved MDEQ fill location?

No

Attachments:

File Name	File Type
EastBankSonarPits.JPEG	image/jpeg
WestBankBerth7.JPEG	image/jpeg
WestBankLaunchPit.JPEG	image/jpeg
WestBankSonarPit.JPEG	image/jpeg
ProjectMap.pdf	application/pdf
MDAHLetter2021.pdf	application/pdf

[\[Return to Dashboard \]](#)

© 2026 - Mississippi Department of Archives and History

August 13, 2026

Mr. Reddy Nandipati
Accu-Environmental, LLC
4901 Lennox Boulevard
New Orleans, Louisiana 70131

RE: Proposed Maintenance Dredging, Huntington Ingalls Industry, Pascagoula, (USACE)
MDAH Project Log #07-104-26, Jackson County

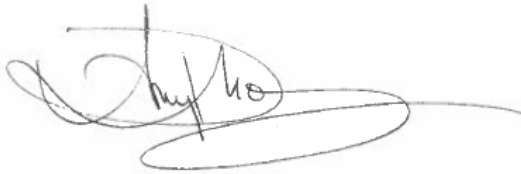
Dear Mr. Nandipati:

We have reviewed the request for cultural resources assessment, received on July 15, 2026, for the above referenced project in accordance with our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800.

After reviewing the information provided and given the number of cultural resources in the vicinity, MDAH respectfully requests this consultation be conducted by the Corps of Engineers.

If you have any questions, please do not hesitate to contact us at section106@mdah.ms.gov.

Sincerely,



Amy D. Morgan
Review and Compliance Officer

FOR: Barry White
State Historic Preservation Officer

APPENDIX E

Jackson County Demographic Information

 An official website of the United States government [Here's how you know](#)



QuickFacts
Jackson County, Mississippi

QuickFacts provides statistics for all states and counties. Also for cities and towns with a *population of 5,000 or more*.

Enter state, county, city, town, or zip code -- Select a fact --



Table

All Topics

Q

Jackson County,
Mississippi

Population estimates, July 1, 2025, (V2025)

147,666

PEOPLE

Population

Population estimates, July 1, 2025, (V2025)

147,666

Population estimates base, April 1, 2020, (V2025)

143,245

Population, percent change - April 1, 2020 (estimates base) to July 1, 2025, (V2025)

3.1%

Population, Census, April 1, 2020

143,252

Population, Census, April 1, 2010

139,668

Age and Sex

Persons under 5 years, percent

5.3%

Persons under 18 years, percent

22.1%

Persons 65 years and over, percent

19.4%

Female persons, percent

51.6%

Race and Hispanic Origin

White alone, percent

70.9%

Black alone, percent

(a)21.3%

American Indian and Alaska Native alone, percent

(a)0.7%

Asian alone, percent

(a)2.5%

Native Hawaiian and Other Pacific Islander alone, percent

(a)0.1%

Two or More Races, percent

4.4%

Hispanic or Latino, percent

(b)8.5%

White alone, not Hispanic or Latino, percent

64.4%

Population Characteristics

Veterans, 2020-2024

11,491

Foreign-born persons, percent, 2020-2024

3.3%

Housing

Housing Units, July 1, 2025, (V2025)

65,309

Owner-occupied housing unit rate, 2020-2024

72.7%

Median value of owner-occupied housing units, 2020-2024

\$193,100

Median selected monthly owner costs - with a mortgage, 2020-2024

\$1,550

Median selected monthly owner costs - without a mortgage, 2020-2024

\$470

Median gross rent, 2020-2024

\$1,101

Building Permits, 2025

724

Families & Living Arrangements

Households, 2020-2024

57,647

Persons per household, 2020-2024

2.50

Living in the same house 1 year ago, percent of persons age 1 year+ , 2020-2024

88.2%

Language other than English spoken at home, percent of persons age 5 years+, 2020-2024

6.8%

Computer and Internet Use

Households with a computer, percent, 2020-2024

96.4%

Households with a broadband Internet subscription, percent, 2020-2024

89.7%

Education

High school graduate or higher, percent of persons age 25 years+, 2020-2024

89.0%

</

Bachelor's degree or higher, percent of persons age 25 years+, 2020-2024	26.7%
Health	
With a disability, under age 65 years, percent, 2020-2024	16.0%
Persons without health insurance, under age 65 years, percent	11.3%
Economy	
In civilian labor force, total, percent of population age 16 years+, 2020-2024	59.1%
In civilian labor force, female, percent of population age 16 years+, 2020-2024	55.7%
Total accommodation and food services sales, 2022 (\$1,000)	296,846
Total health care and social assistance receipts/revenue, 2022 (\$1,000)	998,252
Total transportation and warehousing receipts/revenue, 2022 (\$1,000)	104,533
Total retail sales, 2022 (\$1,000)	1,825,912
Total retail sales per capita, 2022	\$12,596
Transportation	
Mean travel time to work (minutes), workers age 16 years+, 2020-2024	25.2
Income & Poverty	
Median households income (in 2024 dollars), 2020-2024	\$66,201
Per capita income in past 12 months (in 2024 dollars), 2020-2024	\$35,389
Persons in poverty, percent	13.8%
BUSINESSES	
Businesses	
Total employer establishments, 2023	2,358
Total employment, 2023	44,996
Total annual payroll, 2023 (\$1,000)	2,595,350
Total employment, percent change, 2022-2023	-1.9%
Total nonemployer establishments, 2023	11,242
All employer firms, Reference year 2023	1,944
Male-owned employer firms, Reference year 2023	1,243
Female-owned employer firms, Reference year 2023	
Minority-owned employer firms, Reference year 2023	
Nonminority-owned employer firms, Reference year 2023	1,550
Veteran-owned employer firms, Reference year 2023	
Nonveteran-owned employer firms, Reference year 2023	1,575
GEOGRAPHY	
Geography	
Population per square mile, 2020	198.2
Population per square mile, 2010	193.2
Land area in square miles, 2020	722.83
Land area in square miles, 2010	722.75
FIPS Code	28059

[About datasets used in this table](#)

Value Notes

Methodology differences may exist between data sources, and so estimates from different sources are not comparable.

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable. Click the Quick Info row in TABLE view to learn about sampling error.

The vintage year (e.g., V2025) refers to the final year of the series (2020 thru 2025). Different vintage years of estimates are not comparable.

Users should exercise caution when comparing 2020-2024 ACS 5-year estimates to other ACS estimates. For more information, please visit the [2024 5-year ACS Comparison Guidance](#) page.

Follow the [U.S. Census Bureau citation guidelines](#) to help credit your data sources correctly.

Fact Notes

- (a) Includes persons reporting only one race
- (b) Hispanics may be of any race, so also are included in applicable race categories
- (c) Economic Census - Puerto Rico data are not comparable to U.S. Economic Census data

Value Flags

- D Suppressed to avoid disclosure of confidential information
- F Fewer than 25 firms
- FN Footnote on this item in place of data
- NA Not available
- S Suppressed; does not meet publication standards
- X Not applicable
- Z Value greater than zero but less than half unit of measure shown

- Either no or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest open ended distribution.
- N Data for this geographic area cannot be displayed because the number of sample cases is too small.

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Annual Business Survey, Building Permits.

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Measuring America's People and Economy

APPENDIX F

Biological Assessment Report



BIOLOGICAL ASSESSMENT

HUNTINGTON INGALLS INDUSTRIES PASCAGOULA HARBOR MAINTENANCE DREDGING JACKSON COUNTY, MISSISSIPPI

Prepared for:

HUNTINGTON INGALLS INDUSTRIES
1000 ACCESS ROAD
PASCAGOULA, MS 39568

July 31, 2026

Thompson Engineering
Project No.: 26-1126-0058

2970 Cottage Hill Road, Suite 190
Mobile, AL 36606
251.666.2443 (office) | 251.666.6422 (fax)
www.thompsonengineering.com

A THOMPSON HOLDINGS, INC. COMPANY

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1.0 INTRODUCTION

This biological assessment (BA) has been prepared on behalf of Huntington Ingalls Industries (HII) Pascagoula Facility, for the proposed 10-year maintenance dredging program. The Project site is located on the lower east and west banks of the East Pascagoula River, in the City of Pascagoula, Jackson County, Mississippi. The Project location is presented in **Figure 1**. This BA addresses the potential effects of the proposed action in compliance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1536). Section 7 requires that, through consultation with the U.S. Fish and Wildlife Service (USFWS) and/or the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species or result in the destruction or adverse modification of critical habitat.

The purpose of this report is to describe the affected environment and the anticipated environmental consequences of the proposed maintenance dredging program, including expected effects on ESA species and critical habitat. **Table 1** identifies the regulatory agencies with jurisdiction over the components of the natural and human environment discussed in this BA. An Alternatives Analysis for the Project is provided under separate cover.

Table 1. Regulatory agencies and area of review for the Huntington Ingalls Industries (HII) Pascagoula Facility 10-year maintenance dredging program.		
Agency	Jurisdiction	Resource Area of Protection
U.S. Fish and Wildlife Service (USFWS)	ESA Section 7 Consultation Fish and Wildlife Conservation Act	Federally listed ESA species ESA Critical Habitat
National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) Protected Resources Division	ESA Section 7 Consultation Marine Mammal Protection Act	Federally listed ESA marine species ESA Critical Habitat All marine mammals

2.0 PROJECT DESCRIPTION

The proposed action is a 10-year maintenance dredging program at the HII Pascagoula Harbor facility (**Figure 1**). The program includes periodic dredging to maintain the existing facility depths for navigation. Approximately 1.1 million cubic yards of sand, silt, and clay materials will be dredged from the project area over a period from October 2026 to September 2032. Dredging will be conducted at depths ranging from -38 ft MLW to -77 ft MLW. It is expected that at least 3 dredging intervals will be required over this period.

Dredging will be conducted using hydraulic suction, and the dredge material will be conveyed via pipeline to the HII On-site Managed Confined Disposal Facility (CDP) located on the HII West Bank Facility (**Figure 1**). The dredged material will be allowed to settle and dewater in the 128-acre CDP.

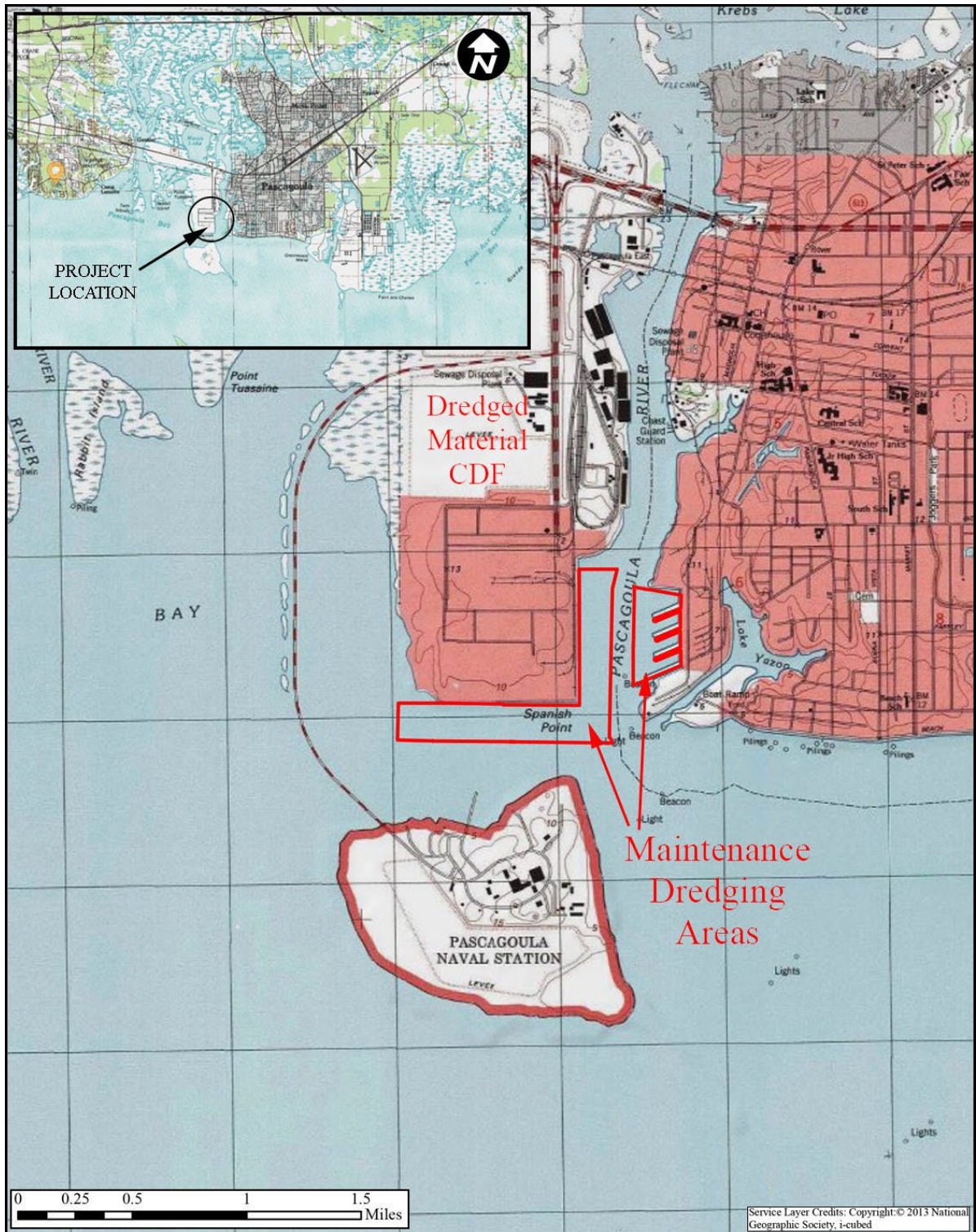


Figure 1. Location of the 10-year maintenance dredging program at the HII Pascagoula Harbor facility.

3.0 ENVIRONMENTAL BASELINE

The HII Project site is located at the Port of Pascagoula. The federal-maintained Upper Pascagoula Channel provides deep draft access to the Port. The former Pascagoula Naval Station is located to the south of the Project site. A substantial portion of coastal Mississippi Sound has been developed into urban, industrial, and residential uses. Much of this urban development is highly concentrated between Pascagoula and Bay St. Louis.

Mississippi Sound extends from Mobile Bay to Lake Borgne, Louisiana, separated from the Gulf of America by a series of narrow islands and sand bars including Cat, Ship, Horn, Petit Bois and Dauphin Islands. Several coastal bays drain into the system, including St. Louis Bay, Biloxi Bay, Pascagoula Bay, Grand Bay, and Portersville Bay, as well as numerous smaller bayous. Freshwater discharge has a large influence in the project area (Christmas and Eleuterius, 1973). The salinity regime of eastern Mississippi Sound is largely determined by influx of Gulf waters through Petit Bois, Horn, and Dog Keys Passes and the outflow from Mobile Bay, Pascagoula River, and Biloxi Bay (GMFMC, 1998).

In general, coastal Mississippi salinities are lower from January through June, during peak river discharge. Water exchange with the Gulf takes place through numerous passes between the barrier islands. Shallow areas adjacent to the mainland coast in areas influenced by river discharge have the greatest variation in salinity (Eleuterius and Beaugez, 1979). Salinity values recorded in the Grand Bay area in proximity to the proposed Project were noted to vary along a gradient from bayou to bay and with rainfall events. The salinity values can change from oligohaline conditions (0.0 to 5.0 ppt) to polyhaline conditions (18-30 ppt) (MDMR, 1998). Temperatures follow expected seasonal trends, with lowest averages in winter and highest averages in late summer and early fall.

Water currents in the Project area are influenced by freshwater outflow from the coastal bays, tidal fluctuation, bathymetry, and shoreline configuration, modified by wind speed and direction (BVA, 1985). Kjerfve (1983) classified Mississippi Sound as a lagoon with only weak gravitational circulation. The general circulation pattern is induced primarily by tides. Prevailing winds have a large effect on current direction and speed through effects on tidal movement. As incoming tides enter the Horn Island Pass, centrally located on the southern edge of the Sound, currents are bifurcated as water masses move north along an area offshore Pascagoula. Alongshore currents at the coastline then flow to the west toward Lake Borgne and east toward Mobile Bay (Kjerfve, 1983).

Upshaw et al. (1966) reported that silt and clay cover most of the bottom of Mississippi Sound, with sand being abundant long the margins and in barrier island passes where currents and waves are strongest. Silt clay is the dominant sediment type in Mississippi Sound and is predominantly riverine in origin. The shallowness of the Mississippi Sound (average depth at mean low water is 7 ft) and its sediment and wave action are responsible for the turbidity of the water. The Mississippi Sound estuarine/nearshore habitat is an area that undergoes relatively frequent benthic disturbances, such as storm action, maritime activity, trawling activity, and dredging operations.

Benthic species in Mississippi Sound are adapted and tolerant to disturbance. Recolonization by these species is rapid following burial or displacement. Macroinfaunal taxa in Mississippi Sound are mainly burrowing deposit feeders typical of the shallow estuaries along the northern Gulf coast and are adapted to widely varying salinity, temperature, dissolved oxygen, and sediment texture (BVA, 1985).

4.0 STATUS OF PROTECTED SPECIES AND CRITICAL HABITAT

The Information for Planning and Conservation (IPaC) decision support system (USFWS, 2026; **Appendix A**) identifies ESA species as potentially affected by activities within the region of the Project. These protected ESA species are presented in **Table 1**. Critical habitat has been designated in Mississippi for some of these species. A map of these critical habitats is presented in **Figure 2**.

Table 2. Federal-designated ESA species potentially occurring in the Project area (USFWS, 2026).			
Common Name	Scientific Name	Federal ESA Designation ¹	Critical Habitat in MS
Insects Monarch Butterfly	<i>Danaus plexippus</i>	Proposed T	No
Fishes Gulf Sturgeon	<i>Acipenser oxyrinchus desotoi</i>	T	Yes
Amphibians Dusky Gopher Frog	<i>Rana sevosa</i>	E	Yes
Reptiles Alabama Red-bellied Turtle Gopher Tortoise Green Sea Turtle Hawksbill Sea Turtle Kemp's Ridley Sea Turtle Leatherback Sea Turtle Loggerhead Sea Turtle	<i>Pseudemys alabamensis</i> <i>Gopherus polyphemus</i> <i>Chelonia mydas</i> <i>Eretmochelys imbricata</i> <i>Lepidochelys kempii</i> <i>Dermochelys coriacea</i> <i>Caretta caretta</i>	E T T E E E T	No No No No No No Yes
Birds Eastern Black Rail Piping Plover Rufa Red Knot	<i>Laterallus jamaicensis jamaicensis</i> <i>Charadrius melodus</i> <i>Calidris canutus rufa</i>	T T T	No Yes Yes (Proposed)
Mammals Tricolored Bat West Indian Manatee	<i>Perimyotis subflavus</i> <i>Trichechus manatus</i>	Proposed E T	No No

¹E=Endangered; T= Threatened

Those ESA-listed species unlikely to be affected by the Project are briefly discussed in the following subsections. ESA species and critical habitat with potential to be affected by the Project are discussed in **Section 4.2**.

4.1 ESA Listed Species Not Likely to Be Affected by the Project

Dusky Gopher Frog

Dusky gopher frog prefers drougthy, sandy uplands with access to cool, moist, subterranean refuges. These frogs typically co-occur with gopher tortoises in Mississippi. Populations of the species once occurred in Louisiana and Alabama, but today dusky gopher frog is found in just four locations in Harrison and Jackson counties in southern Mississippi. Dusky gopher frog's disappearance from much of its historical range has been due mostly to habitat destruction and alteration of the frog's longleaf pine upland and breeding habitats. Critical habitat for Dusky gopher frog does not exist at the Project location (**Figure 2**).

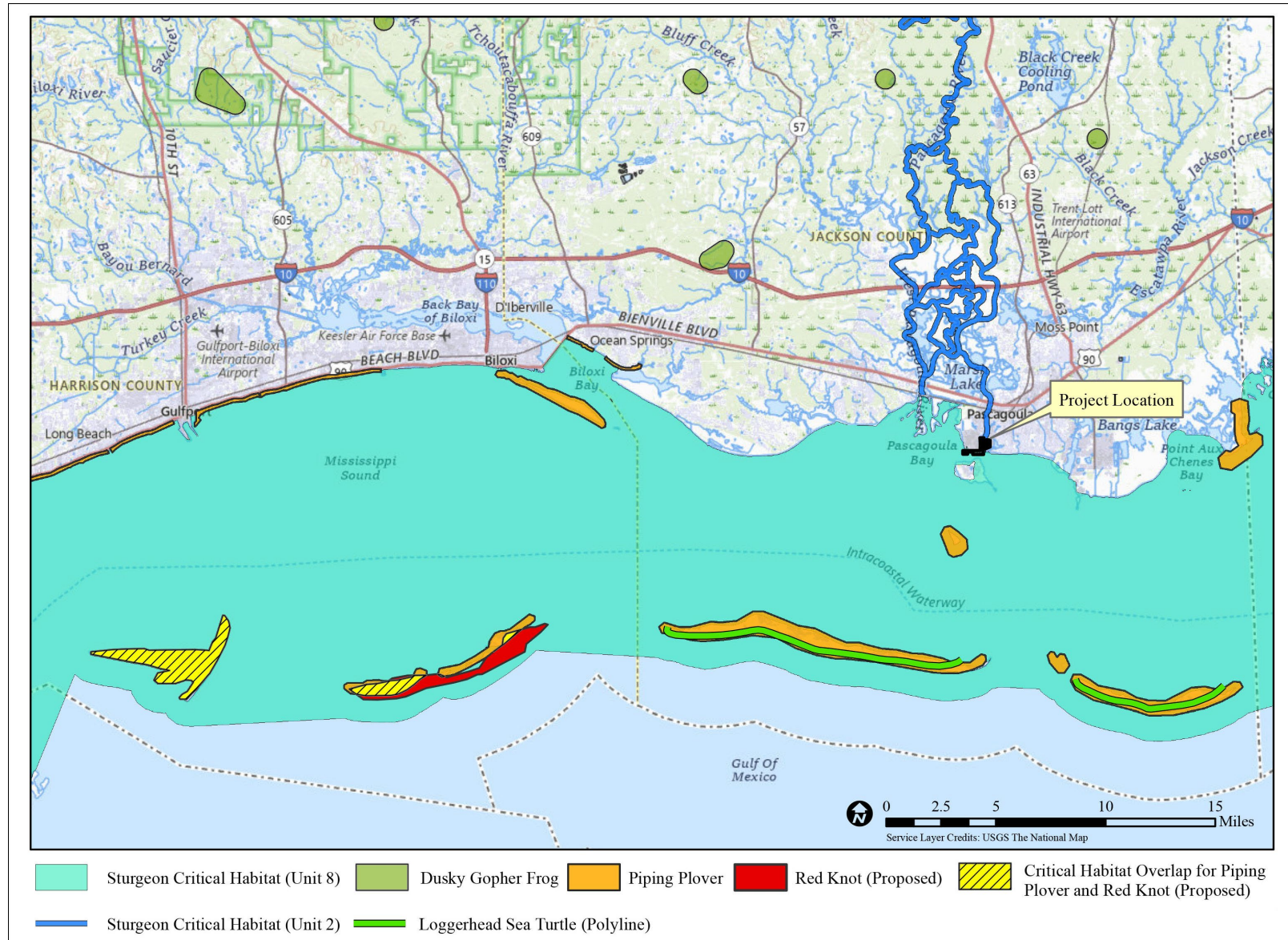


Figure 2. Critical habitat in Mississippi for ESA protected species as it relates to the Project location.

Alabama Red-bellied Turtle

Alabama red-bellied turtle distribution is primarily restricted to the lower Mobile Tensaw Delta in Alabama and other densely vegetated backwater areas of freshwater streams, rivers, and bays adjacent to Mobile Bay. The highest concentrations of red-bellied turtles primarily occur in Baldwin County (AL) along a thirteen-mile stretch of the Tensaw River from Hurricane Landing south to Interstate 10 in an area considered to possess the optimal habitat for the species (Guyer et al., 2015). The species is also documented from salt marsh habitats near the mouth of the West Pascagoula River distributary (MS) and from Horn Island in Mississippi Sound (Leary et al., 2008).

There are ten red-bellied turtle populations, named based on watershed occupancy, including four populations in Mississippi (Pascagoula River, Bellefontaine, Old Fort Bayou, and Tchoutacabouffa River) (USFWS, 2018). The Mississippi populations typically are found in shallow areas of slow moving fresh to brackish water possessing abundant submerged aquatic vegetation, often fringed by expansive brackish marsh (Leary et al., 2008). Recognized threats to red-bellied turtles include habitat loss and degradation (Guyer et al., 2015; USFWS, 2018; 2019). Adult mortality from entanglement with gill nets, hoop nets, and crab traps is cited, as well as collisions with boat propellers. Reduced recruitment occurs through predation of eggs and hatchlings by feral swine, raccoons, fish, crows, and fire ants. No critical habitat is designated for this species.

The Project site and much of the immediate vicinity is industrialized waterfront lacking areas of the submerged aquatic vegetation required as forage for this species. Like all emydid turtles, red-bellied turtles nest in uplands. The Project site does not have basking or nesting habitat for red-bellied turtles. Wandering individuals could potentially occur at the Project site as accidental waifs.

Gopher Tortoise

Gopher tortoise is a large terrestrial turtle restricted to upland sandhill habitats within the Gulf Coastal Plain and adjacent Piedmont ecoregions ranging from southeast Louisiana east across the northern Gulf Coast to southern South Carolina. Gopher tortoise is a common inhabitant of fire maintained upland sandhill and longleaf pine communities containing a lush herbaceous groundcover and little woody cover (Aresco and Guyer, 2004). Significant declines in the western portions of the gopher tortoise's range prompted the USFWS to list populations occurring in southwestern Alabama (three counties), southern Mississippi (19 counties) and southeastern Louisiana (three parishes) as a threatened species under the ESA in 1987. Reasons for the tortoise's decline include continued habitat loss due to development and fire suppression, habitat fragmentation, human predation, and declining densities of remaining populations (Ernst et al., 1994; Ashton and Ashton, 2008). Suitable habitat for this species does not exist in the Project area.

Eastern Black Rail

The Eastern subspecies of black rail was designated as Threatened on October 7, 2020. Black rail is considered rare in spring and occasional in other seasons in the Gulf Coast region. Black rails prefer damp soils in relatively drier areas of salt, brackish, and freshwater marshes, and partially flooded fields and meadows. They often occur near marsh edges where thin-stemmed emergent vegetation such as rushes, cordgrasses, sedges, and pickleweed are present (Eddleman et al., 1994). States in the southeastern U.S., including Mississippi, either do not have a history of supporting Eastern black rails consistently or are considered to be on the peripheries of known breeding areas (USFWS, 2020). Suitable habitat for this species does not exist at the Project site.

Piping Plover

Piping plover is common in winter and also spring and fall migration (starting in July) in the general vicinity of the Project. Suitable foraging habitat for piping plover consists of mudflats, beaches, and tidal wet sand areas, which do not exist at the Project site. The nearest critical wintering habitat unit for piping plover is at Round Island, approximately 5 miles south of the Project site, and at the North and South Rigolets, approximately 7 miles to the east (**Figure 2**). Critical habitat also exists on the Mississippi mainland beaches and barrier islands. A very narrow sand shoreline beach lies along the western edge of Singing River Island, but due to its extreme narrow width, plovers are not expected to utilize this feature.

Rufa Red Knot

Suitable foraging habitat for red knot consists of mudflats, beaches, and tidal wet sand areas. No critical habitat has been designated for red knot. This species occurs in the general Project vicinity in small numbers during fall and spring migration. Suitable habitat for red knot does not exist at the Project site. Proposed critical habitat is located on Cat Island and Ship Island (**Figure 2**).

Tricolored Bat

Tri-colored bat is proposed endangered under the ESA. This once common species is wide ranging across the eastern and central United States and portions of southern Canada, Mexico and Central America (USFWS, 2023). During the winter, tricolored bats are often found roosting in road-associated culverts where they exhibit shorter torpor bouts and forage during warm nights. During the spring, summer, and fall, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves of live or recently dead deciduous hardwood trees, but may also be found in Spanish moss, pine trees, and occasionally human structures. Tricolored bats face extinction due primarily to the rangewide impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. White-nose syndrome has caused estimated declines of more than 90 percent in affected tricolored bat colonies across most of the species' range (USFWS, 2023). Suitable habitat for this species does not exist at the Project location.

Monarch Butterfly

A 12-month finding published in the Federal Register on December 17, 2020 (85 FR 81813) held a determination that the monarch butterfly (*Danaus plexippus*) warrants listing as an endangered or threatened species under the ESA. Consideration of the listing action by USFWS remains warranted and under review (USFWS, 2023). Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (*Asclepias* spp.), and larvae emerge after two to five days. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live six to nine months. In many regions where monarchs are present, monarchs breed year-round. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period. In North America there are western and eastern populations (USFWS, 2023).

4.2 ESA-listed Species Potentially Affected by the Project

4.2.1 Sea Turtles

There are five species of sea turtles that potentially occur in or near the Project area. Loggerheads (*Caretta caretta*) are the most abundant turtle on the northern Gulf shelf (Lohofener et al., 1990;

Mullin and Hoggard, 1998; Davis et al., 2000). Leatherbacks (*Dermochelys coriacea*) are abundant in the northern Gulf, but primarily in deep waters of the continental slope and beyond (Hansen et al., 1996; Mullin and Hoggard, 1998); however, they also occur on the shelf in smaller numbers (Evens et al., 2021). Green (*Chelonia mydas*) and hawksbill (*Eretmochelys imbricata*) turtles are typically inshore species that may occur in the project area, but little is known of their abundance in coastal Mississippi. In recent years, Kemp's ridley turtles (*Lepidochelys kempii*) appear to be the most common sea turtle encountered along the Mississippi Gulf Coast (MDMR, 2026).

Large-scale surveys of sea turtle abundance and distributions in the Gulf (e.g., Davis et al., 2000) have not included Mississippi Sound, so turtle densities in the immediate Project area are largely unknown. Estimated densities of sea turtles in shelf areas seaward of the Mississippi barrier islands have been low (McDaniel et al., 2000). Foraging sea turtles, most likely juveniles, may occur in Mississippi Sound during Project-related activities.

Loggerhead and Kemp's ridley sea turtles primarily nest on Gulf-fronting beaches on the barrier islands, outside the immediate Project area. In 2024, a total of 28 nests (7 loggerhead and 21 Kemps) were documented in Mississippi, while in 2025, a total of 13 loggerhead nests were documented (Southeast Regional Sea Turtle Network, 2026). No nesting events for Kemps ridley sea turtles had been confirmed in Mississippi prior to 2022 (Madrigal et al., 2025). Annual nesting season for loggerheads is from May to October. Nesting season for Kemp's ridley turtles is from April through August of each year.

Sea turtle nesting in the state of Mississippi is relatively rare (Madrigal et al., 2025). There are far fewer nests annually in Mississippi compared to other identified habitat recovery units and nesting locations of the NWA loggerhead turtle population (NMFS and USFWS, 2008). The loggerhead recovery plan (NMFS and USFWS, 2008) indicated that about 80% of loggerhead nesting in the southeast U.S. occurs in six counties on the southeast coast of Florida (Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward). Critical habitat for loggerheads includes Gulf-fronting beaches along Petit Bois Island and Horn Island in Mississippi (**Figure 2**). No critical habitat has been designated for Kemp's ridley sea turtles. Green sea turtle and hawksbill critical habitat is designated in Puerto Rico.

4.2.2 West Indian Manatee

West Indian manatee is protected under both the ESA and the Marine Mammal Protection Act of 1972. Manatee sightings in Mississippi, including the Project area, have been increasing in recent years as they extend their presence farther west of Florida during warmer months. **Table 3** lists manatee sightings in the area between Bayou Casotte and Bell Fontaine Point and into upstream areas of the lower Pascagoula River drainage, recorded from 2021 to 2025 (Dauphin Island Sea Lab's Manatee Sighting Network, 2026). There is no designated critical habitat for manatees in Mississippi.

Manatees are opportunistic herbivores, consuming mainly submerged aquatic vegetation in marine, estuarine, and freshwater systems. There is no suitable forage habitat for manatees at the Project site, but it is possible manatees could transit the Project area during maintenance dredging operations.

Table 3. Manatee sightings recorded from 2021 to 2025 in proximity to the Project site (Source: Dauphin Island Sea Lab’s Manatee Sighting Network, 2026).

Year	Number of Sightings	Months
2025	14	June, July Aug. Oct., Nov.
2024	5	April, May July, Oct., Nov.
2023	6	April, June, Aug., Sept., Oct.
2022	14	June, July, Aug. Oct.
2021	4	Feb., May, Aug.

Data obtained from the Dauphin Island Sea Lab’s Manatee Sighting Network at <http://manatee.disl.org/sighting/map> as of July 14, 2026.

4.2.3 Gulf Sturgeon

Gulf sturgeon is an anadromous fish, with reproduction occurring in fresh water. Sturgeons are thought to return to breed in the river system in which they hatched, and genetically distinct subunits of Gulf sturgeon have been identified throughout the Gulf of America (Stabile et al., 1996; Dugo et al., 2004). In Mississippi, the Pascagoula and Pearl Rivers support a western group, distinct from the eastern assemblages of the Escambia, Yellow, Choctawhatchee, and Apalachicola River drainages (Dugo et al., 2004).

Sturgeons migrate from the estuaries, bays, and the Gulf into coastal rivers in early spring (i.e., March through May) (Foster and Clugston, 1997; Fox and Hightower, 1998; Sulak and Clugston, 1999; Fox et al., 2000). In the Pascagoula drainage, spawning Gulf sturgeons congregate in a holding area in the lower portion of the Pascagoula River and Big Black Creek (river kilometers (rkm) 57-68] and near Cumbest Bluff (rkm 40) (Heise et al., 2005). After spawning, Gulf sturgeons remain in rivers, fasting until fall (Mason and Clugston 1993).

Sturgeons initiate their migration out of fresh water from late-September to mid-October, coincident with shorter day length, falling water temperature (mean = 23.7°C, range 21–26°C), and elevated river flow (Heise et al., 2005). Sturgeon occupancy patterns indicate that adults move quickly through the Pascagoula system spatially and seasonally, compared to longer but more spatially and temporally variable occupancy for juveniles and sub-adults in both migration seasons (Peterson et al., 2013).

Most Gulf sturgeon feeding takes place in the Gulf and its estuaries, where active foraging replaces depleted energy reserves. Sturgeons feed opportunistically on a variety of benthic invertebrates (Mason and Clugston, 1993). Adult sturgeons over the age of 5 or 6 years overwinter in marine waters, especially near Gulf barrier islands (Rogillio et al., 2007; Ross et al., 2009; Greenheck et al., 2025). Juveniles may remain in the estuary during winter to feed (Fox and Hightower, 1998; Sulak and Clugston, 1998; Brogdon et al., 2024). Recent telemetry studies detected eastern population sturgeons (Escambia, Blackwater, Yellow, and Choctawhatchee rivers) overwintering near Mobile Bay (Vick et al., 2018) and a study by Greenheck et al. (2023) detected a total of 210 adult and subadult Gulf sturgeons from both eastern (n=113) and western (n=97) populations overwintering for up to 4 months in the Mobile Bay estuary.

Greenheck et al. (2025) assessed the occurrence of Gulf sturgeon at Ship Island prior to and after the closing of Camille Cut, a restoration effort which occurred between 2017 and 2020. In the pre-restoration study, subadult and adult GS from west and east river populations were found to occupy Dog Keys Pass, located between the eastern tip Ship Island and western tip of Horn Island, more than

in Camille Cut. The post-restoration findings indicated increased use north of the former cut in Mississippi Sound and decreased use of Dog Keys Pass. Post-restoration data indicated cyclical movement patterns and mirrored available migration pathways given the change in island configuration.

Critical Habitat for Gulf sturgeon exists at the Project site (**Figures 2 and 3**), and potential habitat effects of the Project are discussed in detail in **Section 5.0**.

4.2.4 Marine Mammals

Marine mammals are protected under the Federal Marine Mammal Protection Act (MMPA). Up to 28 cetacean species occur in the northern Gulf, including 7 species of mysticetes (baleen whales) and 21 species of odontocetes (toothed whales) (Jefferson and Schiro, 1997). Endangered mysticetes are likely to be represented in the Gulf only by occasional strays (Jefferson and Schiro, 1997), and because these large whales prefer deep waters well offshore of the continental shelf (Davis et al., 1998) they would be very unlikely to occur in the project area. Sperm whales are common in the northern Gulf and particularly favor an area just south of the Mississippi River mouth (Hansen et al., 1996; Mullin and Hoggard, 1998). However, these large whales also prefer deepwater habitats and would be very unlikely to occur in the project area.

Other than bottlenose dolphin (*Tursiops truncatus*) and West Indian manatee, and to a lesser extent Atlantic spotted dolphin (*Stenella frontalis*), marine mammals do not typically occur in estuarine waters. Incidental takes of any marine mammals (listed or non-listed) are not authorized through the ESA Section 7 process.

4.3 Effects Analysis

4.3.1 Effects on Sea Turtles

Hydraulic pipeline and bucket dredging are not known to take sea turtles, which are highly mobile and would be prone to avoid the area during maintenance dredging. Normal behavior patterns of sea turtles are not expected to be significantly disrupted by the dredging activity as the project area is not known to serve as a feeding, breeding, migratory, or sheltering area for sea turtles.

Leatherbacks are pelagic feeders and the modification of the benthos through maintenance dredging will not affect pelagic resources. Hawksbill and green sea turtles are specialist feeders that target sponges and seagrass or macroalgae. Since the existing environment at the project site does not support those food resources, they are unlikely to be affected by the Project. Potential habitat and food availability effects of the project on Kemp's ridley and loggerhead sea turtles will be insignificant, given the current and anticipated post-dredging benthic condition in the basins (See **Section 5.2.4**). The project is not expected to negatively affect sea turtle foraging habitat.

The Project dredging phase potentially could affect transient juvenile sea turtles, which are the most likely life stage to be affected by inshore vessel traffic. The potential for interaction between any of the Project's activities and sea turtles is low. Consultations will be made with NOAA NMFS PRD and the USFWS regarding the necessity for implementation measures contained in Sea Turtle Construction Conditions (**Appendix B**), to ensure avoidance of negative impacts to sea turtles.

4.3.2 Effects on West Indian Manatee

Any manatees encountered during Project activities would be transient, most likely during summer or fall. The potential presence of migrating manatees in the Project area may require that observers be used during dredging, and that dredging temporarily cease during the presence of any manatees in the immediate vicinity. The risk of adverse impacts to manatees by maintenance dredging or dredge-spoil placement operations is low. Consultations will be made with NOAA NMFS PRD and the USFWS regarding the necessity for implementation of all or part of the Guidelines for Activities in Proximity to Manatees and Their Habitat (**Appendix C**), to ensure avoidance of negative impacts to this species.

4.3.3 Effects on Gulf Sturgeon

Temporary displacement of individual Gulf sturgeons may result from the disturbance of dredging activities. Potential impacts would be expected to be limited to incidental contact during foraging, and subsequent avoidance by sturgeons for the duration of maintenance dredging. Sturgeons are expected to avoid active work areas. Following the completion of dredging and placement activities, any displaced fishes would be expected to resume normal use of the area.

Dredging and filling activities will remove surficial bottom habitat from the existing dredged basins and create temporary turbidity and sedimentation, although current plans are to employ hydraulic dredging, which will reduce the amount of turbidity and sedimentation produced. Removing bottom habitat will remove benthic organisms potentially preyed upon by Gulf sturgeons.

After dredging, the benthic macroinvertebrate community is likely to quickly become re-established, due to the resilience of estuarine benthos. Benthic community composition post-dredging is likely to be similar to the current condition, due to the sedimentary and hydrologic conditions in dredged sites. Macroinvertebrates common to Mississippi Sound sediments will continue to dominate the benthos in the dredged areas.

Consultations will be made with NOAA NMFS PRD and the USFWS regarding the necessity for the implementation of reasonable and prudent measure to ensure avoidance of negative impacts to Gulf sturgeons.

4.3.4 Effects on Marine Mammals

In addition to West Indian manatee, only two cetacean species commonly occur in Gulf coastal waters: the Atlantic spotted dolphin and the bottlenose dolphin (Davis et al., 1996, 1998). The Project could potentially affect individuals of these three species; however, the nature of the proposed dredging suggests a low probability of interaction between marine mammals and construction activities. Marine mammals are unlikely to be adversely affected by hydraulic pipeline dredging or dredge spoil disposal operations.

4.3.5 Vessel Collision, Water Quality, and Noise Effects on Protected Species

Individuals of protected species that move into the immediate construction area would potentially be impacted by collisions with vessel traffic related to the Project. Consultations will be made with NOAA NMFS PRD and the USFWS regarding the necessity for the implementation of reasonable and prudent measure to ensure avoidance of vessel collisions on protected species.

Oiling due to fuel spills is unlikely, given the nature of the Project. Best management practices will be properly implemented, monitored, and maintained to prevent, or at least minimize, negative impacts to water quality.

The project area is surrounded by shoreline industrial activities and open water activities, including vessel traffic. Current sources of noise include existing industrial and shipping activities that are active year-round. The USACE (2019) addressed dredging noise impacts to aquatic fauna in the Pascagoula Harbor. In general, their conclusion was that it is unlikely that dredging noise will cause injury to fish (e.g., Gulf sturgeon) or other wildlife (e.g., sea turtles or marine mammals) in the area. Gulf sturgeon, sea turtles, and marine mammals in the Project area will have the mobility to avoid the temporary noise associated with maintenance dredging, and if they avoid the area, they are expected to return when the dredging is completed. Considering the limits on propagation of underwater noise for shallow water depths and soft bottom conditions within the project area, the tendency of marine species to avoid anthropogenic noise, and previous exposure to maintenance dredging activities, any noise impacts from the Project are expected to be minor and not significant.

5.0 GULF STURGEON CRITICAL HABITAT

5.1 Critical Habitat Units and Primary Constituent Elements

In the northern Gulf, fourteen areas (units) are designated as Gulf sturgeon critical habitat. The proposed maintenance dredging will occur at the terminus of the lower eastern distributary of the Pascagoula River system (Unit 2) and northern extent of Critical Habitat Unit 8 in Pascagoula Bay. The portions of Critical Habitat Units 2 and 8 as they relate to the Project location are presented in **Figure 3**.

Critical habitat determinations focus on those physical and biological features defined as primary constituent elements (PCEs) that are essential to the conservation of a species (50 CFR 424.12). Federal agencies must ensure that their activities are not likely to result in the destruction or adverse modification of the PCEs within defined critical habitats. Therefore, proposed actions that may impact designated critical habitat require an analysis of potential impacts to each PCE.

The PCEs identified as essential for the conservation of the Gulf sturgeon consist of:

1. Abundant food items, such as detritus, aquatic insects, worms, and/or mollusks, within riverine habitats for larval and juvenile life stages; and abundant prey items, such as amphipods, lancelets, polychaetes, gastropods, mollusks and ghost shrimp, isopods, and other crustaceans, within estuarine and marine habitats and substrates for subadult and adult life stages;
2. Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone, or hard clay;
3. Riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed depths, believed necessary for minimizing energy expenditures during freshwater residency and possibly for osmoregulatory functions;
4. A flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging, and for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larval staging;

5. Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages;
6. Sediment quality, including texture and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and
7. Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (e.g., an unobstructed river or a dammed river that still allows for passage).

Four PCEs are present in Critical Habitat Units 2 and 8 at the Project site: abundant prey items for subadults and adults (1), water quality (5), sediment quality (6), and safe and unobstructed migratory pathways (7). The PCEs related to riverine critical habitat are not applicable to the Project.

As stated in the Final Rule designating Gulf sturgeon critical habitat (68 FR 13369), activities that may destroy or adversely modify critical habitat, and applicable to the Project, include:

- Actions that would appreciably reduce the abundance of estuarine and marine prey for juvenile and adult Gulf sturgeon, within a designated critical habitat unit, such as dredging and dredged material disposal;
- Actions that would alter water quality within a designated critical habitat unit, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, such that it is appreciably impaired for normal Gulf sturgeon behavior, reproduction, growth, or viability, including dredging and dredged material disposal;
- Actions that would alter sediment quality within a designated critical habitat unit such that it is appreciably impaired for normal Gulf sturgeon behavior, reproduction, growth, or viability, such as dredged material disposal or release of chemical or biological pollutants that accumulate in sediments; and
- Actions that would obstruct migratory pathways within and between adjacent riverine, estuarine, and marine critical habitat units, such as dredging and other physical or chemical alterations of channels and passes that restrict Gulf sturgeon movement.

5.2 Project Effects on Gulf Sturgeon Critical Habitat

This section analyzes potential impacts on the relevant PCEs in sturgeon Critical Habitat Unit 2 and Unit 8. The four PCEs potential affected by the Project include water quality, migratory pathways, sediment quality, and abundant prey items.

5.2.1 Effects on Water Quality

Water quality impacts from dredging are expected to be temporary and minimal, with suspended particles settling out within a short time frame without measurable effects on water quality. There may be short-term physical effects of dredging related to degraded hydrology in recently excavated sites, including anoxic, hypoxic, or noxious conditions, which may temporarily inhibit faunal colonization. Dredging can cause changes in surface (sediment-water interface) and subsurface (pore water) oxygen concentrations. Since estuarine sediments are anoxic at some depth below the sediment-water interface (Fenchel, 1969), dredging often removes the upper, oxygenated strata. In addition, naturally occurring sulfide and ammonia may be mobilized by dredging (Mayer et al., 1991). Post-larvae have been shown to avoid recently disturbed sediments (Woodin et al., 1995; Marinelli and Woodin, 2002; Engstrom and Marinelli, 2005), until benthic and water column conditions equilibrate to ambient conditions.

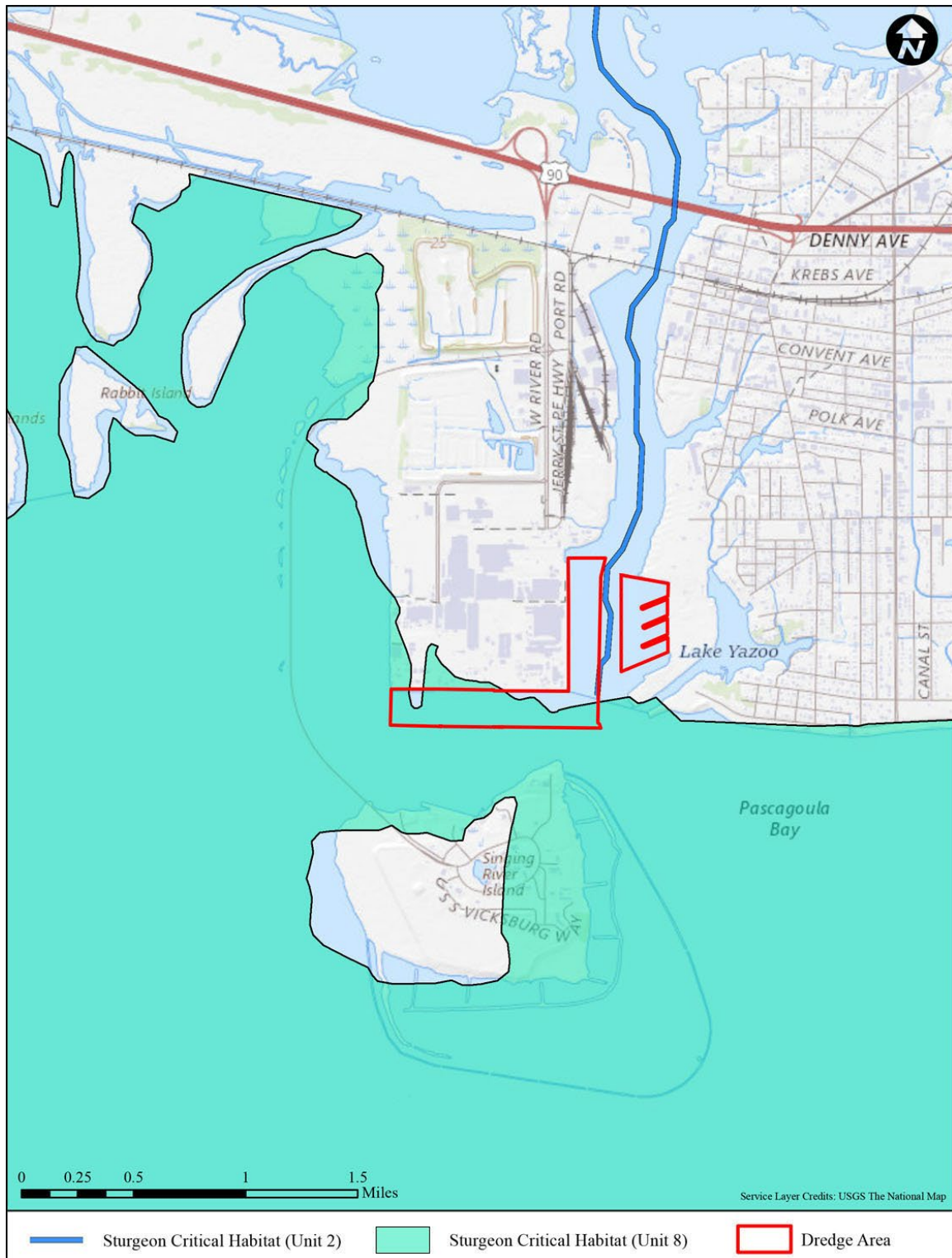


Figure 3. Gulf sturgeon Critical Habitat Units 2 and 8 as they relate to the Project location.

Minor increases in suspended sediments above background are anticipated during dredging operations. According to the USACE (2019), based on historical analysis of turbidity associated with dredging in the Pascagoula Harbor area and other areas along the Mississippi coast, turbidity levels are not significantly altered by dredging beyond a very localized area around the dredging activity. The USACE's historical review of turbidity compliance sampling data for dredging events in Mississippi Sound shows no violations of the MDEQ state water quality standards beyond the 750-ft limit down-current of the dredging. Although localized minor increases above background sediment load are anticipated during Project dredging operations, it is not expected that dredging would cause turbidity limits (50 NTU increase) to be exceeded beyond a 750-ft radius. Adherence to MDEQ water quality standards will minimize adverse turbidity effects.

Gulf sturgeon critical habitat is not expected to be significantly impacted by turbidity and sedimentation. Temporarily affected areas would be fully available to sturgeons after cessation of dredging. Dredged sites often experience intermittent hypoxia during warmer months, due to their depth compared to adjacent non-dredged areas. No long-term changes in temperature, salinity, pH, hardness, oxygen content, or other chemical characteristics are expected to result from the Project.

5.2.2 Effects on Migratory Pathways

Subadult and adult Gulf sturgeons move between the Pascagoula River watershed (Unit 2) and estuarine and marine feeding areas in Mississippi Sound and the Gulf (Unit 8). Sturgeons enter rivers from February to April and reproductive fish move to spawning areas (Foster and Clugston, 1997, Fox et al., 2002). They initiate their migration out of fresh water from late-September to mid-October (Heise et al., 2005).

Havrylkoff et al. (2012) investigated the within-river routes Gulf sturgeon take through the lower Pascagoula River downstream of the point where it splits (rkm 23) into the east and west distributaries. Estimated residence times (days) suggest that the western distributary mouth was more highly used by Gulf sturgeon than the eastern mouth, at the Project site (Havrylkoff et al., 2012), during both seasonal migrations between upriver and offshore habitats. The western distributary appears to represent the main entrance point utilized by Gulf sturgeon, to some extent due to natural marsh edges altered to hardened surfaces at the eastern mouth (Havrylkoff et al., 2012). According to Peterson et al. (2013), reduced use of the eastern distributary habitat by sturgeons is based on synergistic effects of urbanization and industrialization such as bulkheading, channelization, dredging and related maintenance activities, and beach re-nourishment, all of which occur almost exclusively in the east zone of the estuary. Project maintenance dredging will not alter sturgeon migratory pathways and is not likely to adversely affect individual sturgeons.

5.2.3 Effects on Sediment Quality

Changing the sediment character could appreciably impair normal Gulf sturgeon behavior; additionally, it could alter the benthic community, potentially reducing the availability of prey items. Substratum modification can impact prey availability and abundance, as well as sturgeon feeding efficiency. Ross et al. (2009) found that adult Gulf sturgeon were found at locations exhibiting predominantly coarse to fine sand and shell fragments. The existing benthic habitat in the dredged basins consists of unconsolidated, mixed sediments, likely with a greater proportion of silt and clay than adjacent non-dredged areas. After cessation of each maintenance dredging interval, sediment conditions in the dredged areas are expected to be functionally equivalent to the current condition (See **Section 5.2.4**). The Project is unlikely to adversely modify the sediment quality of Gulf sturgeon critical habitat.

5.2.4 Effects on Gulf Sturgeon Prey Abundance

The project site is located in Pascagoula Bay (Unit 8) at the terminus of the East Pascagoula River (Unit 2). Most sturgeon feeding takes place in Gulf waters and adjacent estuaries, including Mississippi Sound. Critical Habitat at the Project location provides juvenile, subadult, and adult sturgeon feeding habitat for sturgeons from the Pascagoula River sub-population, and potentially sturgeons from the Pearl River sub-population.

In analyzing the probable effects of the Project on Gulf sturgeon prey abundance, this section reviews benthic community structure in Mississippi Sound, recovery of benthos in dredged areas, known sturgeon prey items, and the potential sturgeon prey in the Project dredging areas.

Benthic Community Structure

The dominant forcing functions affecting macroinvertebrate populations in unconsolidated soft sediments are predominantly the prevailing hydrodynamic, hydrologic, and sedimentary regimes. In shallow subtidal sediments, community structure is determined largely by disturbances and physical stresses (Probert, 1984; Hall, 1994; Thrush et al., 1996). The macroinfauna of the northern Gulf occur in distinct assemblages associated sedimentary habitat and depth (Dames & Moore, 1979; Flint and Holland, 1980; Shaw et al., 1982; Harper, 1991). Mississippi Sound studies indicate three major sedimentary habitat regimes supporting different macroinvertebrate assemblages: 1) mud; 2) mixed sediment; and 3) sand (BVA, 1985; Shaw et al., 1982).

Generally, shallow subtidal and inner shelf infaunal assemblages are dominated by polychaetes in terms of overall abundance and numerically dominant taxa. Other important groups include amphipods and bivalves. Shaw et al. (1982) performed a large baseline survey that included the barrier strand areas of Alabama and Mississippi out to Gulf depths of 30 meters. Infauna of the clean sand habitat in tidal passes between the barrier islands, where adult Gulf sturgeons often forage, included the archiannelid *Polygordius*, lancelet *Branchiostoma caribaeum*, polychaetes *Mediomastus* spp. and *Spiophanes bombyx*, and the burrowing amphipod *Acanthohaustorius*.

Different assemblages occur along nearshore areas in the northern Sound, which have higher clay and silt content (Shaw et al., 1982). Pre- and post-dredging benthic surveys performed during environmental monitoring conducted for the Gulf LNG Terminal ship basin at Bayou Casotte, approximately 3 miles east of the HII Project site, found the numerically dominant taxa included the polychaete *Heteromastus filiformis* and bivalve *Gemma gemma*, which were collected at depths of 1.0 to 3.6 m (3.3 to 11.8 ft), in sediments of sand mixed with silt and clay (BVA, 2010; 2011; 2012). Other abundant polychaetes included *Aricidea* spp., and *Mediomastus ambiseta*.

Recovery of Benthic Biota

Dredging removes sedimentary habitat along with organisms incapable of avoiding the dredge, resulting in drastic reductions in the number of individuals, number of species, and biomass. However, dredged sites in estuarine systems tend to be rapidly recolonized by macroinvertebrates, which recruit via larval settlement and post-larval migration across the seabed.

Rates of recolonization have been measured in studies of disturbed soft bottom habitats (Oliver et al., 1977; Van Dolah et al., 1984; Newell et al., 1998) and in studies using defaunated sediment (McCall, 1977; Simon and Dauer, 1977; Rhoads et al., 1978; Santos and Simon, 1980). All of these studies

showed that recolonization of sediments generally occurs very rapidly. Initial stages of recolonization typically involve primarily opportunistic species, and longer-lived taxa may colonize after the initial stages (Rhoads and Germano, 1982; 1986). The initial pioneering community includes small, densely populated organisms which appear within days of a natural or anthropogenic disturbance (Rhoads et al., 1978).

The most prevalent populations in coastal areas are resilient to benthic disturbance (Van Dolah et al., 1984). Initial colonizer species that occur in the Project area include polychaetes such as *Mediomastus ambiseta*, *Paraprionospio pinnata*, and *Streblospio benedicti*, and the bivalve *Mulinia lateralis*, (Grassle and Grassle, 1974; McCall, 1977). These taxa are abundant throughout estuaries of the eastern United States and Gulf of America (Hyland et al., 1998), including the Project area (BVA, 1985; Shaw et al., 1982).

Sturgeon Prey Items

Both adult and subadult Gulf sturgeons are known to lose up to 30% of their total body weight while in freshwater and subsequently compensate the loss during winter feeding in estuarine and marine areas (Morrow et al., 1998; Sulak and Clugston, 1999; Ross et al., 2001). Upon exiting the rivers, sturgeons concentrate around the mouths of their natal rivers in lakes and bays. These areas are very important for sturgeons as they offer the first foraging opportunity for the Gulf sturgeon exiting the rivers. During the early fall and winter, immediately following downstream migration, Gulf sturgeons are most often located in nearshore (depth less than 20 ft) sandy areas that support burrowing macroinvertebrates, where the fish are presumably foraging (Craft et al., 2001; Parauka et al., 2001; Fox et al., 2002).

Use of estuaries by foraging adults is limited primarily to the period from November to the end of April (Huff, 1975; Carr et al., 1996; Harris et al., 2005). Telemetry data has documented adult sturgeons from the Pearl River and Pascagoula River subpopulations migrating from their natal bay systems to Mississippi Sound, and moving along the barrier islands and barrier island passes during winter (Ross et al., 2003; Ross et al., 2009).

When foraging, sturgeons tend to feed on locally abundant prey. Gulf sturgeon have been described as opportunistic and indiscriminate benthivores; their guts generally contain benthic marine invertebrates including amphipods, lancelets, polychaetes, gastropods, shrimp, isopods, mollusks, and crustaceans (Huff, 1975; Mason and Clugston, 1993; Carr et al., 1996; Fox et al., 2002). In the Suwannee River estuary where diet information is perhaps best understood, the diet is dominated by brachiopods (*Glottidia pyrimidata*), although amphipods (*Ampelisca* spp.), brittle stars, and lancelets also occur (Huff, 1975, Mason and Clugston, 1993, Murie and Parkyn, 2001). In Choctawhatchee Bay, a major sturgeon diet component was ghost shrimp (*Lepidophthalmus louisianensis*), as well as amphipods (Fox et al., 2002). Ross et al. (2009) found that adult Gulf sturgeon near the Mississippi barrier islands were found at locations exhibiting a benthic community dominated by lancelets, sand dollars, amphipods, and bivalves.

Potential Gulf Sturgeon Prey in the Action Area

Research indicates that Gulf sturgeons show a preference for sandy shoreline habitats (Fox and Hightower, 1998; Fox et al., 2002; Ross et al., 2009). In Mississippi, sub-adult and adult Gulf sturgeon overwinter in the Mississippi Sound, congregating near the passes between barrier islands, with a benthic community dominated by lancelets, sand dollars, amphipods, bivalves, and various polychaetes (Ross et al., 2009). Habitats used by Gulf sturgeon in the vicinity of the Mississippi Sound barrier

islands tend to have a sand substrate and an average depth of 1.9 to 5.9 m (6.2 to 19.4 ft). Other nearshore locations where sturgeons are often located (via telemetry and tag returns) consist of unconsolidated, fine-medium grain sand habitats, including natural inlets and passes that are known to support Gulf sturgeon prey items (Ross et al., 2009).

Estuary and bay non-vegetated habitats having a preponderance of natural silts and clays supporting sturgeon prey and the Gulf sturgeon found in these areas are assumed to be utilizing these habitats for foraging. Specifics of the use of estuarine around the Pascagoula River by sturgeon populations remain poorly understood. The west mouth of the Pascagoula River has been found to support tagged sturgeons (e.g., Peterson et al., 2013), including an area near Rabbit and Twin Islands (Murphy and Skaines, 1994).

The dredged basins at the Project site likely have finer sediments and higher organic content compared to nearby natural bay bottom. At the Gulf LNG ship basin, macroinfaunal assemblages at side-slope stations (13 to 28 ft deep) were different from the deepest portions of the basin (approx. 44 ft deep), with both habitats supporting a different benthic community than nearby non-dredged areas (BVA, 2010; 2011; 2012). The deep basin stations had lower species richness and numerical dominance by the opportunistic and ubiquitous polychaete *Paraprionospio pinnata*, during all three years of post-dredging surveys. The HII Project dredging areas likely have a similar benthic community composition to nearby dredged sites, and largely devoid known Gulf sturgeon prey items generally associated with sand environments.

5.2.5 Summary of Effects on Gulf Sturgeon Critical Habitat

Water quality impacts from dredging are expected to be temporary and minimal, with suspended particles settling out within a short time frame without measurable, persistent effects on water quality. Dredging activities will not constitute a barrier to migrating or foraging sturgeons. Invertebrate prey, sediment characteristics, water quality and depth in the Project basins is different from characteristics observed at known Gulf sturgeon feeding sites.

Gulf sturgeon prey abundance will be temporarily impacted by the Project. It is well-documented that benthic macroinvertebrate assemblages recover quickly from physical disturbance in shallow coastal environments. The recovered post-dredging community composition is expected to be similar to the pre-dredging (current) condition, given the hydrologic and sediment characteristics and a relatively quiescent hydrodynamic environment which typically occurs in dredged areas.

6.0 CUMULATIVE EFFECTS

Section 7 regulations of the Endangered Species Act require consideration of cumulative effects in formulating biological assessments (50 CFR 402.02). Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this analysis supporting the Project.

Mississippi Sound has been subject to natural and human disturbances historically. Natural disturbances include westward migration and erosion of barrier islands and storm-induced coastal erosion. Major human modifications include massive seawall construction, and periodic freshwater influxes from spillway openings, and deep-draft channel dredging. Past or Present Actions with environmental effects for the Pascagoula Harbor, identified in a USACE EIS (2019), include:

- Chevron Pascagoula Base Oil Facility
- Gulf LNG Clean Energy Project
- Mississippi Phosphates
- Maintenance Dredging
- Beneficial Use Sites
- Pascagoula Bayou Casotte Terminals
- Pascagoula Harbor Navigation Channel
- Bayou Casotte Navigation Channel and Cyclical Maintenance Dredging

The Gulf sturgeon critical habitat designation includes protection of estuarine and marine habitats surrounding riverine habitats. Sturgeon critical habitat Unit 8 therefore includes not only the waters of Mississippi Sound, but also adjacent emergent tidal marshes and mudflats, which comprise highly productive fishery habitat for sturgeon prey. The mainland Mississippi shoreline once consisted of extensive tidal marshes and flats. Land loss due to wave action and storms left the northern Sound shoreline exposed to the seawalls built in the early 1900s and the U.S. Army Corps of Engineers later pumped in millions of cubic yards of sand to create the artificial beaches as a structural shield for the seawall. As a result, most of the natural marshes and flats no longer exist.

Periodic opening of the Bonnet Carré Spillway diverts Mississippi River floodwaters to protect New Orleans by attenuating floodwaters, sending large amounts of freshwater and agricultural pollutants directly into the Lake Pontchartrain Basin and Mississippi Sound. This influx can disrupt the natural brackish ecosystem, causing distinct ecological impacts to benthic ecosystems. An extended, 123-day opening in 2019 created near-zero salinity conditions in the Sound, leading to near-total mortality and zero landings for Mississippi commercial harvesters. In addition, the event caused harmful algal blooms and greatly reduced dissolved oxygen in bottom waters, resulting in defaunation of benthic prey for wildlife including Gulf sturgeon. In 2023, the U.S. District Court for the Southern District of Mississippi ordered the U.S. Army Corps of Engineers to formally consult with the National Marine Fisheries Service to evaluate the spillway's ecological damage and find ways to mitigate or avoid future harm to Mississippi Sound.

Maintenance dredging in Pascagoula Harbor occurs on an as-needed basis, typically every 18 to 36 months, to remove approximately 2,000,000 cubic yards of material. Placement is typically directed to the Ocean Dredge Material Disposal Site (ODMDS) south of Horn Island. The most recent Pascagoula Harbor dredging was performed in the spring of 2026.

The Project's contribution to the cumulative impacts already present in the Pascagoula Harbor, including the HII facility, would be negligible. Impacts from Project maintenance dredging will be short term, especially in comparison to the large-scale maintenance dredging required for the federal Bayou Casotte Channel and in Pascagoula Channel segments. Maintenance dredging material will be subject to the same disposal options considered for previous HII facility dredging and will not affect the Gulf Sturgeon Critical Habitat.

7.0 CONCLUSIONS

Consultations will be made with NOAA NMFS PRD and the USFWS regarding the necessity for the implementation of any reasonable and prudent measures to ensure avoidance of negative impacts to ESA listed species and marine mammals, including vessel collisions, dredging noise, and water quality. Maintenance dredging will only be conducted in an approved manner for protection of all ESA species, critical habitat, and marine mammals.

Based upon the information presented above, the conclusion is that water quality, migratory pathways, sediment quality, and the abundance of Gulf sturgeon prey will not be impacted by the Project. No part of the proposed action will adversely modify any of the physical or biological features that were the basis for determining the habitat to be critical, per 50 CFR 402.02. This assessment concludes that maintenance dredging will not reduce the capacity of Critical Habitat Units 2 and 8 to support the Gulf sturgeon's conservation. The Project, as proposed, is not likely to destroy or adversely modify Gulf Sturgeon Critical Habitat. PCEs for Gulf sturgeon currently within the Project facility area are unlikely to be diminished from their current baseline due to the proposed action.

8.0 REFERENCES CITED

- Aresco, M.J., and C. Guyer, 2004. Gopher tortoise (Daudin). pp. 82 – 83 *In* R.E. Mirarchi, M.A. Bailey, T.M. Haggerty, and T.L. Best (eds). Alabama Wildlife. Volume 3. Imperiled Amphibians, Reptiles, Birds and Mammals. The University of Alabama Press, Tuscaloosa.
- Ashton, R.E. & Ashton, P.S. (2008). The Natural History and Management of the Gopher Tortoise *Gopherus polyphemus* (Daudin). Kreiger Publishing Company, Malabar, FL. 288 pp.
- Barry A. Vittor & Associates, Inc. (BVA), 2012. Year 3 Post-Construction Monitoring of Gulf Sturgeon Habitat. Report prepared for the Gulf LNG Energy, LLC, Pascagoula, MS. 11 pp + appendices.
- Barry A. Vittor & Associates, Inc. (BVA), 2011. Year 2 Post-Construction Monitoring of Gulf Sturgeon Habitat. Report prepared for the Gulf LNG Energy, LLC, Pascagoula, MS. 9 pp + appendices.
- Barry A. Vittor & Associates, Inc. (BVA), 2010. Year 1 Post-Construction Monitoring of Gulf Sturgeon Habitat. Report prepared for the Gulf LNG Energy, LLC, Pascagoula, MS. 12 pp + appendices.
- Barry A. Vittor & Associates, Inc. (BVA), 1985. Tuscaloosa Trend Regional Data Search and Synthesis Study (Volume I - Synthesis Report). Final report submitted to Minerals Management Service, Metairie, LA. 477 pp.
- Brogdon, J.N., A. Baer, G. Constant, C.N. Glaspie, M.D. Miner, I.Y. Georgiou, & M.A. Dance, 2024. Variability in estuarine habitat use of a threatened species in the northern Gulf of Mexico: implications for coastal restoration. *Global Ecology and Conservation*, Volume 49: e02766.
- Carr, S.H., F. Tatman, and F.A. Chapman, 1996. Observations on the natural history of the Gulf of Mexico sturgeon (*Acipenser oxyrinchus de sotoi*, Vladykov 1955) in the Suwannee River, southeastern United States. *Ecology of Freshwater Fish*, 5: 169-174.
- Craft, N.M., B. Russell, & S. Travis. 2001. Identification of Gulf sturgeon spawning habitats and migratory patterns in the Yellow and Escambia River systems. Final Report to the Florida Marine Research Institute, Fish and Wildlife Conservation Commission. 19 pp.
- Christmas, J.Y. and C.K. Eleuterius, 1973. Phase II: Hydrology. pp. 75-121, *In* J.Y. Christmas (ed.), Cooperative Gulf of Mexico Inventory and Study, Mississippi. Gulf Coast Research Laboratory, Ocean Springs, MS.
- Dauphin Island Sea Lab's Manatee Sighting Network, 2026. [http://manatee.disl.org/sighting/map as of 07-14-2026](http://manatee.disl.org/sighting/map%20as%20of%2007-14-2026).
- Dames & Moore. 1979. Mississippi, Alabama, Florida Outer Continental Shelf Baseline Environmental Survey; MAFLA, 1977/78, Program Synthesis Report. U.S. Department of the Interior, Bureau of Land Management. BLM/YM/ES-79/01-Vol-1-A. 278 p.

- Davis, R.W., W.E. Evans, B. Würsig, eds. 2000. Cetaceans, Sea Turtles and Seabirds in the Northern Gulf of Mexico: Distribution, Abundance, and Habitat Associations. Volume I: Executive Summary. Prepared by Texas A&M University at Galveston and the National Marine Fisheries Service. U.S. Department of the Interior, Geological Survey, Biological Resources Division, USGS/BRD/CR – 1999-0006 and Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study MMS 2000-002. 27pp.
- Davis, R.W., G.S. Fargion, N. May, T.D. Leming, M. Baumgartner, W.E. Evans, L.J. Hansen, and K. Mullin, 1998. Physical habitat of cetaceans along the continental slope in the north-central and western Gulf of Mexico. *Marine Mammal Science*, 14(3): 490-507.
- Dugo, M.A., B.R. Kreiser, S.T. Ross, W.T. Slack, R.J. Heise, and B.R. Bowen, 2004. Conservation and management implications of fine-scale genetic structure of Gulf sturgeon in the Pascagoula River, Mississippi. *Journal of Applied Ichthyology*, 20(4): 243-251.
- Eddleman, W. R., Flores, R. E., and M. Legare, 1994. Black rail (*Laterallus jamaicensis*), version 2.0. (A. F. Poole, F. B. Gill, Editors, & Cornell Lab of Ornithology, Ithaca, New York) Retrieved January 2, 2017, from The Birds of North America.
- Eleuterius, C.K. and S.L. Beaugez, 1979. Mississippi Sound: A hydrographic and climatic atlas. Mississippi-Alabama Sea Grant Consortium, MASGP-79-009. 135 pp.
- Engstrom, S.J. and R.L. Marinelli, 2005. Recruitment responses of benthic infauna to manipulated sediment geochemical properties in natural flows. *Journal of Marine Research*, 63: 407-436.
- Ernst, C.H., Lovich, J.E., & Barbour, R.W. (1994). Turtles of the United States and Canada. Smithsonian Institution Press, Washington and London.
- Evans, D.R., R.A. Valverde, C. Ordoñez, and R.R. Carthy, 2021. Identification of the Gulf of Mexico as an important high-use habitat for leatherback turtles from Central America. *Ecosphere*, 12(8): 1-14.
- Fenchel, T., 1969. The ecology of marine microbenthos IV. Structure and function of the benthic ecosystem, its chemical and physical factors and the microfauna communities with special reference to the ciliated protozoa. *Ophelia* 6:1-182.
- Flint R.W., and J.S. Holland, 1980. Benthic Infaunal Variability on a Transect in the Gulf of Mexico. University of Texas Marine Science Institute Contribution No 328. Academic Press, London. 14 p.
- Foster, A.M., and J.P. Clugston, 1997. Seasonal migration of Gulf sturgeon in the Suwannee River, Florida. *Transactions of the American Fisheries Society* 126: 302-308.
- Fox, D.A. and J.E. Hightower, 1998. Gulf sturgeon estuarine and nearshore marine habitat use in Choctawhatchee Bay, FL. Annual Report to National Marine Fisheries Service, North Carolina State University, Raleigh, NC, 29 pp.
- Fox, D., J.E. Hightower, and F. Parauka, 2002. Estuarine and nearshore marine habitat use by Gulf sturgeon from the Choctawhatchee River System, Florida. *American Fisheries Society Symposium*, 28: 111-126.

- Fox, D.A., J.E. Hightower, and F.M. Parauka, 2000. Gulf Sturgeon Spawning Migration and Habitat in the Choctawhatchee River System, Alabama–Florida. *Transactions of the American Fisheries Society*, 129: 811-826.
- Grassle, J.F. and J.P. Grassle, 1974. Opportunistic life histories and genetic systems in marine benthic polychaetes. *Journal of Marine Research*, 32: 253-284.
- Greenheck, E.M, M.J. Andres, M.S. Peterson, P.O. Grammers, W.T. Slack, & D.H. Wilbers, 2025. Comparison of Gulf sturgeon *Acipenser desotoi* use of Ship Island, Mississippi, USA, before and after restoration of barrier island habitats. *Endangered Species Research*, 57:233–251.
- Greenheck, E.M, M.J. Andres, D.A. Fox, D. Kiene, B.R. Kreiser, T.R. Nelson, M.S. Peterson, S.P. Powers, S.J. Rider, & W.T. Slack, 2023. Gulf Sturgeon (*Acipenser oxyrinchus desotoi*) in the Mobile Bay Estuary, Alabama: Documentation of use outside of designated critical habitat. *Journal of Coastal Research*, 39(6):1021–1043. Charlotte (North Carolina), ISSN 0749-0208.
- Gulf of Mexico Fishery Management Council (GMFMC), 1998. Generic Amendment for Addressing Essential Fish Habitat Requirements in the Following Fishery Management Plans of the Gulf of Mexico: Shrimp Fishery of the Gulf of Mexico, United States Waters, Red Drum Fishery of the Gulf of Mexico, Reef Fishery of the Gulf of Mexico, Coastal Migratory Resources (Mackerels) in the Gulf of Mexico and South Atlantic, Stone Crab Fishery of the Gulf of Mexico, Spiny Lobster Fishery of the Gulf of Mexico and South Atlantic, and Coral and Coral Reefs of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, FL, 238 pp.+app.
- Guyer, C., M.A. Bailey, and R.H. Mount, 2015. *Turtles of Alabama*. University of Alabama Press, Tuscaloosa.
- Hall, S.J. 1994. Physical disturbance and marine benthic communities: Life in unconsolidated sediment. *Oceanogr. Mar. Biol. Annu. Rev.* 32:179-239.
- Hansen, L.J., K.D. Mullin, T.A. Jefferson, and G.P. Scott, 1996. Visual Surveys Aboard Ships and Aircraft. In: R.W. Davis and G.S. Fargion (eds.), *Distribution and Abundance of Cetaceans in the North-central and Western Gulf of Mexico, Final Report, Volume II: Technical Report*. Prepared by the Texas Institute of Oceanography and the National Marine Fisheries Service for the U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region Office, New Orleans, LA. OCS Study MMS 96-0027, pp. 55-132.
- Harper, D.E., Jr., 1991. Macroinfauna and macroepifauna. In: J.M. Brooks and C.P. Giamonna (eds.). *Mississippi-Alabama Continental Shelf Ecosystem Study Data Summary and Synthesis, Volume II: Technical Narrative*. U.S. Department of the Interior, Minerals Management Service, 14-12-0001-30346, OCS Study MMS 91-0063.
- Harris, J.E., D.C. Parkyn, and D.J. Murie, 2005. Distribution of Gulf of Mexico sturgeon in relation to benthic invertebrate prey resources and environmental parameters in the Suwannee River estuary, Florida. *Transactions of the American Fisheries Society*, 134: 975-990.

- Heise, R.J., W.T. Slack, S.T. Ross, and M.A. Dugo, 2005. Gulf sturgeon summer habitat use and fall migration in the Pascagoula River, Mississippi, USA. *Journal of Applied Ichthyology*, 21(6): 461-468.
- Huff, J.A., 1975. Life history of Gulf of Mexico sturgeon, *Acipenser oxyrinchus desotoi*, in Suwannee River, Florida. Florida Department of Natural Resources, Marine Research Laboratory. 32pp.
- Hyland, J.L., L. Balthis, C.T. Hackney, G. McRae, A.H. Ringwood, T.R. Snoots, R.F. Van Dolah, and T.L. Wade, 1998. Environmental Quality of Estuaries of the Carolinian Province: 1995. Annual Statistical Summary for the 1995 EMAP-Estuaries Demonstration Project in the Carolinian Province. NOAA Technical Memorandum NOS ORCA 123.
- Madrigal, T., T. Wibbels, B.M. Shamblyn, A. Smith, C. Austin, K. Busboom, K. Thompson. & M.Solaogi, 2025. First documented nesting of Kemp's ridleys (*Lepidochelys kempii*) in Mississippi. *Marine Turtle Newsletter*, 169: 17.
- Jefferson, T.A. and A. J. Schiro, 1997. Distribution of cetaceans in the offshore Gulf of Mexico. *Mammal Review*, 27(1): 27-50.
- Kjerfve, B., 1983. Analysis and synthesis of oceanographic conditions in Mississippi Sound, April through October 1980. U.S. Army Corps of Engineers, Mobile District, Mobile, AL. 436 pp.
- Leary, C.J., J.L. Dobie, T.M. Mann, P.S. Floyd, and D.H. Nelson, 2008. *Pseudemys alabamensis* Baur 1893 – Alabama red-bellied cooter, Alabama red-bellied turtle. In Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., and Iverson, J.B. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. Chelonian Research Monographs No. 5, pp. 019.1-019.9.
- Lohofener, R., W. Hoggard, K. Mullin, C. Roden, and C. Rogers, 1990. Association of Sea Turtles with Petroleum Platforms in the North-central Gulf of Mexico. U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS egion, New Orleans, LA, OCS Study MMS 90-0025, 90 pp.
- Marinelli, R.L. and S.A. Woodin, 2002. Experimental evidence for linkages between infaunal recruitment, disturbance, and sediment surface chemistry. *Limnology and Oceanography*, 47: 221-229.
- Mason, W.T., and J.P. Clugston, 1993, Foods of the Gulf sturgeon in the Suwannee River, Florida. *Transactions of the American Fisheries Society*, 122: 378-385.
- Mayer, L.M., D.F. Schick, R.H. Findlay, and D.L. Rice, 1991. Effects of commercial dragging on sedimentary organic matter. *Marine Environmental Research*, 31: 249-261.
- McCall, P.L., 1977. Community patterns and adaptive strategies of the infaunal benthos of Long Island Sound. *Journal of Marine Research*, 35(2), 221-266.
- McDaniel, C. J., L. B. Crowder, and J. A. Priddy, 2000. Spatial dynamics of sea turtle abundance and shrimping intensity in the U.S. Gulf of Mexico. *Conservation Ecology*, 4(1): 15.

- Mississippi Department of Marine Resources (MDMR), 2026. <https://dmr.ms.gov/protected-species/#sea-turtles>
- Mississippi Department of Marine Resources (MDMR), 1998. Marine Resources and History of the Mississippi Gulf Coast Volume II.
- Morrow, J.V. Jr., K.J. Killgore, J.P. Kirk, and H.E. Rogillio, 1998. Distribution and population attributes of Gulf Sturgeon in the lower Pearl River System, Louisiana. Proceedings of the Annual Conference Southeastern Association of Fish and Wildlife Agencies, 50: 79-90.
- Mullin, K. and W. Hoggard, 1998. Aerial Surveys of Marine Mammals and Sea Turtles from Ships and Aircraft. In: R. Davis, W. Evans, M. Horning, S. Lynn, and P. Canton (eds.), Distribution and Abundance of Cetaceans in the Northern Gulf of Mexico, Interim Report No. 2. Prepared by the Texas Institute of Oceanography and the National Marine Fisheries Service, U.S. Geological Survey, Biological Resources Division. USGS/BRD/CR-1998-001, 259 pp.
- Murie, D.J. and D.C. Parkyn, 2001. Development and implementation of a non-lethal method for collection of stomach contents from sturgeon in relation to diel feeding periodicity: Phase II. Consumption of brachiopods as a model food source for Gulf of Mexico sturgeon. Final Report, Florida Marine Research Institute, St. Petersburg, FL.
- Murphy M.J. and J. Skaines, 1994. Habitat and movement of the Gulf sturgeon (*Acipenser oxyrinchus desotoi*) in the Pascagoula River, Mississippi. Museum Technical Report No. 29. Mississippi Museum of Natural Science. Jackson, MS. 20 pp.
- National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS), 2008. Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle (*Caretta caretta*), Second Revision. National Marine Fisheries Service, Silver Spring, MD.
- Newell, R.C., L.J. Seiderer, and D.R. Hitchcock, 1998. The impact of dredging works in coastal waters: A review of the sensitivity to disturbance and subsequent recovery of biological resources on the seabed. *Oceanography and Marine Biology Annual Review*, 36,127-178.
- Oliver, J.S., P.N. Slattery, L.W. Hulberg, and J.N. Nybakken, 1977. Patterns of Succession in Benthic Infaunal Communities Following Dredging and Dredged Material Disposal in Monterey Bay. Final Technical Report D-77-27, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS. Contract No. DACW39-74-C-0151.186 pp.
- Peterson, M.S., J.M. Havrylkoff, P.O. Grammer, P.F. Mickle, W.T. Slack, and K.M. Yeager, 2013. Macro-benthic prey and physical habitat characteristics in a western Gulf sturgeon population: Differential estuarine habitat use patterns. *Endangered Species Research*, 22(2): 159-174.
- Probert, P.K., 1984. Disturbance, sediment stability, and trophic structure of soft-bottom communities. *J. Mar. Res.* 42:893-921.
- Rhoads, D.C. and J.D. Germano, 1986. Interpreting long-term changes in benthic community structure: a new protocol. *Hydrobiologia*, 142:291-308.

- Rhoads, D.C. and J.D. Germano, 1982. Characterization of organism-sediment relations using sediment profile imaging: An efficient method of remote ecological monitoring of the seafloor (REMOTSTM System). *Marine Ecology Progress Series*, 8:115-128.
- Rhoads, D.C., P.L. McCall, and J.Y. Yingst, 1978. Disturbance and production on the estuarine seafloor. *American Science*, 66:577-586.
- Rogillio, H.E., R.T. Ruth, E.H. Behrens, C.N. Doolittle, W.J. Granger, and J.P. Kirk, 2007. Gulf sturgeon movements in the Pearl River drainage and the Mississippi Sound. *North American Journal of Fisheries Management*, 27: 89-95.
- Ross, S.T., W.T. Slack, R.J. Heise, M.A. Dugo, H. Rogillio, B.R. Bowen, and R.W. Heard, 2009. Estuarine and coastal habitat use of Gulf sturgeon (*Acipenser oxyrinchus desotoi*) in the North-Central Gulf of Mexico. *Estuaries and Coasts*, 32: 360-374.
- Ross, S.T., R.J. Heise, W.T. Slack, M.A. Dugo, B. Bowen, and R. Heard, 2003. Patterns of Habitat Use of Gulf Sturgeon (*Acipenser oxyrinchus desotoi*) in the Northern Gulf of Mexico. MASGC Briefing Book. MS-AL Sea Grant Consortium, Ocean Springs, MS. 8 pp.
- Ross, S. T., R.J. Heise, W.T. Slack, J.A. Ewing III, and M. Dugo, 2001: Movement and habitat use of the Gulf sturgeon (*Acipenser oxyrinchus desotoi*) in the Pascagoula drainage of Mississippi: year V. Mississippi Department of Wildlife, Fisheries, and Parks. Museum of Natural Sciences Tech. Rep. 90, Jackson, MS.
- Shaw, J.K., P.G. Johnson, R.M. Ewing, C.E. Comiskey, C.C. Brandt, and T.A. Farmer, 1982. Benthic Macroinfauna Community Characterization in Mississippi Sound and Adjacent Waters. U.S. Army Corps of Engineers, Mobile District, Mobile, AL. 442 pp.
- Santos, S.L. and J.L. Simon, 1980. Marine soft-bottom community establishment following annual defaunation: Larval or adult recruitment? *Marine Ecology Progress Series*, 2:235-241.
- Simon, J.L. and D.M. Dauer, 1977. Reestablishment of a benthic community following natural defaunation. pp. 139-154 *In* B.C. Coull (ed.) *Ecology of Marine Benthos*. University of South Carolina Press, Columbia, SC.
- Southeast Regional Sea Turtle Network, 2026. Sea turtle nesting in Mississippi for 2024 and 2025.
- Stabile, J., J.R. Waldman, F. Parauka, and I. Wirgin, 1996. Stock structure and homing fidelity in Gulf sturgeon (*Acipenser oxyrinchus desotoi*) based on restriction fragment length polymorphism and sequence analysis of mitochondrial DNA. *Genetics*, 144:767-775.
- Sulak, K.J., and J.P. Clugston, 1999. Recent advances in life history of Gulf of Mexico sturgeon, *Acipenser oxyrinchus desotoi*, in the Suwannee River, Florida, USA: a synopsis. *Journal of Applied Ichthyology*, 15: 116-128.
- Sulak, K.J., and J.P. Clugston, 1998. Early life history stages of Gulf sturgeon in the Suwannee River, Florida. *Transactions of the American Fisheries Society*, 127: 758-771.

- Thrush, S.F., R.B. Whitlatch, R.D. Pridmore, J.E. Hewitt, V.J. Cummings, and M.R. Wilkinson. 1996. Scale-dependent recolonization: The role of sediment stability in a dynamic sandflat habitat. *Ecology* 77: 2472-2487.
- U.S. Army Corps of Engineers (USACE), 2019. Final Environmental Impact Statement - Bayou Casotte Harbor Channel Improvement Project, Pascagoula, Mississippi. Prepared for: Jackson County Port Authority, Pascagoula, MS. December 2019. 263 pp.
- U.S. Fish and Wildlife Service (USFWS) (2023). Endangered and Threatened Wildlife and Plants; Review of Species that are Candidates for Listing as Endangered or Threatened Species Status. Monarch Butterfly. Federal Register / Vol. 88, No. 122 / Thursday, June 27, 2023. 26 pp.
- U.S. Fish and Wildlife Service (USFWS) (2022). Endangered and Threatened Wildlife and Plants; Endangered Species Status Tri-colored Bat. Federal Register / Vol. 87, No. 177 / Thursday, September 22, 2022. 13 pp.
- U.S. Fish & Wildlife Service (USFWS), 2020. Endangered and Threatened Wildlife and Plants; Threatened Species Status for Eastern Black Rail With a Section 4(d) Rule. Federal Register / Vol. 85, No. 196 / Thursday, October 8, 2020. 40 pp.
- U.S. Fish & Wildlife Service (USFWS), 2019. Draft Revised Recovery Plan for Alabama for the Red-bellied Turtle (*Pseudemys alabamensis*). Atlanta, GA. 7 pp.
- U.S. Fish & Wildlife Service (USFWS), 2018. Draft Species Status Assessment Report for Alabama Red-bellied Turtle (*Pseudemys alabamensis*), Atlanta, GA. 88 pp.
- Woodin, S.A., S.M. Lindsay, and D.S. Wetthey, 1995. Process-Specific Recruitment Cues in Marine Sedimentary Systems. *Biological Bulletin*, 189: 49-58.
- Van Dolah, R.F., D.R. Calder, and D.M. Knott, 1984. Effects of dredging and open-water disposal on benthic macroinvertebrates in a South Carolina estuary. *Estuaries*, 7: 28-37.
- Vick, P.E., M.S. Peterson, & W.T. Slack, 2018. Seascape connectivity of Gulf sturgeon *Acipenser oxyrinchus desotoi* population units across the northern Gulf of Mexico. *Endangered Species Research*, 37: 195-205.

Appendix A
USFWS Information for Planning and Conservation Decision Support System Report



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mississippi Ecological Services Field Office
6578 Dogwood View Parkway, Suite A
Jackson, MS 39213-7856
Phone: (601) 965-4900



In Reply Refer To:

07/13/2026 17:48:33 UTC

Project Code: 2026-0115380

Project Name: Huntington Ingalls Industries Pascagoula Harbor Maintenance Dredging

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. Please email consultation requests to MSFOSection7Consultation@fws.gov.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Marine Mammals

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Mississippi Ecological Services Field Office

6578 Dogwood View Parkway, Suite A
Jackson, MS 39213-7856
(601) 965-4900

PROJECT SUMMARY

Project Code: 2026-0115380

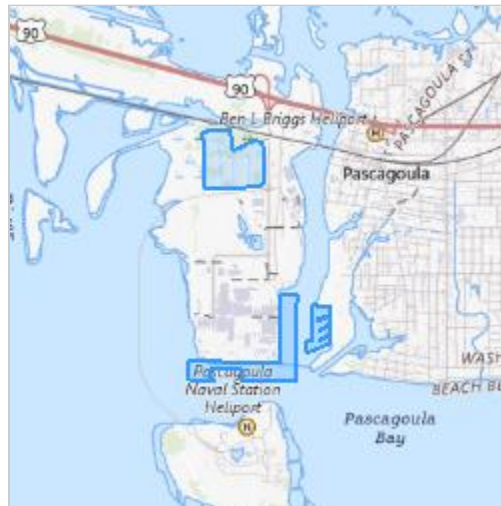
Project Name: Huntington Ingalls Industries Pascagoula Harbor Maintenance Dredging

Project Type: Navigation Channel Improvement

Project Description: Maintenance dredging

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@30.36610965,-88.57541265,14z>



Counties: Jackson County, Mississippi

ENDANGERED SPECIES ACT SPECIES

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Proposed Endangered
West Indian Manatee <i>Trichechus manatus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. <i>This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.</i> Species profile: https://ecos.fws.gov/ecp/species/4469 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Threatened

BIRDS

NAME	STATUS
Eastern Black rail <i>Laterallus jamaicensis jamaicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Threatened
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Threatened
rufa red knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1864 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Threatened

REPTILES

NAME	STATUS
Alabama red-bellied turtle <i>Pseudemys alabamensis</i>	Endangered

NAME	STATUS
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1494 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	
Gopher tortoise <i>Gopherus polyphemus</i> Population: Western DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6994 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Threatened

AMPHIBIANS

NAME	STATUS
dusky gopher frog <i>Rana sevosa</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5600 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Endangered

FISHES

NAME	STATUS
Gulf sturgeon <i>Acipenser oxyrinchus (=oxyrhynchus) desotoi</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/651 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Threatened

INSECTS

NAME	STATUS
Monarch butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743 General project design guidelines: https://ipac.ecosphere.fws.gov/project/FFITDZMR4BF5DF4XWSFKR66GZE/documents/generated/7127.pdf	Proposed Threatened

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Gulf sturgeon <i>Acipenser oxyrinchus</i> (=oxyrhynchus) <i>desotoi</i> https://ecos.fws.gov/ecp/species/651#crithab	Final

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

-
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
 2. The [Migratory Birds Treaty Act](#) of 1918.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For

assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort — no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Bald Eagle	+	+	+	+	+	+	+	+	+	+	+	+
Non-BCC	+	+	+	+	+	+	+	+	+	+	+	+
Vulnerable	+	+	+	+	+	+	+	+	+	+	+	+

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel <i>Falco sparverius paulus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
American Oystercatcher <i>Haematopus palliatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31

NAME	BREEDING SEASON
Bachman's Sparrow <i>Peucaea aestivalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6177	Breeds May 1 to Sep 30
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Black Scoter <i>Melanitta nigra</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10413	Breeds elsewhere
Black Skimmer <i>Rynchops niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Brown Pelican <i>Pelecanus occidentalis</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/6034	Breeds Jan 15 to Sep 30
Brown-headed Nuthatch <i>Sitta pusilla</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9427	Breeds Mar 1 to Jul 15
Cerulean Warbler <i>Setophaga cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 26 to Jul 20
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Chuck-will's-widow <i>Antrostomus carolinensis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9604	Breeds May 10 to Jul 10

NAME	BREEDING SEASON
Coastal (Waynes) Black-throated Green Warbler <i>Setophaga virens waynei</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11879	Breeds May 1 to Aug 15
Common loon <i>gavia immer</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/4464	Breeds Apr 15 to Oct 31
Double-crested Cormorant <i>phalacrocorax auritus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/3478	Breeds Apr 20 to Aug 31
Eastern Whip-poor-will <i>Antrastomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Grasshopper Sparrow <i>Ammodramus savannarum perpallidus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Gull-billed Tern <i>Gelochelidon nilotica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Henslow's Sparrow <i>Centronyx henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds elsewhere
Kentucky Warbler <i>Geothlypis formosa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9443	Breeds Apr 20 to Aug 20
King Rail <i>Rallus elegans</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Le Conte's Sparrow <i>Ammospiza leconteii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9469	Breeds elsewhere

NAME	BREEDING SEASON
Least Tern <i>Sternula antillarum antillarum</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11919	Breeds Apr 25 to Sep 5
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-tailed Duck <i>Clangula hyemalis</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/7238	Breeds elsewhere
Magnificent Frigatebird <i>Fregata magnificens</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9588	Breeds elsewhere
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Painted Bunting <i>Passerina ciris</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9511	Breeds Apr 25 to Aug 15
Pectoral Sandpiper <i>Calidris melanotos</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prairie Warbler <i>Setophaga discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-breasted Merganser <i>Mergus serrator</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10693	Breeds elsewhere

NAME	BREEDING SEASON
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Ring-billed Gull <i>Larus delawarensis</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10468	Breeds elsewhere
Royal Tern <i>Thalasseus maximus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10471	Breeds Apr 15 to Aug 31
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9603	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Sooty Tern <i>Onychoprion fuscatus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10695	Breeds Mar 10 to Jul 31
Surf Scoter <i>Melanitta perspicillata</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10463	Breeds elsewhere

NAME	BREEDING SEASON
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Whimbrel <i>Numenius phaeopus hudsonicus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11991	Breeds elsewhere
White-winged Scoter <i>Melanitta fusca</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10462	Breeds elsewhere
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5
Wilson's Plover <i>Charadrius wilsonia</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9722	Breeds Apr 1 to Aug 20
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31
Yellow Rail <i>Coturnicops noveboracensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9476	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

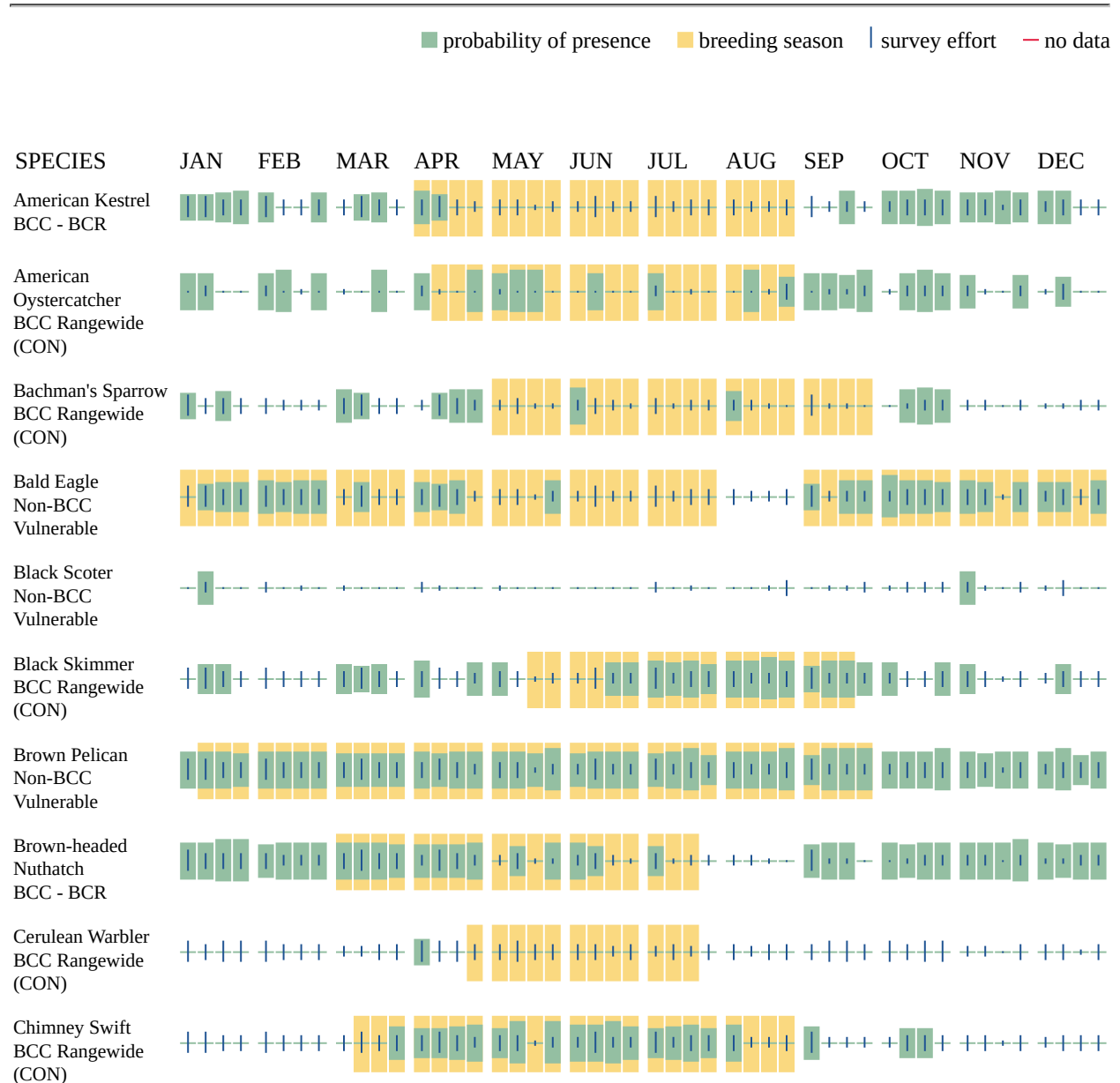
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

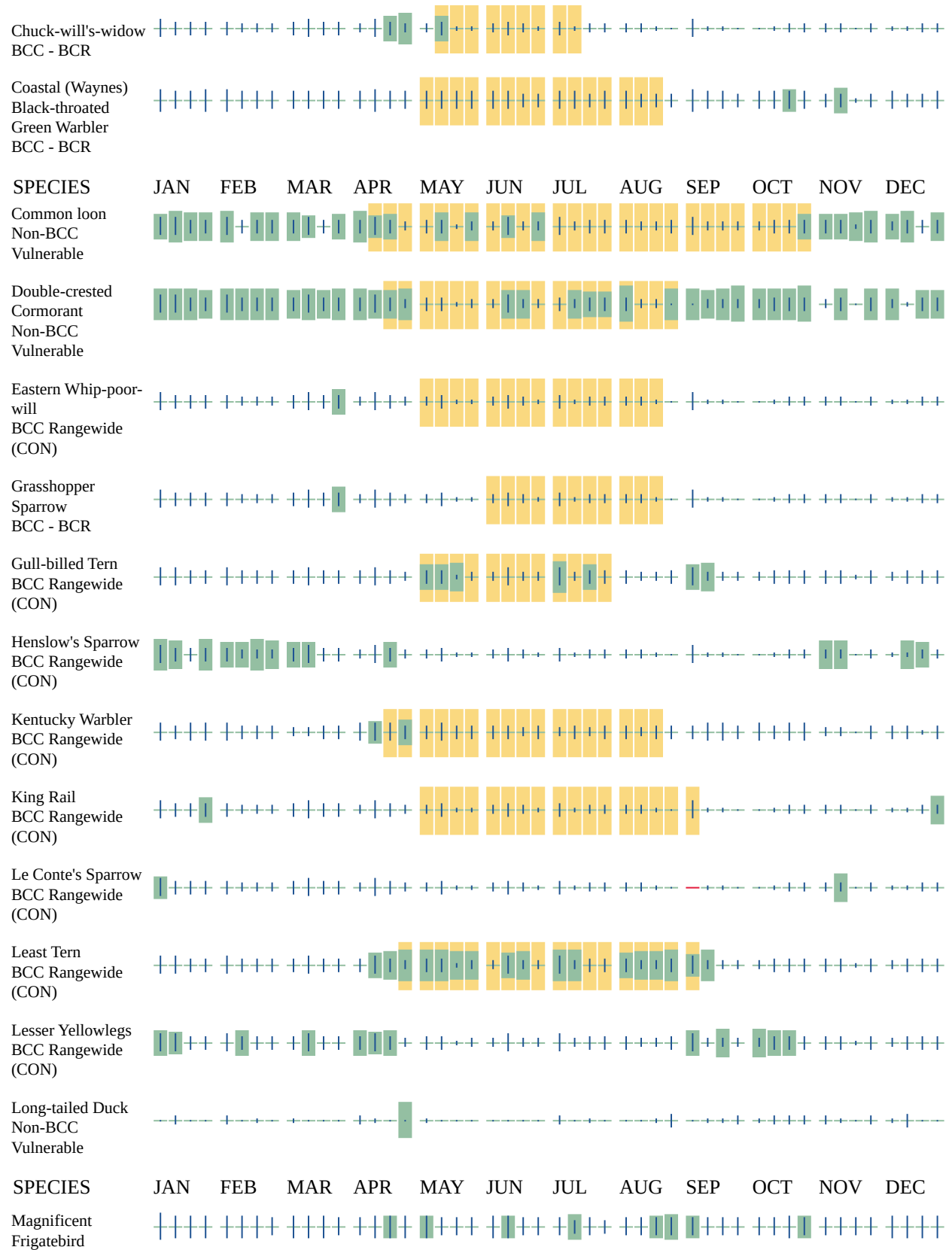
Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

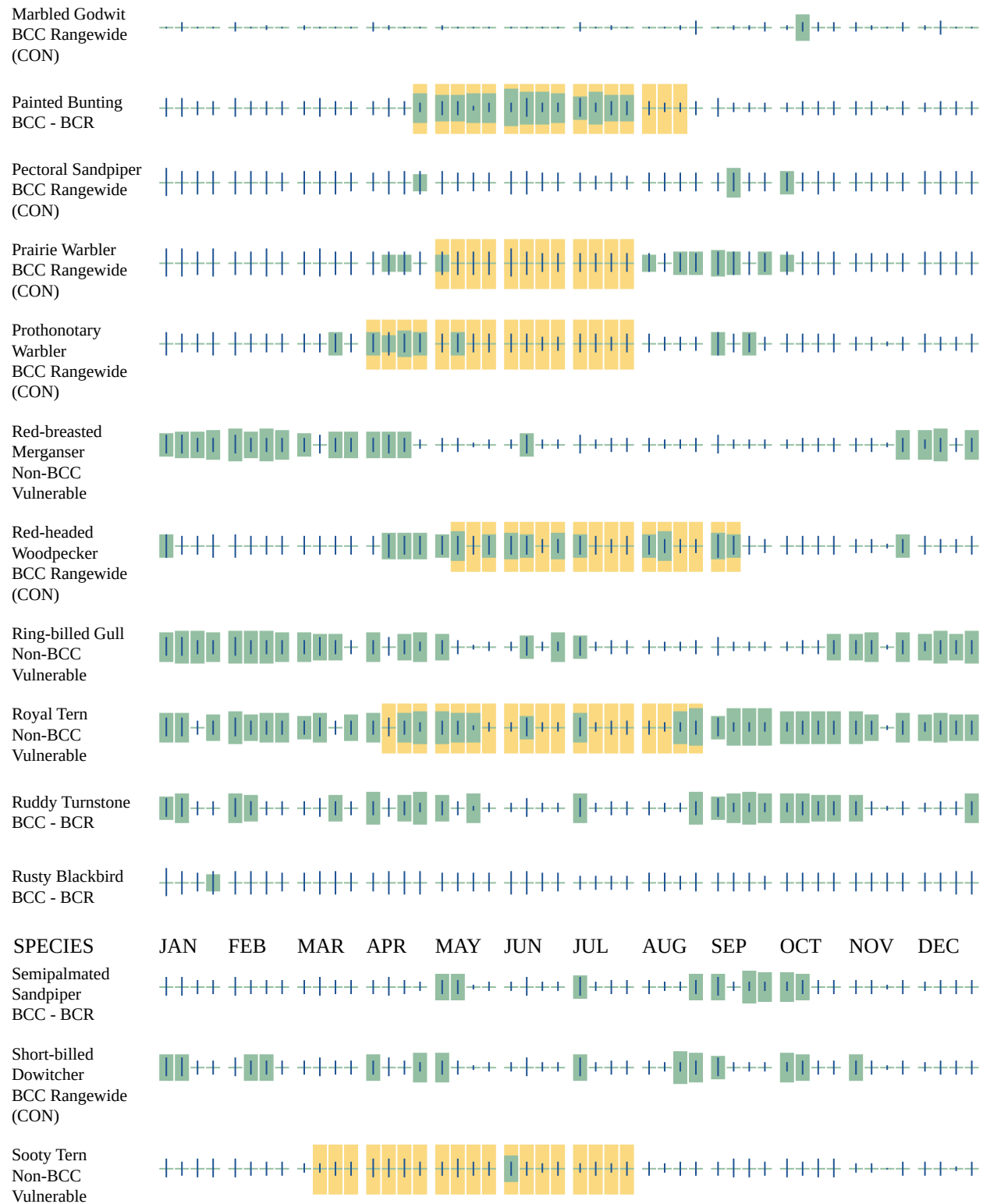
No Data (—)

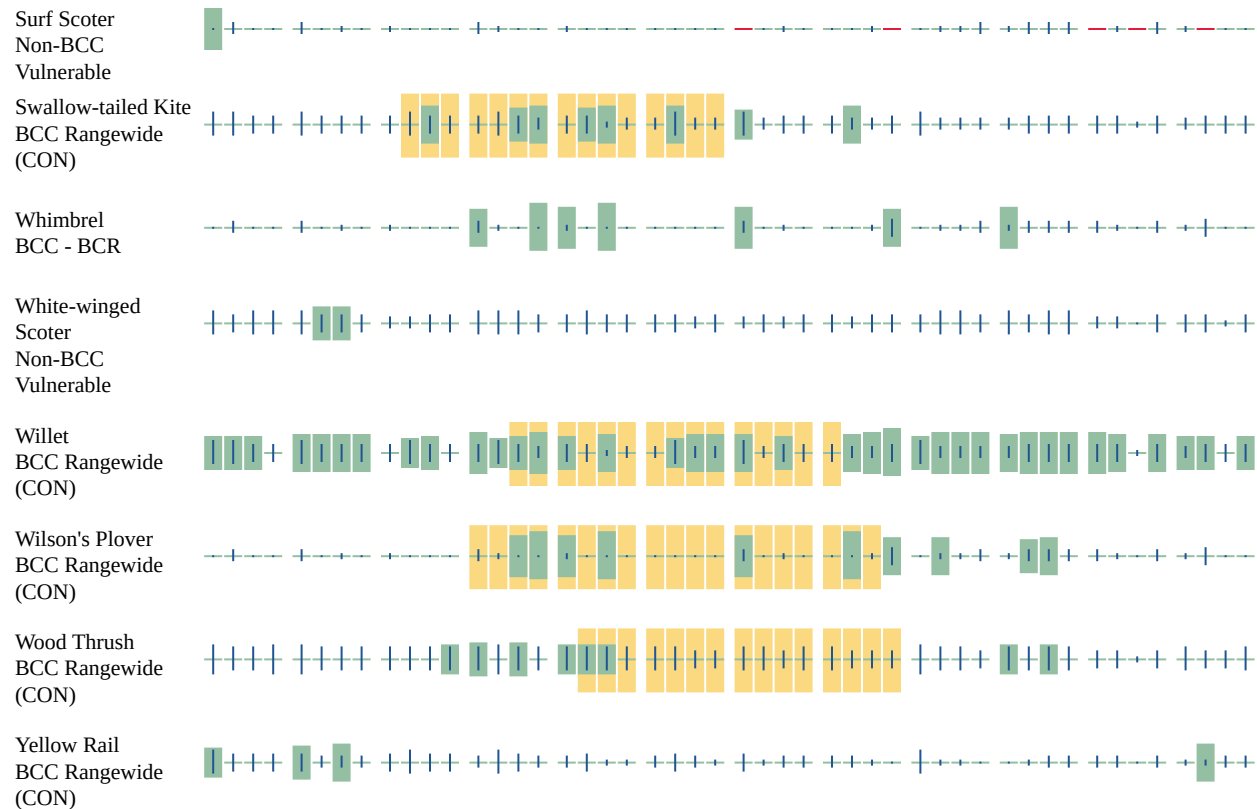
A week is marked as having no data if there were no survey events for that week.





BCC - BCR





Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MARINE MAMMALS

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries³ [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on

this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

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1. The [Endangered Species Act](#) (ESA) of 1973.
 2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
 3. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME

West Indian Manatee *Trichechus manatus*

Species profile: <https://ecos.fws.gov/ecp/species/4469>

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Howard Horne
Address: 2970 Cottage Hill Road, Ste. 190
City: Mobile
State: AL
Zip: 36606
Email: hhorne@thompsonengineering.com
Phone: 2516662443

Appendix B
NOAA NMFS Sea Turtle Construction Conditions



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006

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Appendix C
Guidelines for Activities in Proximity to Manatees and Their Habitat

Guidelines for Activities in Proximity to Manatees and Their Habitat

- A. All personnel associated with the project should be informed of the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. Such personnel instruction should also include a discussion of the civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- B. All contract and/or construction personnel are responsible for observing water-related activities for the presence of manatee(s).
- C. Temporary signs should be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area), and at least one sign should be placed where it is visible to the vessel operator.
- D. Siltation barriers, if used, should be made of material in which manatees could not become entangled, and should be properly secured and regularly monitored. Barriers should not impede manatee movement.
- E. If a manatee is sighted within 100 yards of the active work zone, special operating conditions should be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels should operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, should be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area on its own accord, special operating conditions are no longer necessary, but careful observations would be resumed.
- F. Any manatee sighting should be immediately reported to the Dauphin Island Sea Lab's Manatee Sighting Network Hotline at (866-493-5803) or at manatee.disl.org and the U.S. Fish and Wildlife Service's Jackson MS Field Office (228-493-6631).