



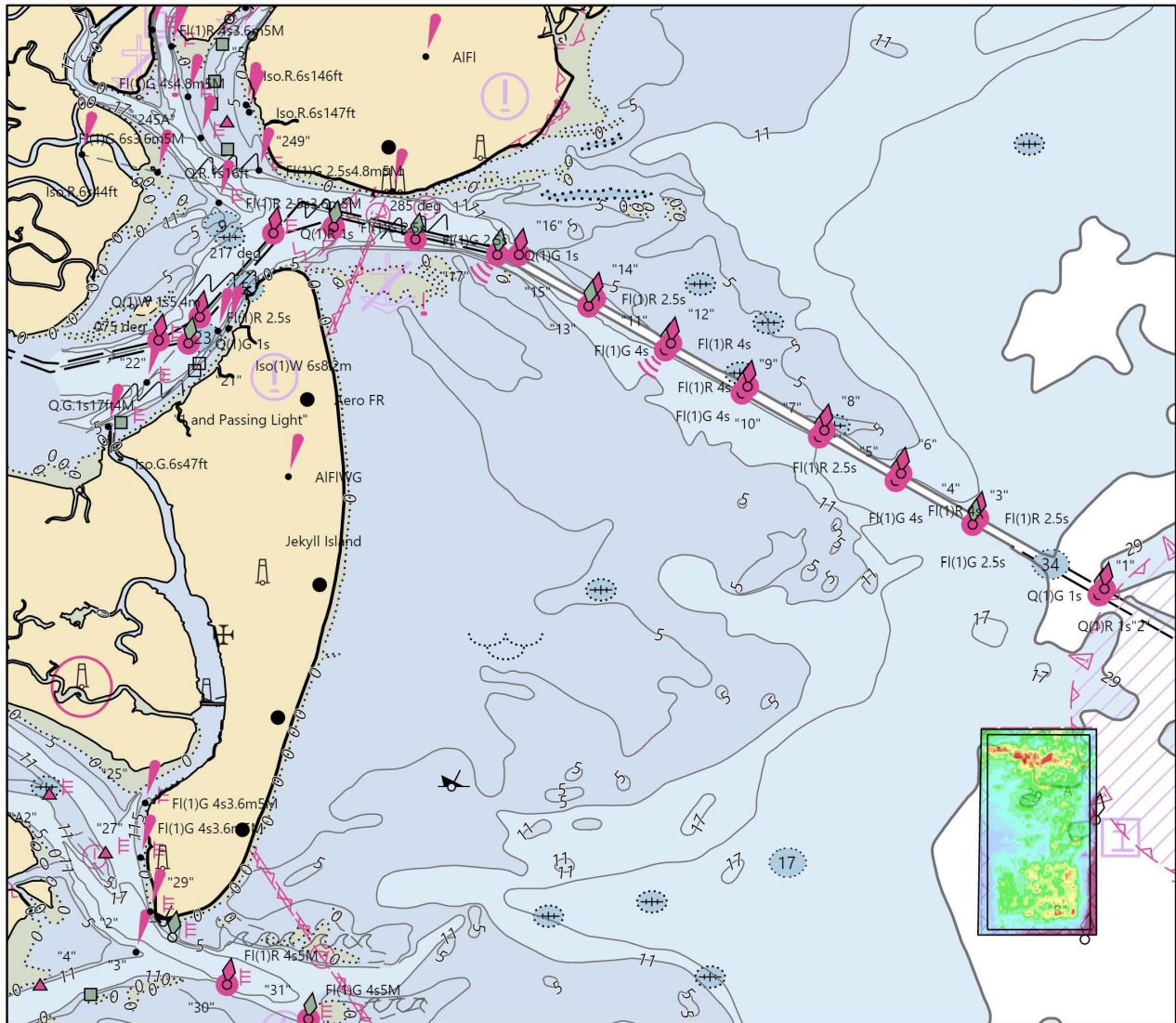
BRUNSWICK HARBOR OCEAN DREDGED MATERIAL DISPOSAL SITE

SITE MANAGEMENT AND MONITORING PLAN



US Army Corps of Engineers®

November 2023



The following Site Management and Monitoring Plan (SMMP) for the Brunswick Harbor Ocean Dredged Material Disposal Site (ODMDS) has been revised to comply with section 102(c)(3) of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 U.S.C. section 1401, et seq.) as amended by section 506 of the Water Resources Development Act (WRDA) Amendments of 1992 (Public Law 102-580) and has been approved by the following officials of the U.S. Environmental Protection Agency (EPA) Region 4 and the U.S. Army Corps of Engineers (USACE), Savannah District.

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This plan is effective from the date of the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers signatures for a term not to exceed 10 years. Partial midterm modifications do not extend the term. The MPRSA requires review and revision no less frequently than every 10 years.

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1 INTRODUCTION

The Marine Protection, Research, and Sanctuaries Act (MPRSA), also referred to as the Ocean Dumping Act, regulates the transportation and dumping of any material into ocean waters. Under the MPRSA, no permit may be issued for ocean dumping where such dumping will unreasonably degrade or endanger human health or the marine environment. Most material dumped in the ocean today is dredged material (i.e., sediments) removed from the bottom of water bodies to maintain navigation channels and berthing areas.

In the case of dredged material, the U.S. Army Corps of Engineers (USACE) is responsible for issuing ocean dumping permits and authorizing or conducting federal projects involving ocean dumping of dredged material (MPRSA section 103). USACE applies the U.S. Environmental Protection Agency (EPA) ocean dumping criteria when evaluating permit requests for (and implementing federal projects involving) the transportation of dredged material for the purpose of dumping into ocean waters. MPRSA permits and federal projects involving the ocean dumping of dredged material are subject to the EPA review and written concurrence. The EPA may concur with or without conditions or decline to concur (i.e., non-concur) on the permit or federal project. If the EPA concurs with conditions, the final permit or the terms of the federal project authorization must include those conditions. If the EPA declines to concur on an ocean dumping permit or federal project, USACE cannot issue the permit or authorize or conduct the transportation to and disposal of dredged material in the ocean associated with the federal project. According to USACE regulations at 33 CFR 325.6, MPRSA permits for and federal projects involving the transportation of dredged material for the purpose of dumping into ocean waters may not exceed three years.

Under MPRSA section 102, the EPA is responsible for the designation of all ocean disposal sites and the management of such designated sites. The EPA's ocean dumping regulations at 40 CFR Part 228 establish procedures for the designation and management of ocean disposal sites. Unless otherwise specifically noted, site management authority for each site set forth in 40 CFR 228.15 is delegated to the EPA Regional office under which the site entry is listed. Management of a site consists of regulating times, rates, and methods of disposal; regulating quantities and types of materials disposed; developing and maintaining effective ambient monitoring programs for the site; conducting disposal site evaluation studies; and recommending modifications in site use and/or designation (40 CFR 228.3(a)).

The EPA shares the responsibilities of conducting management and monitoring activities at EPA-designated ODMDSs with USACE. Under MPRSA section 102(c), the EPA, in conjunction with USACE, is responsible for developing a site management and monitoring plan (SMMP) for

each designated ODMDS. The objective of each SMMP is to ensure that dredged material ocean disposal activities will not unreasonably degrade the marine environment or endanger human health or economic potentialities or other uses of the ocean. The SMMP provisions are an integral part of managing all disposal activities at an ocean disposal site. Preparation of this SMMP has been informed by the Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites (EPA and USACE, 1996).

This SMMP may be modified during its term if the EPA in conjunction with USACE determines that such changes are warranted, including as a result of information obtained from monitoring or due to other factors. This SMMP will be reviewed and revised as needed, or at least every 10 years, whichever is sooner. The MPRSA provides that the SMMP shall include, but is not limited to:

- A baseline assessment of conditions at the site;
- A program for monitoring the site;
- Special management conditions or practices to be implemented at each site that are necessary for the protection of the environment;
- Consideration of the quantity of the material to be disposed of at the site and the presence, nature, and bioavailability of contaminants in the material;
- Consideration of the anticipated long-term use of the site including the anticipated closure of the site, if applicable, and any need for continued management after closure of the site; and
- A schedule for review and revision of the plan (which shall be reviewed and revised at least every 10 years).

The provisions in this SMMP apply for all dredged material disposal activities at the Brunswick Harbor ODMDS including monitoring and management activities by the federal agencies. This SMMP also includes template provisions for USACE to include in future permits issued for disposal at this site (Appendix B) as well as USACE template contract conditions (Appendix C). References in this SMMP to matters that “should be required” refer to implementation in a subsequent proceeding to authorize disposal of dredged material, whether in a permit, in a contract or other federal project specification for the transportation and disposal of dredged material, or by USACE directly. Other than the regulatory text copied below, this SMMP does not itself impose binding requirements or obligations, though terms and conditions from the SMMP will be incorporated into other documents (e.g., permits and federal project documents that authorize transportation and disposal of dredged material at the ODMDS) that will then impose binding rights and obligations on persons responsible for the authorized transportation and disposal.

Matters that “should be required” are implemented through application of the template language included in Appendices B and C, though the language may vary from the terms of the Appendices as necessary and appropriate. If the translation of template terms by USACE warrants further clarification, the EPA can ensure implementation of the template provisions in Appendix B and C as necessary through the EPA’s concurrence actions.

1.1 ROLES AND RESPONSIBILITIES

The EPA and USACE work together to implement the site monitoring program for the Brunswick Harbor ODMDS. Specific responsibilities of the EPA and USACE are as follows:

EPA: The EPA is responsible for designating, modifying, and de-designating/cancelling ODMDSs under MPRSA section 102, managing these sites by regulating site use, developing and implementing site monitoring programs (including compliance monitoring), evaluating environmental effects of disposal of dredged material at the sites, reviewing for concurrence on dredged material suitability determinations, and reviewing for compliance with the MPRSA criteria, conditions, and restrictions for MPRSA section 103 permits or federal projects authorizing the ocean dumping of dredged material.

Under MPRSA sections 1411 and 1415(a), the EPA has broad authority to assess civil penalties and seek injunctive remedies for unauthorized transport of material for the purpose of dumping it into ocean waters, including deviations from transportation-related and disposal-related conditions required by a regulation establishing the ODMDS or deviations from transportation-related and disposal-related conduct required or authorized by USACE in a permit or (in the case of Federal projects) the terms of the contract documents.

USACE: USACE is responsible for evaluating dredged material suitability and compliance with the MPRSA criteria, conditions, and restrictions, issuing MPRSA section 103 permits and project authorizations, and, in conjunction with the EPA, regulating site use and developing and implementing site monitoring programs (including compliance monitoring) through development and use of the SMMP. USACE also has a contract remedy process to enforce conditions related to ocean disposal with a contractor for a federal project. USACE contract remedies are separate and distinct from statutory remedies under the MPRSA. If supplemental baseline information is needed related to a specific authorized activity, it should be obtained in conjunction with the authorization

of that activity; this would generally be the responsibility of the permittee or USACE for federal projects.

Both: While USACE evaluates disposal projects, and their issuance of permits or authorizations is subject to the EPA concurrence, development of management plans is a joint responsibility of the EPA and USACE (MPRSA Section 103(c)(3)). Enforcement is also a shared responsibility and depends on the nature of the violation. Determination of baseline conditions during designation of an ODMDS is the responsibility of both the EPA and USACE. Identifying and evaluating any impacts outside the designated site typically is the responsibility of the EPA and USACE; permitted site users may be required to provide information to support such determinations.

The original Brunswick Harbor ODMDS SMMP was developed by an interagency team including the USACE, Savannah District, the EPA Region 4, Georgia Department of Transportation, and Georgia Department of Natural Resources. Other agencies, such as the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), the Bureau of Ocean Energy Management (BOEM), and the Bureau of Safety and Environmental Enforcement (BSEE) have been and will be asked to participate in future SMMP development where appropriate.

1.2 DEFINITIONS

For the purposes of this document the following definitions apply:

“Authorization document” means any permit issued pursuant to MPRSA and/or authorizations from the Corps for the transportation and/or ocean disposal of dredged material including but not limited to transportation-related or disposal-related conditions in contract documents and/or specifications.

“Site user” as used here means a person utilizing a permit issued by the Corps of Engineers under section 103 of the Act (see 33 CFR 209.120) and any person operating any federal dredging and ocean disposal projects reviewed under section 103 of the Act (see 33 CFR 209.145) or under a Dredged Material Permit as defined in 40 CFR 220.2(h).

“Disposal vessel” is any barge, scow, or self-propelled vessel (such as a hopper dredge) that carries dredged material during transit and from which the dredged material is discharged, typically by opening doors in the bottom of the hull or by splitting the hull.

“Transit” or *“transport”* to the disposal site begins as soon as dredged material loading into the disposal vessel is completed and a towing vessel begins moving the disposal vessel to the disposal site.

“Disposal Release Zone” is the area identified within the ODMDS in which dumping of dredged material must occur in order for it to stay within the boundaries of the site, within which the disposal vessel must discharge all of the dredged material.

“Towing vessel” is any self-propelled tug or other marine vessel used to transport (tow or push) the “disposal vessel” for any portion of the transit to the ODMDS.

2 SITE DESCRIPTION

The following sections 2.1 through 2.5 are a summary of site-specific information used in the development of this SMMP.

2.1 SITE HISTORY AND DESIGNATION

In 1989, the EPA designated the Brunswick Harbor ODMDS as an approved dumping site (40 CFR 228.15(h)(7)). This SMMP specifically addresses the disposal of dredged material into the Brunswick Harbor ODMDS. The plan includes past monitoring results and complies with provisions of the Water Resources Development Act (WRDA) of 1992 and the Memorandum of Agreement (MOA) between the EPA and USACE (EPA and USACE, 2007).

The first SMMP for the Brunswick Harbor ODMDS was included in the 1998 Brunswick Harbor Deepening Final Environmental Impact Statement (Record of Decision signed May 12, 1999). That SMMP was superseded by a revision signed in December 2013. This current revision to the Brunswick Harbor ODMDS SMMP supersedes all prior SMMPs and has been prepared in accordance with the Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites (EPA and USACE 1996).

Upon issuance of this revised SMMP, the SMMP provisions provide the framework for future site monitoring and management as required by MPRSA. All Section 103 (MPRSA) ocean disposal permits, or contract specifications will be conditioned as necessary to assure consistency with the SMMP.

2.1.1 Final Rule Text from 40 CFR 228.15(h)(7)

The official Brunswick Harbor ODMDS designation is published at 40 CFR 228.15(h)(7).

Brunswick Harbor, Brunswick, Georgia Ocean Dredged Material Disposal Site.

(i) **Location:** 31°02'35" N, 81°17'40" W; 31°02'35" N, 81°16'30" W; 31°00'30" N, 81°16'30" W; 31°00'30" N, 81°17'42" W (NAD27).

(ii) **Size:** Approximately 2 square nautical miles.

(iii) **Depth:** Average 9 meters.

(iv) **Primary use:** Dredged material.

(v) **Period of use:** Continuing use.

(vi) **Restrictions:** Disposal shall be limited to suitable dredged material from the greater Brunswick, Georgia, vicinity.

2.2 SITE LOCATION

The Brunswick Harbor ODMDS (Figure 1) encompasses an area of 2.0 square nautical miles (NM) (approximately 1.0 by 2.0 NM; approximately 1,700 acres) and is located about 6.6 NM east of the coastline and 2 NM south of the whistle buoy at mile 8 of the Brunswick Bar Channel. Water depths within the ODMDS vary between approximately 25 and 39 feet mean lower low water (MLLW). Site corner coordinates are identified in Table 1.

Table 1. Brunswick Harbor ODMDS Corner Coordinates (NAD83)

Vertex	Geographic		State Plane (Georgia East, Zone 1001)	
	Latitude (North)	Longitude (West)	Northing	Easting
NW	31°02.5974'N	81°17.7889'W	380497.54N	929375.49E
NE	31°02.5974'N	81°16.4888'W	380545.97N	935465.28E
SE	31°00.5141'N	81°16.4888'W	367916.67N	935566.74E
SW	31°00.5141'N	81°17.6888'W	367866.91N	929300.69E



Figure 1. Location map of the Brunswick Harbor ODMDS.

2.3 SITE USE

It is intended that the Brunswick Harbor ODMDS will be used for the disposal of material dredged (both maintenance and construction or new work material) from the Brunswick entrance channel oceanward of the Sidney Lanier Bridge (U.S. Highway 17). The primary user of the Brunswick Harbor ODMDS is the USACE for Civil Works.

Between 1976 and 2023, over 38 million cubic yards (cy) of dredged material has been placed in the Brunswick Harbor ODMDS. Annual quantities from the last 10 years are listed in Table 2 and can also be found in the Ocean Disposal Database maintained by the USACE (<https://odd.el.erdc.dren.mil>); see Appendix E for volumes disposed in Brunswick's ODMDS from 1976 through 2012.

Fluctuations in funding availability make future operations and maintenance (O&M) volumes and rates of disposal difficult to predict. However, incorporating only O&M dredging events and recent funding trends since 2015*, future O&M disposal volumes from Brunswick Harbor's entrance channel can expect to be approximately 660,000 cy annually. Some future disposal volumes may be higher with continued increases in appropriations from the Harbor Maintenance Trust Fund (HMTF).

*Recent legislation, such as the Water Resources Reform and Development Act of 2014, and the Water Resources Development Act of 2020, have authorized incrementally higher appropriations from the Harbor Maintenance Trust Fund (HMTF), which serves as a source of revenue for maintaining shipping channels.

The Brunswick Harbor ODMDS has generally been observed to be a dispersive site, and consequently, the ultimate capacity of the ODMDS is subject to variability. However, using bathymetry surveys after O&M dredging was completed in March 2023 and based on available fill volume to a maximum depth of -25 feet MLLW, Savannah District estimated current remaining ODMDS capacity to be approximately 18,000,000 cy. The 2023 bathymetry survey of the Brunswick Harbor ODMDS is shown in Figure 2.

Table 2. Yearly Record of Dredged Material Disposal in the Brunswick Harbor ODMDS from 2013 Through 2023 (see Appendix E for 1976 - 2012)

Year	O&M (cy)
2013	118,986
2014	285,513
2015	476,280
2016	292,412
2017	1,237,758
2018	1,493,641
2019	411,517
2020	255,312
2021	104,203
2022	639,546
2023	1,069,744

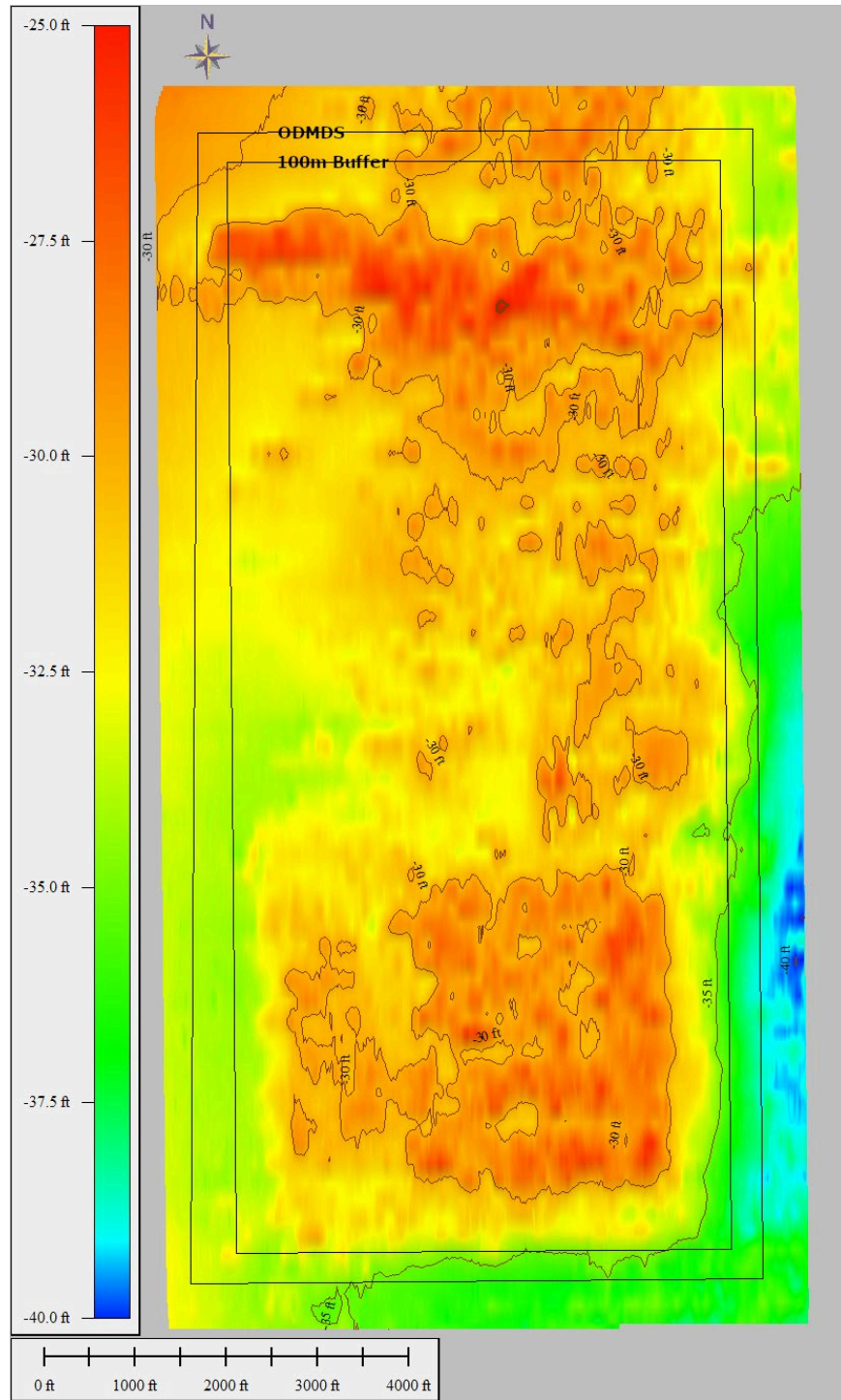


Figure 2. Brunswick Harbor ODMDS 2023 bathymetry indicating the site 100-meter buffer.

The 1988 Final EIS for designation of the Brunswick Harbor ODMDS placed no restrictions on disposal volumes. Due to the unknowns regarding dispersiveness and capacity, a capacity analysis will be conducted by the site user prior to disposal of significant quantities of material from any new work project. Significant quantities are considered those exceeding 1 million cy and will be determined on a case-by-case basis through consultation between Savannah District and the EPA.

The disposition of any beach compatible sand from future projects will be determined during state and local permitting activities for any such projects. Disposal of coarser material, such as rubble, should be coordinated during the applicable permitting activities. The USACE and the EPA will work to promote possible beneficial uses of the material, to the maximum extent practicable.

2.4 PAST MONITORING ACTIVITIES

Baseline assessments and monitoring provide an important record of changes or impacts that have occurred during the use of the site. Bathymetric surveys may be conducted before and after each disposal event. Other monitoring activities completed at Brunswick Harbor ODMDS are outlined in Table 3. Data collected during these surveys are used to inform future monitoring activities and site disposal activity.

Disposal has occurred at the present site since the 1960s and predates any data gathering at the site. Therefore, no true baseline information has or can be collected. The results of investigations performed to support the EPA's 1989 site designation and subsequent surveys, including those in support of the Brunswick Harbor Deepening Environmental Impact Statement, approved in May 1999, are listed in Table 3 and serve as the main body of data for the monitoring of the impacts associated with the use of the Brunswick Harbor ODMDS.

Table 3. Surveys and Studies Conducted at the Brunswick Harbor ODMDS

Survey/Study Title	Conducted By	Date	Purpose	Results
Sea-bed Drifter Study	GA DNR	1982	Determine direction of sediment transport	Baseline Survey - General trend of movement was due westward away from ODMDS
Environmental Study (COE contract #DACW 21-84-C-005)	GA Institute of Technology	1985	Support permanent designation of Brunswick Harbor ODMDS	Baseline Survey-no significant adverse effects to biota, water or sediment quality from previous dumping
Sediment Mapping	UGA Center for Applied Isotopes for EPA	February 1995	Characterization of bottom sediments using gamma spectrometry	Baseline Survey
Investigation of Dredged Sediment Movement and Fate	Evans Hamilton, Inc, for ERDC	2004	Describe sediment movement at the entrance to Brunswick Harbor	The Brunswick study was designed to provide an initial data set to assess the model’s performance for coastal regions similar to those at Brunswick, GA
Status and Trends Report	EPA	December 2007	Assess status of benthos and water column within and adjacent to ODMDS	Increased macroinvertebrate richness and density, but no significant differences found

Survey/Study Title	Conducted By	Date	Purpose	Results
Trend Assessment Report	EPA	August 2015	Assess status of benthos and water column within and adjacent to ODMDS	No significant differences found from previous assessments, with very low analyte levels in all tested media
MPRSA Section 103 Sediment Evaluation	ANAMAR	August 2016	To determine suitability of bar channel O&M sediment for ocean disposal	Sediment was suitable for disposal in the ODMDS
Bathymetric Survey	USACE	Before and After Disposal Event	Monitor bathymetry changes	Mounding exceeding the 30-foot threshold exists mainly in northern and southern portions of the ODMDS. The center portion of the site is the deepest.
Disposal Monitoring	USACE	During each Event	Compliance	Disposal has been occurring within the OMDDS boundaries

2.5 SITE CHARACTERIZATION

2.5.1 Physical Characterization

Results from the 2015 EPA Trends Assessment Survey describes sediments throughout the ODMDS and surrounding area to be primarily sand, ranging from approximately 84-100% (EPA, 2016). Within the sand fractions, fine sand was dominant, making up approximately 60-87% of the overall sediment percentage. The coarsest material observed from a sample was found within the ODMDS and contained 16% gravel (shell hash). The sample containing the finest material was observed outside the site with 10.1% fines (silt, clay) and the remainder fine sand.

2.5.2 Chemical Characterization

The 2015 EPA Trends Assessment Survey collected sediments to assess sediment chemistry, including analysis for PCBs, pesticides, semi-volatile organics, metals, total organic carbon, total solids, particle size distribution, organotins, and dioxins. Survey results showed all metals concentrations either below detectable levels or below listed environmental thresholds (NOAA Screening Quick Reference Tables; Buchman, 2008). Metals concentrations in sediment outside the site tended to be higher than inside the site. However, concentrations both inside and outside the site were low. Semi-volatile organics, pesticides, and butyltins were all at or below the minimum reporting limits. PCB levels were generally at or below the minimum reporting limits within the ODMDS with low level detections of some less toxic forms of dioxin compounds were measured within and outside of the ODMDS.

Analytical results for sediment and water at the Brunswick Harbor ODMDS indicated that concentrations of analytes within the ODMDS are indistinguishable from background concentrations of analytes outside the site (EPA 2016).

2.5.3 Biological Characterization

At the current time, no nearby biological resources have been identified that may potentially be impacted and, at the time of designation, no known hard-bottom areas are within proximity to ODMDS boundaries. The site has been designated as dispersive. This means that it is expected that material will move outside the site boundaries over time.

Changes in sediment composition may alter the benthic community structure. However, based on previous benthic studies, it is unlikely that permanent or long-term adverse impacts will result due to changes in sediment composition (Barry et al., 1996; Barry et al., 2006; EPA, 2016). The 2015 EPA Trends Assessment Survey found no statistical differences in macroinvertebrate communities inside versus outside the Brunswick Harbor ODMDS.

3 SITE MANAGEMENT

Appropriate management of an ODMDS assures that disposal activities do not unreasonably degrade or endanger human health, welfare, the marine environment, or economic potentialities (MPRSA section 103(a)). The primary objectives for management of an ODMDS include, but are not limited to:

- Protecting the marine environment, such that:
 - No unacceptable physical, chemical, or biological impacts occur inside or outside the disposal site; and
 - Adequate site monitoring is conducted to detect environmental impacts.
- Ensuring that disposed material (1) meets the suitability requirements of the ocean dumping regulations (40 CFR Parts 220 through 228) and (2) is consistent with national and regional guidance for the evaluation of dredged material proposed for ocean dumping.
 - Under MPRSA section 103, evaluation of any proposed dumping of dredged material into ocean waters must apply the EPA ocean dumping criteria. To apply the criteria, the Ocean Testing Manual, sometimes referred to as the Green Book (EPA/USACE, 1991), and the Southeast Regional Implementation Manual (SERIM; EPA/USACE, 2008) provide guidance for sampling, testing, and analysis of water, sediment, and biological tissue to evaluate the environmental acceptability of dredged material proposed for ocean disposal. The criteria prohibit the ocean dumping of uncharacterized materials (40 CFR 227.5(c)).
- Identifying management conditions to be implemented by the EPA and USACE, as well as conditions that should be required in permits and documents establishing the terms of a federal project applicable to transportation and dumping in ocean waters.
 - For Federal projects, the EPA should specify in the MPRSA concurrence letters that the EPA concurrence itself is conditioned on incorporation of the EPA concurrence conditions into any USACE federal contract documents.
- Maintaining a long-term disposal alternative for dredged material, while encouraging beneficial use of dredged material where practicable.
- Identifying a schedule or condition triggering a review or renewal of this SMMP.

SMMP sections 3.1 through 3.8 summarize the disposal operation conditions that will be considered for management of Brunswick Harbor ODMDS as described in 40 CFR 228.15(h)(8). Enforceable conditions for dredged material disposal operations at Brunswick Harbor ODMDS are drawn from USACE-issued permits and transportation and dumping authorization documents for federal projects. The conditions intended to be enforceable are identified in this SMMP as necessary under MPRSA section 103(a) or 103(e) and should be included as

conditions in the EPA’s concurrence if the permit or authorization documents do not already require such conditions.

Water quality compliance determinations will be made using a numerical model, such as the Short-Term FATE (STFATE) model, for evaluation of mixing during disposal. The general goal of the model is to increase the accuracy, reliability, and cost-effectiveness of dredged-material management activities in a timely manner (EPA and USACE, 1991). The STFATE model input parameters listed in Appendix A are specific to the Brunswick Harbor ODMDS. This model is used to predict the movement of dredged material disposed of in open waters and may result in increasing or lessening operational restrictions or the need for confined release zones to protect the environment and ensure regulatory compliance. Only dredged material determined to be suitable and in compliance with the Ocean Dumping Criteria (40 CFR Part 227) through the verification process by the USACE and EPA Region 4 is appropriate for transportation and disposal in the ODMDS.

The template language in Appendix B is intended to be applicable to dredging projects permitted by USACE (federal and non-federal) as well as to USACE-authorized federal dredging projects, regardless of whether government owned and operated dredging equipment or contracted equipment is used. Appendix C provides example language that USACE will use in development of contract specifications for use of the site in federal projects. The EPA’s concurrence should be conditioned on use of these specifications. The EPA may determine not to include one or more of the conditions identified in Appendices B or C. The EPA may also specify or confirm additional project-specific conditions in its concurrence.

Conditions and reporting requirements become enforceable when and as included in the disposal site designation regulation, in MPRSA section 103 permits, and in transportation and disposal-related authorizations for federal projects, including USACE federal contract documents or other federal project specification documents and the EPA’s concurrence on the evaluation.

Violations of the MPRSA by a permittee or dredging contractor—including conditions established in an MPRSA permit or federal project authorization—are subject to compliance action including suspension of disposal operations or possible assessment of substantial administrative, civil, or criminal penalties, or other injunctive remedies, as appropriate.

3.1 OCEAN DUMPING CRITERIA COMPLIANCE PROCESS

USACE uses the ocean dumping criteria when evaluating permit requests for (and implementing federal projects involving) the transportation of dredged material for the purpose of dumping it

into ocean waters. All disposal of dredged material in the ocean must comply with the ocean dumping criteria, and the EPA reviews the evaluations of compliance when reviewing permits and projects for written concurrence. Concurrence may include conditions that must be incorporated into the permit or project authorization documents.

In the case of federal navigation projects, USACE implements substantive MPRSA requirements directly in USACE projects involving transportation and ocean disposal of dredged materials, including through USACE contractors. Federal projects, though not required to have a permit, must adhere to the same criteria, factors to be evaluated, procedures, and requirements that apply to permits, including the process for evaluation of the project. Federal projects must receive the EPA's concurrence prior to authorization of transportation and disposal of dredged materials, and authorizing documents must contain any conditions included in the EPA's concurrence. The EPA and USACE will coordinate early in the contracting process so the USACE can incorporate any of the EPA's concurrence conditions into project authorization documents.

Dredging projects that are not federal projects involving ocean disposal of dredged material require an ocean dumping permit issued by USACE pursuant to MPRSA section 103. A summary of the permitting process can be found at: <https://www.epa.gov/ocean-dumping/ocean-disposal-dredged-material>.

3.2 DREDGED MATERIAL CHARACTERIZATION

Prior to any disposal of dredged material at Brunswick Harbor ODMDS, the EPA and USACE must evaluate the project applying the ocean dumping criteria (40 CFR Part 227) and USACE must specifically authorize the disposal under MPRSA section 103. It is important that the EPA and USACE agree on the sampling and analysis plan for each project *prior* to any sampling of proposed dredged material.

Guidance for a process to determine the suitability of dredged material proposed for disposal at the Brunswick Harbor ODMDS is described in the Ocean Testing Manual, sometimes referred to as the Green Book (EPA/USACE, 1991), and the Southeast Regional Implementation Manual (SERIM; EPA/USACE, 2008 or newest version).

Steps include:

1. Case-specific evaluation of proposed material against the exclusion criteria (40 CFR 227.13(b)).
2. Determination of the need to test non-excluded material, taking into consideration the time since previous testing and the potential of sediment contamination since last verification.
3. Conducting required testing to determine the suitability of the material for ocean disposal.

4. Review and evaluation of testing data results by USACE and the EPA to determine suitability.

Additional reviews by stakeholders including the public, states and other federal agencies would also be conducted through the USACE permitting or authorization processes.

Only material which USACE and the EPA have determined to be suitable and in compliance with the Ocean Dumping Criteria (40 CFR Part 227) may be considered for transportation and disposal in the Brunswick Harbor ODMDS. No disposal activities may occur at the site until the EPA reviews the testing data results and transmits its written concurrence that the material is acceptable for disposal at the site.

Materials disposed in the Brunswick Harbor ODMDS have historically ranged from 2-72 percent fine-grained material depending on their location along the length of the channel. Before 2012, nearshore feeder berms located along the channel were used frequently for disposal. Since 2012 only the ODMDS has been used. Two basic sources of sediment have been and are expected, in the future, to be disposed at the site: dredged sediment from annual maintenance of Brunswick Harbor and potentially new work material. Sediments dredged for navigation in Brunswick Harbor are derived mainly from ocean and estuarine sources. Shoals occur where specific physical factors promote deposition or movement of sediments. These factors may vary spatially and temporally.

Based on the type and volume of material disposed, various monitoring surveys can be used to examine if, and the direction, the disposed dredged material is moving, and the environmental effects to the site and adjacent areas caused by the material.

Sediment physical, chemical, toxicological, and bioaccumulation conditions at the ODMDS and of the dredge material to be placed in the ODMDS are described in *MPRSA Section 103 Sediment Evaluation Report for Brunswick Harbor Navigation Project, Brunswick, Georgia, ANAMAR Environmental Consulting, Inc., August 2016*, and Brunswick Harbor ODMDS - Trend Assessment Report, August 2015 (U.S. EPA), and briefly below.

3.3 DREDGED MATERIAL TRANSPORTATION AND DISPOSAL

3.3.1 Transportation of Dredged Material

No specific disposal route is required for this site.

3.3.2 Disposal Locations

The regulation at 40 CFR 227.28 requires that the release of dredged material into the ODMDS occur at least 330 feet (100 meters) inside ODMDS boundaries. Implementation of the buffer zone requirements ensures that the dredged material is deposited within the site boundaries and increases the likelihood that no material will leave the site as it falls to the seabed. The EPA and USACE may establish release zones within the site to maintain compliance with the ocean dumping criteria in 40 CFR 227.28. Disposal authorization documents (e.g., a permit or federal project contract term) must require that disposal be initiated within the applicable release zone boundary and completed (i.e., doors closed) prior to leaving the ODMDS.

The capacity of the ODMDS can be preserved whenever suitable sediments can be deposited in an approved nearshore placement area, rather than in the ODMDS. Nearshore placement of material may occur in the future provided the sediments are determined suitable and the placement is determined to be practicable.

3.3.3 Disposal Methods

For enforcement and compliance assurance purposes, closed doors should be defined to require both physically closed doors and a properly functioning hull status monitor indicating that the doors are closed. The monitoring plan and disposal authorization documents should specify methods to prevent mounding of dredged materials from becoming an unacceptable navigation hazard.

Dredged material shall be placed so depths will be no less than -25 feet MLLW (i.e., a clearance will be maintained 25 feet above the bottom) where a depth of -30 feet is the warning threshold for monitoring and management purposes. If -30 feet MLLW is reached, then management decisions will be made on future sediment disposal to avoid exceeding the -25 feet MLLW threshold. To maximize capacity and monitoring efforts, disposal shall be within a specific area within the ODMDS identified by the USACE in consultation with EPA Region 4.

To implement this provision, the USACE will coordinate with the EPA after the most recent post-disposal project bathymetric surveys are available to identify whether any disposal restrictions should be considered for the next sediment disposal event. Depths at the time of disposal will be monitored to detect if adjustments of disposal methods are needed to prevent unacceptable mounding (i.e., navigational hazards). The physical removal or leveling of material above -25 feet MLLW are potential management alternatives should mound heights occur that are greater than those elevations.

No specific disposal technique is required for this site. However, the USACE requires monitoring for sea turtles, Shortnose and Atlantic sturgeon, and North Atlantic right whales (NARW). To protect NARW, disposal vessel (either hopper dredge, support vessel, or tug and scow) speed and operation will be restricted in accordance with the most recent USACE South Atlantic Division Endangered Species Act Section 7 Consultation Regional Biological Opinion for Dredging of Material Placement Activities in the Southeast United States (SARBO). In addition, the disposal vessel's captain should be aware of the vessel approach restrictions in 50 CFR 224.103 which at the time of this SMMP prohibits approach within 500 yards of a right whale by vessel, aircraft, or any other means. Standard surveillance and evasive measures to protect sea turtles and marine mammals shall also be employed during all disposal operations at the ODMDS.

3.3.4 Disposal Times

Timing of disposal operations will be in accordance with the most recent USACE South Atlantic Division Endangered Species Act Section 7 Consultation Regional Biological Opinion for Dredging of Material Placement Activities in the Southeast United States (SARBO). As additional monitoring results are compiled, should any additional restrictions appear necessary, disposal activities will be scheduled to avoid adverse impacts.

3.3.5 Disposal Vessel Tracking

For all disposal activities at the Brunswick Harbor ODMDS, site users should be required to use an electronic tracking system (ETS), such as the Dredge Quality Management (DQM) system. An ETS enables surveillance of the transportation and disposal of dredged material. The USACE and the EPA maintain and operate the ETS to continuously track the horizontal location and draft condition of the disposal vessel from the point of dredging or loading to the disposal site and return to the point of dredging or loading (with accuracy ± 0.1 foot). Data shall be collected at least every 0.25 nautical mile or every four minutes during travel to and from the ODMDS and every 12 seconds or every 30 feet of travel within the ODMDS and while hull status is open. In addition to the continuous tracking data, the following trip information shall be electronically recorded for each disposal cycle:

- Load Number
- Disposal Vessel Name and Type (e.g. scow)
- Estimated volume of Load
- Description of Material Disposed

- Source of Dredged Material
- Date, Time and Location at Initiation and Completion of Disposal Event

Appendices B and C provide template language that should be used to address the requirement to use the ETS.

Disposal monitoring should be conducted utilizing the Dredge Quality Management (DQM) system [see <http://dqm.usace.army.mil/Specifications/Index.aspx>], or equivalent acceptable system. The USACE will provide (or require another user to provide) disposal monitoring data to EPA Region 4 electronically on a weekly basis (and/or within one week of the disposal event) utilizing XML format and delivered as an attachment to an email (DisposalData.R4@epa.gov).

3.4 DISPOSAL PERMITTING & REPORTING

3.4.1 Permitting Process

All transportation to and disposal of dredged material in the ocean, with the exception of federal civil works projects, requires an ocean dumping permit issued by the USACE pursuant to section 103 of the MPRSA. A summary of the permitting process can be found on both the EPA (<https://www.epa.gov/ocean-dumping/ocean-disposal-dredged-material>) and USACE websites (<https://www.sas.usace.army.mil/Missions/Regulatory/Permitting/>).

3.4.2 Information Management of Dredged Material Disposal Activities

As discussed in the following sections, a substantial amount of diverse data regarding use of the Brunswick Harbor ODMDS and effects of disposal is required from many sources. If this information is readily available and in a useable format it can be used to answer many questions typically asked about a disposal site including:

- What is being dredged?
- How much is being dredged?
- Where did the dredged material come from?
- Where was the dredged material placed?
- Was dredged material dredged correctly? Disposed correctly?
- What will happen to the environment at the disposal site?

To streamline data sharing, EPA Region 4 and the USACE South Atlantic Division have agreed on an eXtensible Markup Language (XML) standard for sharing of disposal monitoring data (see also section 4.4). Additional standards will continue to be investigated for sharing of other disposal site related information (e.g., environmental monitoring data, testing data, etc.).

3.4.3 Post Disposal Summary Reports

The USACE shall provide a Post Disposal Summary Report to the EPA within 90 days after project completion.

Necessary report elements include: dredging project title; permit number and expiration date (if applicable); contract number; name of contractor(s) conducting the work, name and type of vessel(s) disposing material in the ODMDS; disposal time from each vessel; volume disposed at the ODMDS (as paid *in situ* volume, total paid and un paid *in situ* volume, and gross volume reported by dredging contractor), number of loads to ODMDS, type of material disposed at the ODMDS; identification by load number of any misplaced material; dates of pre- and post-disposal bathymetric surveys of the ODMDS and a narrative discussing any violation(s) of the 103 concurrence and/or permit (if applicable).

The narrative should include a description of any violation(s), indicate the time it occurred and when it was reported to the EPA and the USACE, discuss the circumstances surrounding the violation(s), and identify specific measures taken to prevent reoccurrence.

The Post Disposal Summary Report must be accompanied by the bathymetry survey results (plot and X, Y, Z ASCII data file, optionally a GIS shapefile), a summary scatter plot of all disposal start locations, and a summary table of the trip information required by section 3.2 with the exception of the disposal completion data. If all data is provided in the required XML format, scatter plots and summary tables will not be necessary.

3.4.4 Project Initiation and Violation Reporting Requirements

The USACE or other site user should notify the EPA 15 days prior to the beginning of a dredging cycle or project disposal.

EPA Region 4 and the USACE Savannah District require notification by email within 24 hours if disposal occurs outside of the specified disposal release zone, if excessive leakage occurs, if hull open status occurs outside the ODMDS, or other violation of the conditions in the authorization documents and/or Dredged Material Permit occur. Excessive leakage is defined as more than 1.5 feet of draft loss during transit to the ODMDS averaged between forward and aft sensors.

Correspondence will be required to explain how the issue was addressed, pertinent dates, and corrective actions to be implemented to prevent repetition in the future.

4 SITE MONITORING

Site monitoring is conducted to ensure the environmental integrity of a disposal site and the areas surrounding the site as well as to verify compliance with the site designation criteria; any special management conditions; and permit, contract, or federal project authorization document requirements. Monitoring programs should be flexible, cost effective, and based on scientifically sound procedures and methods to meet site-specific monitoring needs. Tiered approaches to monitoring should be used where specific management actions or additional monitoring activities may be triggered when unacceptable environmental conditions are recorded.

Specific goals of the monitoring program are to provide the following:

1. Information indicating whether the disposal activities are occurring in compliance with the permit (or federal project authorization documents) and site restrictions;
2. Information on the short-term and long-term fate of materials disposed of in the marine environment; and,
3. Information concerning the short-term and long-term environmental impacts of disposal activities.

The site monitoring program describes the monitoring actions that should be taken if issues are found during routine trend assessment monitoring or any other means. A tiered strategy for a monitoring program is used to ensure that more advanced monitoring activities are used only when necessary. With a tiered approach, an unacceptable environmental condition may trigger further and often more complex monitoring and/or changes to the management of the site. Data collected during site monitoring should be used to adjust site management and/or revise the SMMP.

A monitoring program should be structured to address specific questions (i.e., hypotheses) and measure key indicators and endpoints, particularly those defined during site designation or specific project-related issues that arise. Multi-year trend analyses are outlined in the Ocean Dumping Regulations at 40 CFR 228.13; these analyses should be used to determine whether there are consistent changes from previous site conditions or baseline conditions. At a minimum, a Trend Assessment Study should be conducted at least once every 10 years and should be used to revise the SMMP. Results from these surveys should be used to assess the need for additional targeted or more complex studies.

The monitoring program for the Brunswick Harbor ODMDS is designed to address the following questions:

- *What are the short- and long-term fates of the material disposed at the site?*

This would include considerations such as:

- Does disposed dredged material remain within the site boundaries or leave the site?
- If any disposed material leaves the site, where does it go? Does it move toward sensitive areas such as marine sanctuaries or productive fisheries?
- Does disposed material create mounds within the site or result in a dispersed layer on the sea bottom?
- Is there a potential for interference with navigation due to mounding of disposed material?
- Was any material dumped outside of the site boundaries?

- *What are the short- and long-term environmental impacts of the disposal of material at the site?*

This would include considerations such as:

- Has the benthic community structure changed due to disposal activities?
- Is there an absence of pollution-sensitive biota at the site?
- Are there progressive, non-seasonal changes in water quality, sediment composition, or numbers of pelagic, demersal, or benthic biota at or near the disposal site?
- Has there been an increase in contaminant levels in the sediments or biota at or near the site?
- Are there any other impacts detected inside or outside the site boundaries?

Sections 4.1 and 4.2 below describe the monitoring strategy at the site to address these and other questions and also summarize the management actions that should be considered by the EPA, in coordination with USACE, if thresholds are exceeded.

4.1 MONITORING THE TRANSPORTATION, DISPOSAL, AND FATE OF DISPOSED MATERIALS

Monitoring the transportation and disposal process is necessary to confirm that the disposal activities comply with all permit conditions and site restrictions.

Monitoring the location and movement of disposed material at the site should be used to ensure that disposed material remains within the designated site boundaries to determine that any accumulation of disposed material does not pose a navigational hazard in the area, and to confirm that future site use will not exceed the site's capacity. The monitoring activities used to achieve each of these management goals are summarized in Table 4 below.

Table 4. Brunswick Harbor ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Option 1: Threshold Not Exceeded	Management Option 2: Threshold Exceeded
Monitor Bathymetric Trends	Bathymetry	Site User	Determine the extent of the disposal mound and major bathymetric changes	Post Disposal	Disposal mound occurs outside ODMDS boundaries	Continue monitoring	Modify disposal method or location Restrict disposal volumes
Benthic Effects Monitoring & Trend Assessment (40 CFR 228.13)	A. Sediment Profile Imaging B. Benthic Survey	EPA	A. Determine extent and effect of dredged material B. Determine impact of dredged material on benthic community	Every 10 years or following major disposal event	Communities under the influence of dredged material outside the site have significant differences in diversity/richness/biomass from those not under dredged material influence after one-year recovery period	Discontinue monitoring unless disposal quantities, type of material, or frequency of use significantly changes	Restrict disposal volumes to prevent impacts outside boundaries Create berms to retard dredged material movement Cease site use
Short & Long-Term Fate of Disposed Dredged Material	A. Modeling B. Erosional Analysis	USACE	Determine dispersiveness of site and extent of impact	Prior to any major project	Aerial extent of impact reaches resources of concern and /or increases over time	Continue to use site based on current thresholds/restrictions	Restrict disposal volumes Create berms to retard dredged material transport Cease site use/designate new site

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Option 1: Threshold Not Exceeded	Management Option 2: Threshold Exceeded
Site Capacity	Information from Long-Term Fate	USACE/ EPA/ Site Users	Determine dispersiveness of site and long and short-term capacity	Prior to any major project	New work and/or maintenance volumes exceed estimated capacity	Continue to use site based on current thresholds/restrictions	Enlarge site or designate new site
Ensure Safe Navigation Depth	Bathymetry	Site User	Determine height of mound and any excessive mounding	Post disposal	A. Mound height > -30 feet MLLW B. Mound height > -25 feet MLLW	Continue monitoring	A. (1) Modify disposal method or location and (2) Restrict disposal volumes B. (1) Halt disposal and (2) Physically level material
Compliance	Disposal Site User Records	Site User	Ensure management requirements are being met To assist in site monitoring	Daily during the project	A. Disposal records required by SMMP are not submitted or are incomplete B. Review of records indicated a dump occurred outside ODMDS boundaries C. Review of records indicated a dump occurred outside of ODMDS target area	Continue monitoring	A. Restrict site user until requirements are met B. Notify EPA Region 4/USACE, and investigate why egregious dump(s) occurred C. EPA may take appropriate enforcement action D. Direct disposal to occur as specified

4.1.1 Post-Disposal Monitoring Requirements

The USACE, or other site user, is required to conduct a bathymetric survey consistent with the pre-disposal survey requirements within 30 days after disposal project completion, unless a deviation is coordinated with the EPA. Surveys will generally not be required for projects less than 100,000 cy, except where needs are identified on a case-by-case basis. Surveys will conform to the minimum performance standards for USACE Hydrographic Surveys for “Other General Surveys & Studies” as described in the [USACE Engineering Manual, EM1110-2-1003, Hydrographic Surveying](#), dated November 30, 2013

(http://publications.usace.army.mil/publications/eng-manuals/EM_1110-2-1003_pfl/toc.htm).

The number and length of transects required will be sufficient to encompass the ODMDS and a 500-foot-wide area around the site. In coordination with the EPA, the Savannah District may reduce the survey area on a case-by-case basis if disposal zones are specified and adhered to. The surveys will be taken along lines spaced at 500-foot intervals or less. The minimum performance standards from Table 3-1 in Hydrographic Surveying shall be followed. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing Global Positioning System with Real Time Kinematic Correction (RTK). The vertical datum will be referenced to prescribed NOAA MLLW datum, 1983-2001 epoch, as shown on the Tidal Benchmark sheet for St. Simons Island, GA (Station ID: 8677344). MLLW is 4.20 feet below NAVD88. The horizontal datum will be Georgia State Plane (zone 1001 GA East, NAD 1983).

Bathymetric surveys should be utilized to monitor the disposal release zone to ensure a navigation hazard is not produced, to assist in verification of material disposal location, to monitor bathymetry changes and trends, and to ensure that the site capacity is not exceeded, i.e., the dredged sediment does not exceed the site boundaries on disposal. Copies of these surveys shall be provided to EPA Region 4 when completed.

USACE and the EPA will review the results of these surveys and determine whether more information is needed. This need will be based on observance of any anomalies or potential adverse impacts associated with a specific event. If the results of the bathymetric surveys do not indicate any anomalies or adverse impacts, no additional monitoring will be required for the disposal event.

4.2 MONITORING ENVIRONMENTAL EFFECTS OF DISPOSED MATERIAL

Monitoring of impacts to the physical, chemical, and biological environment is necessary to ensure that the transport and disposal of dredged material does not result in unreasonable

degradation to the marine environment or endanger human health, welfare, or economic potentialities.

The environmental effects monitoring plan for the Brunswick Harbor ODMDS summarized in Table 5 below is structured as a tiered monitoring approach; unacceptable conditions discovered during a lower tier assessment should trigger additional testing or other management action.

USACE and the EPA periodically assess environmental conditions of the entire site and surrounding area and consider other environmental data that may have been collected by other entities in the area; this information is then used to assess overall site conditions and to conduct trend assessments. Enhanced environmental effects monitoring should be triggered if disposed material is found to have unexpectedly left the site or is observed in unexpected locations during the transportation, disposal, and fate monitoring activities described in section 4.1.1. Any monitoring at the site that identifies an issue of potential concern should trigger additional monitoring or management actions.

Field monitoring data collected by the EPA such as material tracking, disposal effects monitoring, and other site-specific parameters will be coordinated with and provided to SMMP team members, federal and state agencies, and other interested parties as appropriate by the EPA and/or the USACE. Data will be provided for all surveys in a report generated by the EPA. The report should indicate how the survey relates to the SMMP and previous surveys at the Brunswick Harbor ODMDS and should provide data interpretations, conclusions, and recommendations, and should project the next phase of the SMMP. Monitoring results will be summarized in subsequent modifications to the SMMP and available by request (<https://www.epa.gov/ocean-dumping>).

Table 5: Environmental Impacts, Monitoring Activities, and Thresholds for Action.

Frequency	Entity	Monitoring Activity	Purpose	Threshold(s) for Action	Management Option 1: Threshold Not Exceeded	Management Option 2: Threshold Exceeded
Tier 1: Benthic Effects Monitoring & Trend Assessment (40 CFR 228.13)						
Approximately every 10 years	EPA	A. Sediment mapping B. Water and sediment quality, benthic community analysis (40 CFR 228.13)	A. Determine aerial influence of dredged material. B. Periodically evaluate the impact of disposal on the marine environment (40 CFR 228.9).	A. Absence of pollution-sensitive biota at the site B. Progressive non-seasonal changes in water or sediment quality.	Continue monitoring on prescribed schedule	A. Conduct Tier 2 or Tier 3 Environmental Effects Monitoring. B. Review dredged material evaluation procedures and amend, if necessary. C. Discontinue site use. De-designate.
Tier 2: Environmental Effects Monitoring						
Implement if disposal footprint extends beyond the site boundaries or if Tier 1 Trend Assessment results exceed established thresholds.	EPA/ USACE	A. Chemical monitoring B. Benthic community monitoring	A. Determine if sediment chemical contaminants are significantly elevated ¹ within, and outside of, site boundaries. B. Determine whether there are adverse changes in the benthic populations outside of the site and evaluate recovery rates.	A. Contaminants are found to be elevated in dredged sediments. B. Adverse changes observed outside of the site that may endanger the marine environment.	Discontinue specific event monitoring.	A. Conduct directed, specific contaminant monitoring to define extent of management action required. B. Perform biological testing on ODMS samples (Tier 3). C. Review and potentially alter dredged material evaluation procedures.

Frequency	Entity	Monitoring Activity	Purpose	Threshold(s) for Action	Management Option 1: Threshold Not Exceeded	Management Option 2: Threshold Exceeded
Tier 3: Advanced Environmental Effects Monitoring						
Implement if Tier 2 Environmental Effects Monitoring exceed established thresholds	EPA/USACE	A. Tissue chemical bioaccumulation analysis B. Benthic effects monitoring	A. Determine if the site is a source of adverse bioaccumulation which may endanger the marine environment. B. Determine if the site is a source of adverse sub-lethal ² changes in benthic organisms which may endanger the marine environment.	A. Benthic body burdens and risk assessment models indicate potential for food chain impacts. B. Sub-lethal effects are unacceptable.	Discontinue monitoring.	A. Implement case-specific management options (e.g., remediation, limits on quantities or types of material disposed). B. Discontinue site use.

¹Significantly elevated: Concentrations above the range of contaminant levels in dredged sediments that the EPA and the USACE found to be suitable for disposal at the ODMS based on use of the regional testing manual (SERIM).

²Examples of sub-lethal effects include without limitation the development of lesions, tumors, development abnormality, and/or decreased fecundity.

5 SUMMARY CONDITIONS FOR USE OF THE ODMDS

Use of the Brunswick Harbor ODMDS is only permitted upon adherence to the following conditions.

5.1 PROHIBITION ON TRASH AND DEBRIS

Only dredged material determined in advance by the EPA and the USACE to be suitable for ocean disposal may be discharged at the Brunswick Harbor ODMDS. Disposal shall be limited to suitable dredged material per the 40 CFR 228(h)(7). Uncharacterized dredged material, vessels, trash, and other debris are prohibited from being dumped at the site.

5.2 PROHIBITION ON LEAKING OR SPILLING DURING TRANSPORT

Excessive leakage/spillage or other loss of material means any loss of dredged material greater than limits established in the most current section 103 Concurrence, section 103 permit, and/or described within the USACE contract specifications (in any event loss of dredged material during transit to the ODMDS in open water) or exceeding 1.5 feet. Transportation of dredged material to the ODMDS may not begin or continue when weather and sea state conditions interfere with safe transportation and create risk of spillage, leaks, or other loss of dredged material during transit. Disposal vessels will not be authorized to load beyond a level at which dredged material would be expected to be spilled in transit under anticipated sea state conditions.

5.3 QUALITY CONTROL INSPECTOR AND SCOW CERTIFICATION CHECKLIST

Before any disposal vessel departs for the Brunswick Harbor ODMDS, a dedicated quality control inspector, identified and appointed by the dredging contractor, shall certify in writing that the disposal vessel is not overloaded and otherwise meets the conditions and requirements of a Scow Certification Checklist (Appendix D) that contains the substantive elements found in the example provided in this SMMP. If an alternate version of the Scow Certification Checklist is utilized, the EPA and the USACE must approve the proposed Scow Certification Checklist prior to the commencement of ocean disposal operations. As indicated in the USACE dredging specifications, no ocean disposal trip may be initiated until both the towing vessel captain and the quality control inspector have signed all relevant entries on the Scow

Certification Checklist. The inspector shall provide a summary of any discrepancies or inaccuracies on the Checklist in the site user's report to the EPA and the USACE.

5.4 DISPOSAL SITE BOUNDARIES

When dredged material is discharged within the ODMDS, no portion of the vessel from which the materials are released (e.g., hopper dredge or towed barge or scow) may be outside of the disposal site buffer boundary (see Figure 1). The vessel from which materials are released should similarly be fully within the designated disposal zone, as indicated by the work contract for each disposal event.

5.5 CLOSED DOOR HULL STATUS

Doors shall be in the closed state on any disposal vessel and discharges complete before exiting the boundaries of the ODMDS (Table 1). "Closed state" means having both fully and physically closed doors and a properly functioning hull status sensor indicating that the doors are fully closed. In the event that doors are not closing sufficiently, the vessel operator will need to implement a procedure to verify dredged material has been disposed of in the authorized release zone. One such practice is to circle within the ODMDS three times before exiting. Visual verification via remote camera is another option. All such incidents shall be reported to the USACE and the EPA within 24 hours and the vessel in which the malfunction occurred shall be repaired and verified as functional before returning to service.

5.6 VIOLATION NOTIFICATION

The site user shall report (refer to section 4.1.2) any anticipated, potential, or actual variances from compliance with these ocean dumping conditions, and any additional project-specific special conditions, to the USACE and the EPA within 24 hours of discovering such a situation. A message from an operational "e-mail alert" system, will be considered as fulfilling this 24-hour notification requirement when it includes the following information: description of the cause(s) of the problems, any steps taken to rectify the problems, and whether the problems occurred on subsequent disposal trips.

5.7 ADDITIONAL PROJECT-SPECIFIC CONDITIONS

Additional project-specific conditions or modifications to the standard conditions specified above may be required in the Dredged Material Permit if the USACE or the EPA determine additional or more specific conditions are necessary to facilitate safe use or accurate monitoring of the disposal site, or to prevent potential harm to the environment, including conditions specifying the timing of operations or methods of transportation and disposal.

5.8 ALTERNATIVE PERMIT/PROJECT CONDITIONS

Project-specific alternatives or modifications to the Standard and/or Project-Specific conditions specified above may be authorized, in advance, by the EPA and the USACE at their discretion, at the request of the site user. In such cases the site user must demonstrate to the satisfaction of the EPA and the USACE that:

- The alternative conditions are sufficient to accomplish the specific intended purpose of the original permit condition; and
- Disposal will not increase the risk of harm to the environment or the health or safety of persons; and
- The site user will not impede monitoring of compliance with the MPRSA, regulations promulgated under the MPRSA, or the permit or authorization issued under the MPRSA.

6 MODIFICATION OF THIS SMMP

This plan is effective and available for implementation from the date of final signature. The regulations designating ODMDSs require site users to comply with specific terms and conditions identified in the SMMP. The EPA, in conjunction with USACE, should review and revise this SMMP at least every 10 years, or sooner, if site use and conditions at the site indicate a need for revision. Conditions for updating this SMMP may include but are not limited to:

- Significant changes in disposal site use (change in frequency, site expansion, de-designation, new dredged material source location, etc.);
- Discovery of significant impacts to the physical, chemical, or biological environment during monitoring activities; and
- Any other conditions or changes at the site or area surrounding the site that may necessitate a review or update to the SMMP.

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APPENDIX A – STFATE INPUT PARAMETERS

BRUNSWICK HARBOR ODMDS WATER COLUMN EVALUATIONS NUMERICAL MODEL (STFATE) INPUT PARAMETERS

Table A1: SITE DESCRIPTION

Parameter	Value	Units
Number of Grid Points (left to right)	38	-
Number of Grid Points (top to bottom)	38	-
Spacing Between Grid Points (left to right)	500	ft
Spacing Between Grid Points (top to bottom)	500	ft
Constant Water Depth	30	ft
Roughness Height at Bottom of Disposal Site	0.005 ¹	ft
Slope of Bottom in X-Direction	0	Deg.
Slope of Bottom in Z-Direction	0	Deg.
Number of Points in Ambient Density Profile Point ²	4	-
Ambient Density at Depth = 0 ft	1.0229	g/cc
Ambient Density at Depth = 10 ft	1.0230	g/cc
Ambient Density at Depth = 16 ft	1.0235	g/cc
Ambient Density at Depth = 30 ft	1.0236	g/cc

Table A2: AMBIENT VELOCITY DATA

Parameter	Value	Units
Profile ³	2 Point (Constant depth)	-
Water Depth	30	ft
X-Direction Velocity = 0.1 feet	-0.63	ft/sec
Z-Direction Velocity = 0.1 feet	-0.63	ft/sec
X-Direction Velocity = 23.1 feet	-0.38	ft/sec
Z-Direction Velocity = 23.1 feet	-0.38	ft/sec

Table A3: DISPOSAL OPERATION DATA

Parameter	Value	Units
Location of Disposal Point from Top of Grid	9,375	ft
Location of Disposal Point from Left Edge of Grid	9,375	ft
Dumping Over Depression	0	-

Table A4: INPUT, EXECUTION AND OUTPUT

Parameter	Value	Units
Location of the Upper Left Corner of the Disposal Site - Distance from Top Edge	3,060	ft
Location of the Upper Left Corner of the Disposal Site - Distance from Left Edge	6,286	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Top Edge	15,690	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Left Edge	12,464	ft
Duration of Simulation	14,400	sec

Long Term Time Step	600	sec
---------------------	-----	-----

Table A5: SITE COEFFICIENTS

Parameter	Keyword	Value
Settling Coefficient	BETA	0.000 ¹
Apparent Mass Coefficient	CM	1.000 ¹
Drag Coefficient	CD	0.500 ¹
Form Drag for Collapsing Cloud	CDRAG	1.000 ¹
Skin Friction for Collapsing Cloud	CFRIC	0.010 ¹
Drag for an Ellipsoidal Wedge	CD3	0.100 ¹
Drag for a Plate	CD4	1.000 ¹
Friction Between Cloud and Bottom	FRICTN	0.010 ¹
4/3 Law Horizontal Diffusion Dissipation Factor	ALAMDA	0.001 ¹
Unstratified Water Vertical Diffusion Coefficient	AKYO	Pritchard Expression
Cloud/Ambient Density Gradient Ratio	GAMA	0.250 ¹
Turbulent Thermal Entrainment	ALPHAO	0.235 ¹
Entrainment in Collapse	ALPHAC	0.100 ¹
Stripping Factor	CSTRIP	0.003 ¹

¹ Model Default Value

² EPA 2006 Brunswick Harbor ODMDS Trend Assessment Survey (EPA, 2007a)

³ From measurements at the Brunswick Harbor ODMDS 2002-2003 (Evans Hamilton, 2004)
Dilution Rates for Generic Material (6,000cy)

Minimum dilution outside of disposal site: 150 to 1; Minimum dilution after 4 hours: 450 to 1.

Brunswick ODMDS STFATE Input Parameters

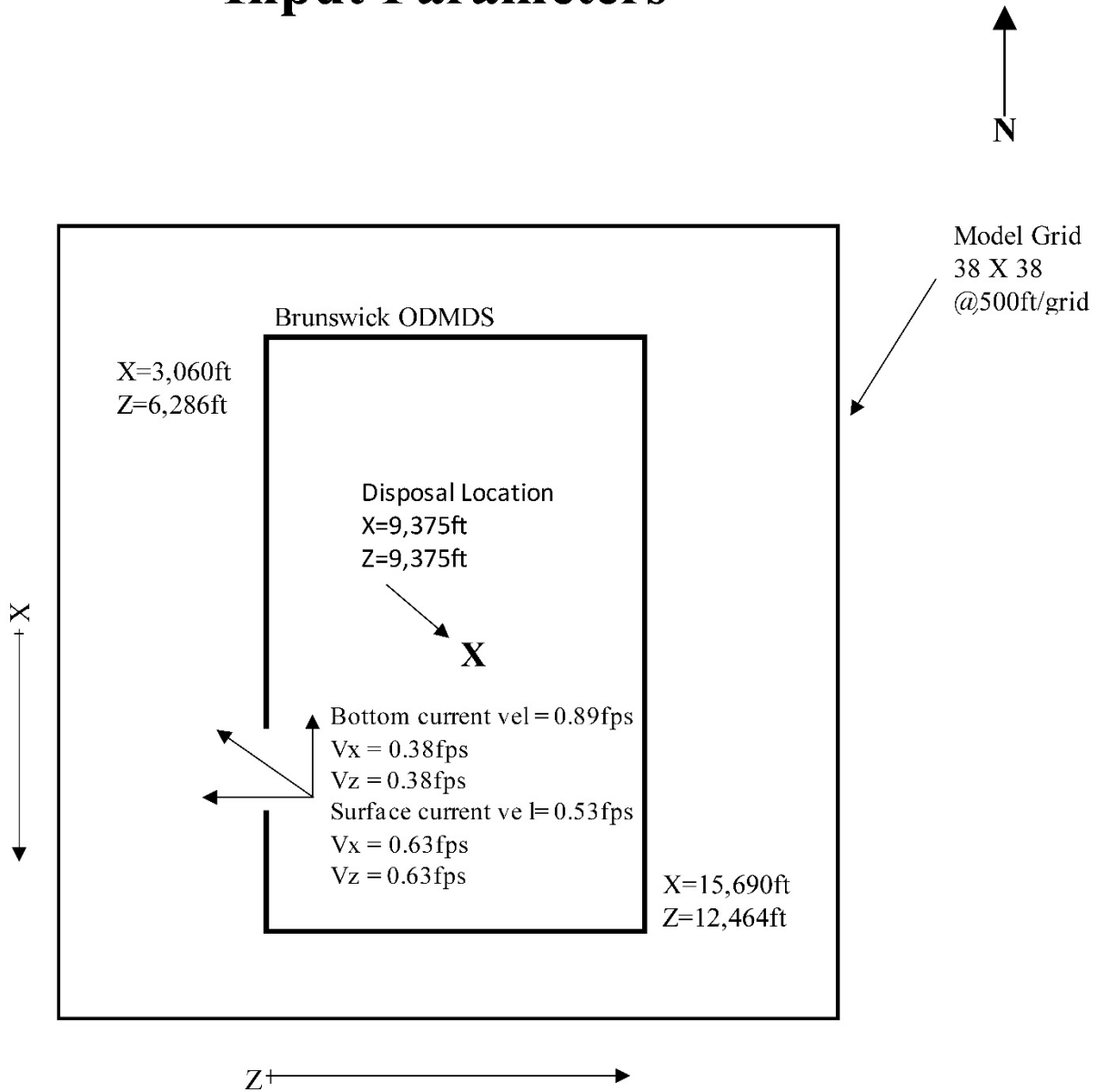


Table A6: Brunswick Harbor ODMDS Background Water Concentration

Chemicals of Concern	Background Concentration Levels (µg/l)
Arsenic	1.49 ¹
Cadmium	0.01 ¹
Chromium (VI)	0.29 ¹
Copper	0.24 ¹
Lead	0.08 ¹
Mercury	0.10 ^{1,4}
Nickel	0.25 ¹
Selenium	0.20 ¹
Silver	0.01 ^{1,4}
Zinc	1.11 ¹
Ammonia	No Data
Cyanide	No Data
Tributyltin (TBT)	0.01 ^{3,4}
Aldrin	0.005 ^{1,4}
Chlordane	0.015 ^{2,4}
DDT	0.005 ^{1,4}
Dieldrin	0.005 ^{1,4}
alpha – Endosulfan	0.005 ^{1,4}
beta – Endosulfan	0.005 ^{1,4}
Endrin	0.005 ^{1,4}
gamma-BHC (Lindane)	0.005 ^{1,4}
Heptachlor	0.005 ^{1,4}
Heptachlor Epoxide	0.005 ^{1,4}
Toxaphene	0.25 ^{1,4}

Parathion	No Data
Pentachlorophenol	No Data

¹ 2010 Site Designation Studies for a New ODMDS offshore Jacksonville, FL

² EPA 2006 Brunswick Harbor ODMDS Trend Assessment Survey (EPA, 2007a)

³ Reference Station Water from the 2006 Mayport Harbor 103 Evaluation

⁴ Analyte not detected. Value based on one half the reporting limit.

APPENDIX B –TEMPLATE GENERIC SPECIAL CONDITIONS FOR MPRSA SECTION 103 PERMITS

Template Generic Special Conditions for

MPRSA Section 103 Permits for the Brunswick Harbor ODMDS

MPRSA section 102(c)(3) directs the EPA in conjunction with USACE to develop a site management and monitoring plan (SMMP) for dredged material disposal sites; such plans are implemented through MPRSA permits issued by USACE or through federal projects subject to the same criteria, evaluation factors, procedures, and requirements as permits (including through terms and conditions in contracts for Federal projects).

The EPA in conjunction with USACE developed the template language below for inclusion in permits, though the template language is intended to be included on a case-by-case basis. Neither the SMMP nor this Appendix directly impose requirements specific to a permitted activity. Instead, the SMMP and this Appendix recommend conditions that USACE should impose and, if not, that the EPA should require in concurring on the permit. The regulation designating an ODMDS also may impose conditions on a permittee directly. The terms of any particular permit incorporating the language from this Appendix (including as modified) would impose requirements specific to the permitted activity. USACE is not obligated to impose any particular permit term based on the template language, though USACE may elect to do so; the language is provided to facilitate USACE permit development and to provide notice to third parties. For any future permit, the EPA's concurrence review would confirm that appropriate terms are included to assure adequate implementation of the SMMP, and the EPA would consider this Appendix to guide its review. The EPA may condition its concurrence on compliance with specified terms and conditions derived from this Appendix, or other terms and conditions deemed appropriate to implement this SMMP or the MPRSA, and in such cases USACE must include in the permit the terms and conditions specified by the EPA.

DISPOSAL OPERATIONS

- A. For this permit, the term disposal operations shall mean: navigation of any vessel used in disposal of operations, transportation of dredged material from the dredging site to the Brunswick Harbor ODMDS, proper disposal of dredged material at the disposal area within the Brunswick Harbor ODMDS, and transportation of the hopper dredge or disposal barge or scow back to the dredging site.

- B. The Brunswick Harbor ODMDS site corner coordinates are identified in Table B1.

Table B1: Brunswick Harbor ODMDS Corner Coordinates (NAD 83)

Vertex	Geographic		State Plane (Georgia East, Zone 1001)	
	Latitude (North)	Longitude (West)	Northing	Easting
NW	31°02.5974'N	81°17.7889'W	380497.54N	929375.49E
NE	31°02.5974'N	81°16.4888'W	380545.97N	935465.28E
SE	31°00.5141'N	81°16.4888'W	367916.67N	935566.74E
SW	31°00.5141'N	81°17.6888'W	367866.91N	929300.69E

- C. No more than [NUMBER] cubic yards of dredged material excavated at the location defined in [REFERENCE LOCATION IN PERMIT] are authorized for disposal at the Brunswick Harbor ODMDS.

- D. The permittee shall use an electronic positioning system to navigate to and from the Brunswick Harbor ODMDS. For this section of the permit, the electronic positioning system is defined as: a differential global positioning system or a microwave line of site system. Use of LORAN-C alone is not an acceptable electronic positioning system for disposal operations at the Brunswick Harbor ODMDS. If the electronic positioning system fails or navigation problems are detected, all disposal operations shall cease until the failure or navigation problems are corrected.

- E. The permittee shall certify the accuracy of the electronic positioning system proposed for use during disposal operations at the Brunswick Harbor ODMDS. The certification shall be accomplished by direct comparison of the electronic positioning system’s accuracy with a known fixed point.

- F. Before any disposal vessel departs for the Brunswick Harbor ODMDS, a dedicated quality control inspector shall certify in writing that the disposal vessel is not overloaded, and otherwise meets the conditions and requirements of a Scow Certification Checklist that contains all of the substantive elements found in the example provided in this SMMP in Appendix D. If an alternate version of the Scow Certification Checklist (Appendix D) is utilized, the EPA and the USACE must approve the proposed Scow Certification Checklist prior to the commencement of ocean disposal operations. No ocean disposal trip may be initiated until both the towing vessel captain and the quality control inspector have signed all relevant entries on the Scow Certification Checklist. The inspector shall provide a

summary of any discrepancies or inaccuracies on the Checklist in the site user's report to the EPA and the USACE.

- G. The permittee shall not allow any water or dredged material placed in a hopper dredge or disposal barge or scow to flow over the sides or leak from such vessels during transportation to the Brunswick Harbor ODMDS. Excessive leakage/spillage or other loss of material means an apparent loss of dredged material greater than limits established in the most current section 103 Concurrence, section 103 permit, and/or described within the USACE contract specifications in any event loss of dredged material during transit to ODMDS (in open water) is not to exceed 1.5 feet. Transportation of dredged material to the ODMDS may not begin or continue when weather and sea state conditions interfere with safe transportation and create risk of spillage, leaks, or other loss of dredged material during transit. Disposal vessels cannot be loaded beyond a level at which dredged material would be expected to be spilled in transit under anticipated sea state conditions.
- H. A disposal operations inspector and/or captain of any tugboat, hopper dredge or other vessel used to transport dredged material to the Brunswick Harbor ODMDS shall ensure compliance with disposal operation conditions defined in this permit.
1. If the disposal operations inspector or the captain detects a violation, he shall report the violation to the permittee immediately.
 2. The permittee shall contact the USACE, Savannah District's Regulatory Branch [TELEPHONE NUMBER] and EPA Region 4 via email and at (404) 562-xxxx to report the violation within twenty-four (24) hours after the violation occurs. A complete written explanation of any permit violation shall be included in the disposal summary report.
- I. When dredged material is disposed, no portion of the hopper dredge or disposal barge or scow shall be outside of the boundaries of the Brunswick Harbor ODMDS as defined in Special Condition B.
- J. For all disposal activities, permits and projects must use an electronic tracking system (ETS), such as the Dredge Quality Management (DQM) system. Appendices B and C provide template language that should be used. An ETS provides surveillance of the transportation and disposal of dredged material. An ETS is maintained and operated to continuously track the horizontal location and draft condition (accuracy \pm 0.1 foot) of the disposal vessel (i.e., hopper dredge or disposal scow) from the point of dredging to the disposal site and return to the point of dredging. Data shall be collected at least every 0.25 nautical mile or every four minutes during travel to and from the ODMDS and every 12 seconds or every 30 feet of travel within the ODMDS and while hull status is open.
- K. The permittee shall record electronically, for each load, the following information:

1. Load Number
 2. Disposal Vessel/Scow Name
 3. Estimated Volume of Load
 4. Description of Material Disposed
 5. Source of Dredged Material
 6. Date, Time, and Location at State of Initiation of Disposal and Completion of Disposal Event
 7. The ETS data required by Special Condition J
- L. The permittee shall conduct a bathymetric survey of the Brunswick Harbor ODMDS within 30 days following project completion.
1. The number and length of the survey transects shall be sufficient to encompass the release zone specified in Special Condition H and a 500-foot-wide border around the site. The transects shall be spaced at 500-foot intervals or less.
 2. Vertical accuracy of the survey shall be ± 0.5 feet. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing either microwave line of site system or differential global positioning system. The vertical datum shall be mean lower low water (MLLW) and the horizontal datum shall use state plane (Georgia East, Zone 1001) or latitude and longitude coordinates (North American Datum 1983). State Plane coordinates shall be reported to the nearest 0.10 foot and latitude and longitude coordinates shall be reported as decimal degrees to six decimal points.
- M. The permittee shall abide by the applicable National Marine Fisheries Service (NMFS) Biological Opinion (BO) – either the South Atlantic Regional Biological Opinion (SARBO 2020) for Operations and Maintenance activities, or the project specific BO for deepening and new construction projects. The BO covers 25 listed species including swimming sea turtles, whales, corals, and sturgeon. The RBO contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” that is also specified in the RBO. Your authorization under the Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take of the attached RBO, which terms and conditions are incorporated by reference in the permit. Failure to comply with the terms and conditions associated with the incidental take of the RBO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. However, depending on the affected species NMFS is the appropriate authority to determine compliance with the terms and conditions of its RBO and with the Endangered Species Act (ESA). For further clarification on this point, you should contact the appropriate agency. Should they determine that the conditions of the RBO have been violated; normally they will enforce the violation of the ESA or refer the matter to the Department of Justice.

REPORTING REQUIREMENTS

- A. All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following addresses: U.S. Army Corps of Engineers (Corps), Regulatory Division, Coastal Branch, 100 West Oglethorpe Avenue, Savannah, Georgia 31401 and Environmental Protection Agency Region 4 's Oceans and Estuarine Management Section (61 Forsyth Street, Atlanta, GA 30303) and via email at OceandumpingR4@epa.gov . The Permittee shall reference this permit number, [INSERT PERMIT NUMBER], on all submittals.
- B. At least 15 days before initiating any dredging operations authorized by this permit, the Permittee shall provide to the Corps and the EPA a written notification of the date of commencement of work authorized by this permit.
- C. Electronic data required by Special Conditions 1.J and 1.K shall be provided to EPA Region 4 on a daily basis. Data shall be submitted as an eXtensible Markup Language (XML) document via Internet e-mail to DisposalData.R4@epa.gov. XML data file format specifications are available from EPA Region 4.
- D. The permittee shall send one (1) copy of the disposal summary report to the Savannah District's Regulatory Branch and one (1) copy of the disposal summary report to EPA Region 4 documenting compliance with all general and special conditions defined in this permit. The disposal summary report shall be sent within 90 days after completion of the disposal operations authorized by this permit. The disposal summary report shall include the following information:
1. The report shall indicate whether all general and special permit conditions were met. Any violations of the permit shall be explained in detail.
 2. The disposal summary report shall include the following information: dredging project title; dates of disposal; permit number and expiration date; name of contractor(s) conducting the work, name and type of vessel(s) disposing material in the ODMDS; disposal timeframes for each vessel; volume disposed at the ODMDS (as paid *in situ* volume, total paid and un paid *in situ* volume, and gross volume reported by dredging contractor), number of loads to ODMDS, type of material disposed at the ODMDS; identification of any misplaced material (outside disposal release zone or the ODMDS boundaries); dates of pre and post disposal bathymetric surveys of the ODMDS and a narrative discussing any violation(s) of the 103 permit. The disposal summary report should be accompanied by the bathymetry survey results (plot and X, Y, Z ASCII data file).

APPENDIX C – GENERIC CONTRACT LANGUAGE

Generic Contract Specification Language for Use of the Brunswick Harbor ODMDS

MPRSA section 102(c)(3) directs the EPA in conjunction with USACE to develop site management and monitoring plans (SMMP) for dredged material disposal sites; such plans are implemented through MPRSA permits issued by USACE or through federal projects subject to the same criteria, evaluation factors, procedures, and requirements as permits. The EPA in conjunction with USACE developed the template language below for inclusion in USACE contracts or other project specifications for the transportation and disposal at the Brunswick Harbor ODMDS. The regulation designating an ODMDS may impose certain conditions and requirements on transportation to and dumping at the site directly. In addition, the terms of any particular contract or other project specification document for the transportation and disposal of dredged material at the Brunswick Harbor ODMDS can impose requirements specific to the project activity incorporating the language from this Appendix (including as modified). A particular contract can and often does also include a term requiring the site user or contractor to comply with specific terms and conditions derived from the SMMP. USACE is not obligated to impose any particular contract term based on the template language, though USACE may elect to do so; the language is provided to facilitate USACE contract development and to provide notice to third parties. For any future federal project, the EPA's concurrence review would confirm that appropriate terms are included to assure adequate implementation of the SMMP and the MPRSA, and the language in this Appendix is available to guide the EPA's review. The EPA may condition its concurrence on compliance with specified terms and conditions derived from this Appendix, or other terms and conditions deemed appropriate, and in such cases, USACE must include these terms and conditions in the contract documents.

A. General

All material dredged shall be transported to and deposited in the disposal area(s) designated on the drawings. The approximate maximum and average distance to which the material will have to be transported are as follows:

Disposal Area	Maximum Distance Statue Miles	Average Distance Statute Miles
Brunswick Harbor ODMDS [INSERT DISPOSAL ZONES AREA 2]	[XX miles]	[XX miles]

[IF MATERIAL FROM DIFFERENT PROJECT AREAS GO TO DIFFERENT DISOSAL AREAS, IT SHOULD BE SPECIFIED HERE]

B. Ocean Disposal Notification

The Corps or the contractor shall notify EPA Region 4's Oceans, Wetlands, and Stream Protection Branch via email at OceandumpingR4@epa.gov at least 15 calendar days and the local Coast Guard Captain of the Port at least five calendar days prior to the first ocean disposal. The notification should include the Contracting Officer (email CC). The following information shall be included in the notification:

- Project designation; Corps of Engineers’ Contracting Officer’s name and contract number; and the Contractor’s name, address, and telephone number.
- Port of departure.
- Location of ocean disposal area (and disposal zone(s)).
- Schedule for ocean disposal, giving date and time proposed for first ocean disposal.

C. Ocean Dredged Material Disposal Sites (ODMDS)

The material excavated shall be transported to and deposited in the Brunswick Harbor ODMDS as shown on the drawings. When dredged material is disposed, no portion of the hopper dredge or disposal barge or scow shall be outside of the boundaries of the Brunswick Harbor ODMDS.

D. Logs

The Contractor shall keep a log for each load placed in the Brunswick Harbor ODMDS. The log entry for each load shall include:

- Load Number
- Disposal Vessel or Scow Name
- Tow-Vessel Name (if used)
- Estimated Volume of Load
- Description of Material Disposed
- Source of Dredged Material
- Date, Time, and Location at State of Initiation of Disposal and Completion of Disposal Event
- The ETS data required by Special Condition I

At the completion of dredging and at any time upon request, the log(s) shall be submitted in paper and electronic formats to the Contracting Officer for forwarding to the appropriate agencies.

E. Scow Certification Checklist

Before any disposal vessel departs for the Brunswick Harbor ODMDS, a dedicated quality control inspector shall certify in writing that the disposal vessel is not overloaded, and otherwise meets the conditions and requirements of a Scow Certification Checklist that contains the substantive elements found in the example provided in this SMMP in Appendix D. If an alternate version of the Scow Certification Checklist (Appendix D) is utilized, the EPA and the USACE must approve the proposed Scow Certification Checklist prior to the commencement of ocean disposal operations. No ocean disposal trip may be initiated until both the towing vessel captain and the quality control inspector have signed all relevant entries on the Scow Certification Checklist. The inspector shall provide a summary of any discrepancies or inaccuracies on the Checklist in the site user's report to the EPA and the USACE.

F. Overflow, Spills, and Leaks

The permittee shall not allow any water or dredged material placed in a disposal vessel (i.e., a hopper dredge, disposal barge or scow) to flow over the sides or leak from such vessels during transportation to the Brunswick Harbor ODMDS. Excessive leakage/spillage or other loss of material means an apparent loss of dredged material greater than limits established in the most current

section 103 Concurrence, section 103 permit, and/or described within the USACE contract specifications. In any event, loss of dredged material during transit to ODMDS (in open water) is not to exceed 1.5 feet. Transportation of dredged material to the ODMDS may not begin or continue when weather and sea state conditions interfere with safe transportation and create risk of spillage, leaks, or other loss of dredged material during transit. Disposal vessels cannot be loaded beyond a level at which dredged material would be expected to be spilled in transit under anticipated sea state conditions.

G. Electronic Tracking System (ETS) for Ocean Disposal Vessels

The Contractor shall furnish an ETS for surveillance of the movement and disposition of dredged material during dredging and ocean disposal. This ETS shall be established, operated, and maintained by the Contractor to continuously track in real-time the horizontal location and draft condition (accuracy± 0.1 foot) of the disposal vessel (hopper dredge or disposal scow) from the point of dredging to the disposal site and return to the point of dredging. The ETS shall be capable of displaying and recording, in real-time, the disposal vessel’s draft, speed, and location. Data shall be collected at least every 0.25 nautical mile or every four minutes during travel to and from the ODMDS and every 12 seconds or every 30 feet of travel within the ODMDS and while hull status is open.

-----[USE LANGUAGE BELOW FOR NON DQM PROJECTS]

H. ETS Standards

The Contractor shall provide automated (computer) system and components to perform in accordance with COE EM 1110-1-2909. A copy of the EM can be downloaded from the following web site: <http://www.usace.army.mil/inet/usace-docs/eng-manuals/em.htm>. Horizontal location and draft condition shall have an accuracy of ± 0.1 foot.

Data shall be collected at least every 0.25 nautical mile or every four minutes during travel to and from the ODMDS and every 12 seconds or every 30 feet of travel within the ODMDS and while hull status is open. In addition to the continuous tracking data, the following trip information shall be electronically recorded for each disposal cycle:

- Load Number
- Disposal Vessel Name and Type (e.g., scow)
- Estimated volume of Load
- Description of Material Disposed
- Source of Dredged Material
- Date, Time and Location at Initiation and Completion of Disposal Event

The ETS shall be calibrated, as required, in the presence of the Contracting Officer at the work location before disposal operations have started, and at 30 day intervals while work is in progress. The Contracting Officer shall have access to the ETS in order to observe its operation. Disposal operations will not commence until the ETS to be used by the Contractor is certified by the Contracting Officer to be operational and within acceptable accuracy. It is the Contractor's responsibility to select a system that will operate properly at the work location. The complete system shall be subject to the Contracting Officer's approval.

ETS Data Requirements and Submissions

1. The ETS for each disposal vessel shall be in operation for all dredging and disposal activities and shall record the full round trip for each loading and disposal from the point of dredging to the disposal site and return to the point of dredging. The Contracting Officer shall be notified immediately in the event of ETS failure and all dredging operations for the vessel shall cease until the ETS is fully operational. Any delays resulting from ETS failure shall be at the Contractor's expense.
2. Data shall be collected, during the dredging and disposal cycle (NOTE: A dredging and disposal cycle constitutes the time from commencement of dredging to complete discharge of the material), at least every 0.25 nautical mile or every four minutes during travel to and from the ODMDS and every 12 seconds or every 30 feet of travel within the ODMDS and while hull status is open.
3. Plot Reporting (Two types):
 - a. Tracking Plot - For each disposal event, data collected while the disposal vessel is in the vicinity of the disposal area shall be plotted in chart form, in 200-foot intervals, to show the track and draft of the disposal vessel approaching and traversing the disposal area. The plot shall identify the exact position at which the dump commenced.

- b. Scatter Plot - Following completion of all disposal events, a single and separate plot will be prepared to show the exact disposal locations of all dumps. Every plotted location shall coincide with the beginning of the respective dump. Each dump shall be labeled with the corresponding Trip Number and shall be at a small but readable scale.
 - c. Summary Table – A spreadsheet which contains all of the information in the log(s) above shall be prepared and shall correspond to the exact dump locations represented on the Scatter Plot.
4. ETS data and log data required by section 3.2 shall be provided to EPA Region 4 on a weekly or more frequent basis (within one week of disposal). Data shall be submitted to EPA Region 4 as an eXtensible Markup Language (XML) document via Internet e-mail to DisposalData.R4@epa.gov. XML data file format specifications are available from EPA Region 4. EPA Region 4 and the USACE District require notification by email within 24 hours if disposal occurs outside of the specified disposal release zone, if excessive leakage occurs, if hull open status occurs outside the ODMDS, or other violation of the conditions in this SMMP occur. Excessive leakage is defined as more than 1.5 feet of draft loss during transit to the ODMDS averaged between forward and aft sensors. Correspondence will be required to explain how the issue was addressed, pertinent dates, and corrective actions to be implemented to prevent repetition in the future. All digital ETS data shall be furnished to the Contracting Officer within 24 hours of collection. The digital plot files should be in an easily readable format such as Adobe Acrobat PDF file, MicroStation DGN file, JPEG, BMP, TIFF, or similar. The hard copy of the ETS data and tracking plots shall be both maintained onboard the vessel and submitted to the Contracting Officer on a weekly basis.

-----[FOR DQM PROJECTS]

See: <https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/Dredging-Quality-Management/Specifications/Dredge-Specifications/>.

For scows, the monitoring profile, TDS profile or Ullage profile shall be used.

I. Misplaced Materials

For civil works projects, materials deposited outside of the disposal release zone specified in 3.3.3 will be classified as misplaced material and will result in a suspension of dredging operations. Redredging of such materials will be required, where applicable, as a prerequisite to the resumption

of dredging unless the Contracting Officer, at his discretion, determines that redredging of such material is not practical. If redredging of such material is not required, then the quantity of such misplaced material may be deducted from the Contractor's pay quantity. If the quantity for each misplaced load to be deducted cannot initially be agreed to by both the Contractor and Contracting Officer, then an average hopper/scow load quantity for the entire contract will be used in the determination. Both regulatory and civil works projects misplaced loads may be subject to penalty under the Marine, Protection, Research and Sanctuaries Act. Materials deposited above the maximum indicated elevation or outside of the disposal area template shown will require the redredging, relocation, or removal of such materials. In addition, the Contractor must notify the USACE Contracting Officer and the EPA Region 4's Oceans & Estuarine Management Section (61 Forsyth Street, Atlanta, GA 30303) within 24 hours of a misplaced dump or any other violation of the Site Management and Monitoring Plan for the Brunswick Harbor ODMDS. Corrective actions must be implemented prior to the next dump and the Contracting Officer must be informed of actions taken.

APPENDIX D – SCOW CERTIFICATION CHECKLIST TEMPLATE

SCOW CERTIFICATION CHECKLIST		USACE PERMIT or CONTRACT #		4/17/2015
[PROJECT NAME]		DATE:		
CHECKLIST ITEM	RECORD DATA <small>TO BE FILLED OUT AND SIGNED WITHIN 1 HOUR PRIOR TO DEPARTURE TIME IN NO. 3.</small>	INITIALS		
		CONTRACTOR	Permittee or Authorized Representative	
1. OCEAN DISPOSAL TRIP NUMBER				
2. DEPARTURE DATE TO ODMDS				
3. DEPARTURE TIME TO ODMDS				
4. DEPARTURE LOCATION (dredge, berth, etc.)				
5. SCOW NAME				
6. SCOW CAPACITY (CY)				
7. TUG NAME				
8. TUG CAPTAIN'S NAME				
9. DREDGED MATERIAL SOURCE (area, reach, berth, etc.)				
10. CUBIC YARDS HAULED				
11. SCOW FORE DRAFT / AFT DRAFT / AVG AND TIME				
12. SCOW FORE DRAFT / AFT DRAFT / AVG AND TIME (must be at least one hour prior to time in No. 11)				
13. DRAFT CHANGE (No 12 - No. 11)				
14. FREEBOARD OF MATERIAL AND/OR WATER SURFACE				
15. NWS COASTAL MARINE FORECAST (out to 20 nm)	DATE / TIME OF REPORT			
[area]	WAVE HT (FT)			
WRITE-IN APPROPRIATE FORECAST PERIODS (ie, TODAY, TONIGHT, TOMORROW)	WIND SPEED (KTS)			
	PERIOD (SEC)			
	COMMENTS:			
16. SCOW TRACKING SYSTEM FUNCTIONING?	<input type="checkbox"/> YES <input type="checkbox"/> NO			
17. HELMSMAN DISPLAY FUNCTIONING ON TUG?	<input type="checkbox"/> YES <input type="checkbox"/> NO			
18. GPS FUNCTIONING ON TUG?	<input type="checkbox"/> YES <input type="checkbox"/> NO			
19. COMMENTS				
20. CONTRACTOR'S SIGNATURE	PRINT NAME:	TIME / DATE:		
21. PERMITTEE/REPRESENTATIVE'S SIGNATURE	PRINT NAME:	TIME / DATE:		
22. THE DECISION TO PROCEED TO THE OCEAN DISPOSAL SITE, BASED UPON ALL AVAILABLE DATA INCLUDING THE RECORDING AND CALCULATIONS ON THIS FORM, IS ALSO SUBJECT TO THE PROFESSIONAL JUDGEMENT OF THE TUG CAPTAIN AS TO THE SAFETY OF THE CREW AND VESSEL.				
TUG CAPTAIN'S SIGNATURE:	PRINT NAME:	TIME / DATE:		
DATE/TIME OF DUMP: _____				
BARGE X OR LONGITUDE: _____				
BARGE Y OR LATITUDE: _____				
TUG X OR LONGITUDE: _____				
TUG Y OR LATITUDE: _____				
DATE/TIME OF DISPOSAL VESSEL CLOSURE: _____				
BARGE X OR LONGITUDE: _____				
BARGE Y OR LATITUDE: _____				
TUG X OR LONGITUDE: _____				
TUG Y OR LATITUDE: _____				
<u>ADDITIONAL COMMENTS, PROBLEM DESCRIPTIONS, ETC.</u>				

APPENDIX E – DISPOSAL HISTORY

Table E1. Brunswick Harbor ODMDS annual disposal volumes (1976 – 2012)

Year	Cubic Yards
1976	2,260,700
1977	800,000
1978	2,449,900
1979	57,400
1980	2,246,900
1982	817,700
1983	685,100
1984	1,674,800
1986	2,583,000
1987	309,100
1988	1,993,400
1989	1,500,700
1991	1,215,000
1993	1,472,200
1995	988,100
1996	803,501
1997	1,076,261
1998	1,088,977
1999	948,158

2000	1,332,000
2001	1,459,163
2002	584,075
2004	1,567,328
2005	965,962
2008	306,033
2012	264,527