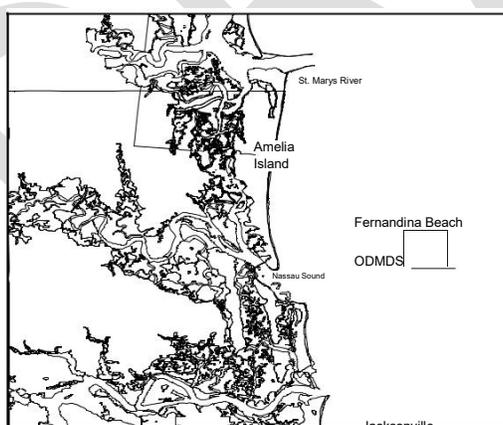
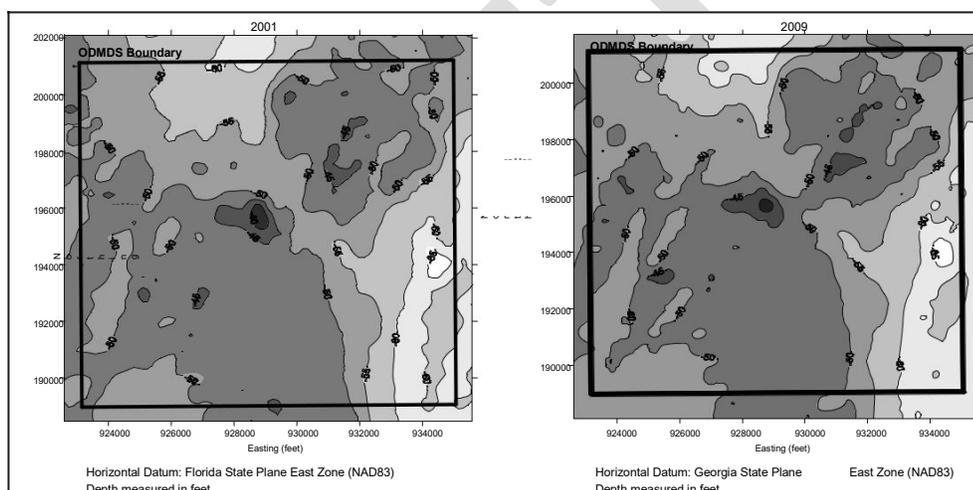




U.S. Army Corps of
Engineers

FERNANDINA BEACH OCEAN DREDGED MATERIAL DISPOSAL SITE

SITE MANAGEMENT AND MONITORING PLAN



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**FERNANDINA BEACH
OCEAN DREDGED MATERIAL DISPOSAL SITE (ODMDS)
SITE MANAGEMENT AND MONITORING PLAN**

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1.0 Introduction

It is the responsibility of the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) under the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 to manage and monitor each of the Ocean Dredged Material Disposal Sites (ODMDSs) designated by the EPA pursuant to Section 102 of the MPRSA. Section 102(c)(3) of the MPRSA requires the development of a Site Management and Monitoring Plan (SMMP) for each ODMDS and review and revision of the SMMP no less frequently than every ten years. The 1996 *Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites* (EPA/USACE, 1996) and the most recent EPA, Region 4 and USACE South Atlantic Memorandum of Understanding (EPA/USACE, 2017) have been used as guidance in developing this SMMP.

A SMMP was first developed for the Fernandina Beach ODMDS in December 1998. An addendum to the SMMP was issued in October 2001. An updated SMMP was then released in 2010. This revision to the Fernandina Beach SMMP supersedes the 2010 SMMP. Upon finalization of this revised SMMP, the SMMP provisions shall be the requirements for all dredged material disposal activities at the site. All Section 103 (MPRSA) ocean disposal permits or contract specifications shall be conditioned as necessary to assure consistency with the most recent version of the SMMP.

1.1 Site Management and Monitoring Plan Team

An interagency SMMP team was established to assist EPA and USACE in developing the 1998 Fernandina Beach ODMDS SMMP. The team consisted of the following agencies and their respective representatives:

- Jacksonville District, U.S. Army Corps of Engineers
- Florida Department of Environmental Protection, Office of Intergovernmental Programs
- State of Georgia
- U.S. EPA, Region 4
- U.S. Navy
- Fernandina Ocean Highway and Port Authority
- National Marine Fisheries Service (NMFS)

These agencies will continue to be consulted by EPA and the USACE in revisions to the Fernandina Beach ODMDS SMMP. The team will assist EPA and USACE on deciding appropriate disposal practices, appropriate monitoring techniques, the level of monitoring, the significance of results, and potential management options.

Specific responsibilities of EPA and the Jacksonville District U.S. Army Corps of Engineers are:

- **EPA:** EPA is responsible for designating/ de-designating MPRSA Section 102 Ocean Dredged Material Disposal Sites, for evaluating the environmental effects of disposal of dredged material at these sites, and for reviewing and concurring on dredged material suitability determinations, when appropriate.
- **USACE:** The USACE is responsible for evaluating dredged material suitability, issuing MPRSA Section 103 permits, regulating site use, and developing and implementing disposal monitoring programs.

2.0 Site Management

Section 228.3 of the Ocean Dumping Regulations (40 CFR §220-229) states: “Management of a site consists of regulating times, rates, and methods of disposal and quantities and types of materials disposed of; developing and maintaining effective ambient monitoring programs for the site; conducting disposal site evaluation and designation studies; and recommending modifications in site use and/or designation.”

2.1 Disposal Site Characteristics

The designation of the Fernandina Beach ODMDS can be found in 40 CFR §228.15(h)(8). It was designated by EPA through promulgation of a final rule on February 23, 1987, effective March 25, 1987. The Fernandina Beach ODMDS is an approximately 2 nautical mile (nmi) by 2 nmi square area centered at the coordinates 30°32.00’N latitude and 81°18.00’ W longitude (NAD 27). The site coordinates are provided in Table 1.

Table 1. Fernandina Beach ODMDS Site Location Coordinates

	Geographic (NAD27) ¹		Geographic (NAD83) ²	
	Y-Northing	X-Easting	Y-Northing	X-Easting
Center	30E32.0000’N	81E18.0000’W	30E32.0144’N	81E17.9884’W
NW Corner	30E33.0000’N	81E19.1333’W	30E33.0144’N	81E19.1218’W
NE Corner	30E33.0000’N	81E16.8667’W	30E33.0144’N	81E16.8550’W
SW Corner	30E31.0000’N	81E19.1333’W	30E31.0144’N	81E19.1218’W
SE Corner	30E31.0000’N	81E16.8667’W	30E31.0144’N	81E16.8550’W
	State Plane		State Plane	
	(FL East 0901 Ft NAD83)		(GA East 1001 Ft NAD83) ³	
	Y-Northing	X-Easting	Y-Northing	X-Easting
Center	2254105 N	561778 E	195092 N	929074 E
NW Corner	2260183 N	555848 E	201108 N	923081 E
NE Corner	2260152 N	567740 E	201200 N	934973 E
SW Corner	2248060 N	555814 E	188985 N	923172 E
SE Corner	2248028 N	567710 E	189076 N	935069 E

¹ The Fernandina ODMDS Site Designation (40 CFR §228.15(h)(8)) utilizes the North American Datum of 1927 (NAD 27).

² GPS is referenced to the World Geodetic System 1984 (WGS 84) and ninety-nine percent of NOAA nautical charts are on the North American Datum of 1983 which, for charting purposes, is considered equivalent to WGS 84. The NAD27 positions were transformed to NAD83(86) using the National Geodetic Survey program NADcon.

³ Surveys conducted for the Kings Bay Entrance Channel dredging are typically performed using the Georgia East Zone coordinate system

The site is 7.1 nmi (13.2 kilometers (km)) offshore (as measured to the center) and 11.8 nmi (21.9 km) from the entrance to the St. Mary's River. It has an area of approximately 4 nmi² (13.7 km²). Figure 1 shows the location of the Fernandina Beach ODMDS. As of 2019, it had a depth range of 44 to 66 feet (13.4 to 20.1 meters), with an average depth of 52 feet (15.8 meters).

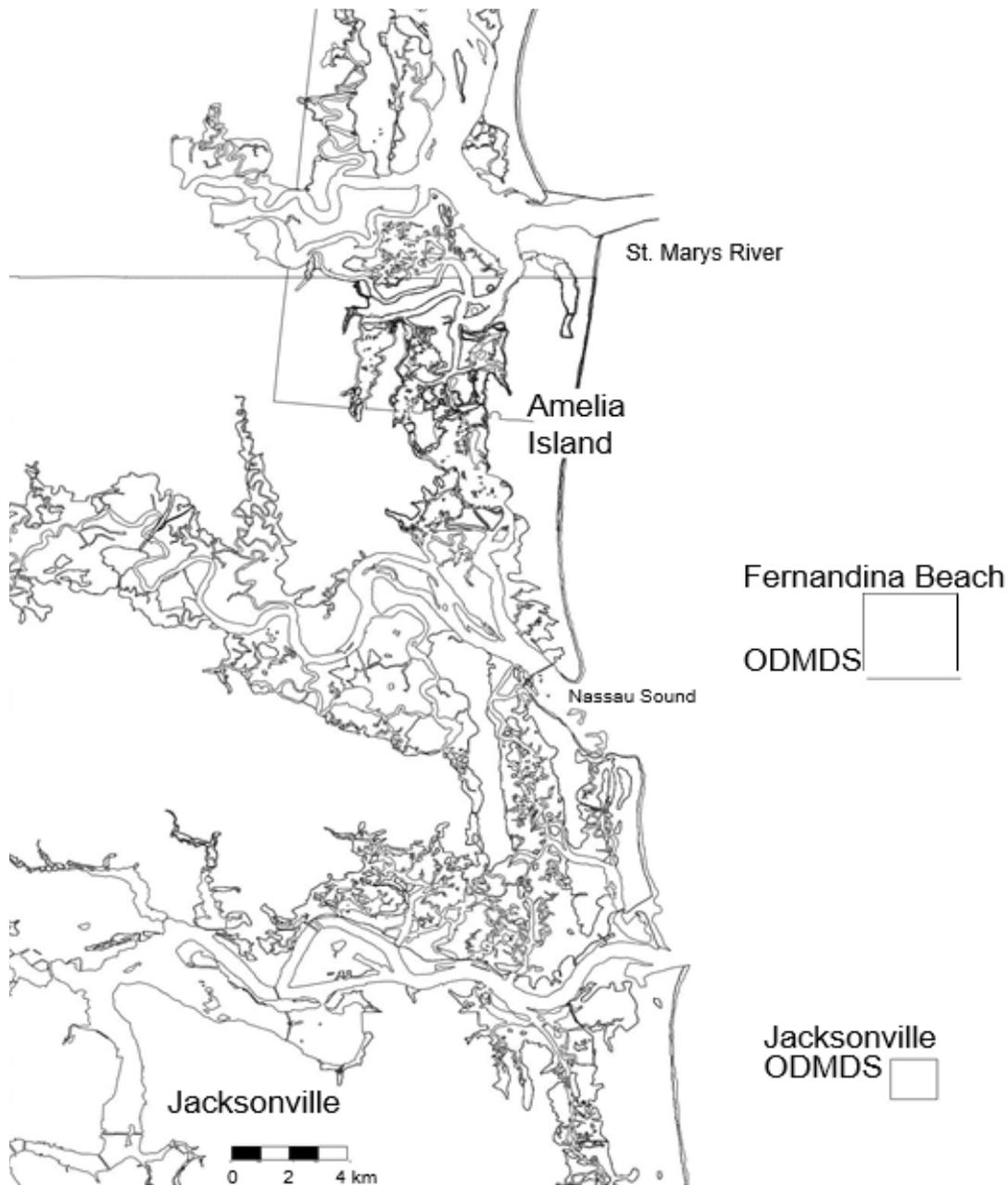


Figure 1. Location of Fernandina Beach ODMDS.

Figure 2 shows the most recent bathymetry of the Fernandina Beach ODMDS. There is a small mound in the center of the site, with the deepest portions to the southeast consisting of a north/south-oriented depression. The benthos consists of mostly sands with some areas of gravel.

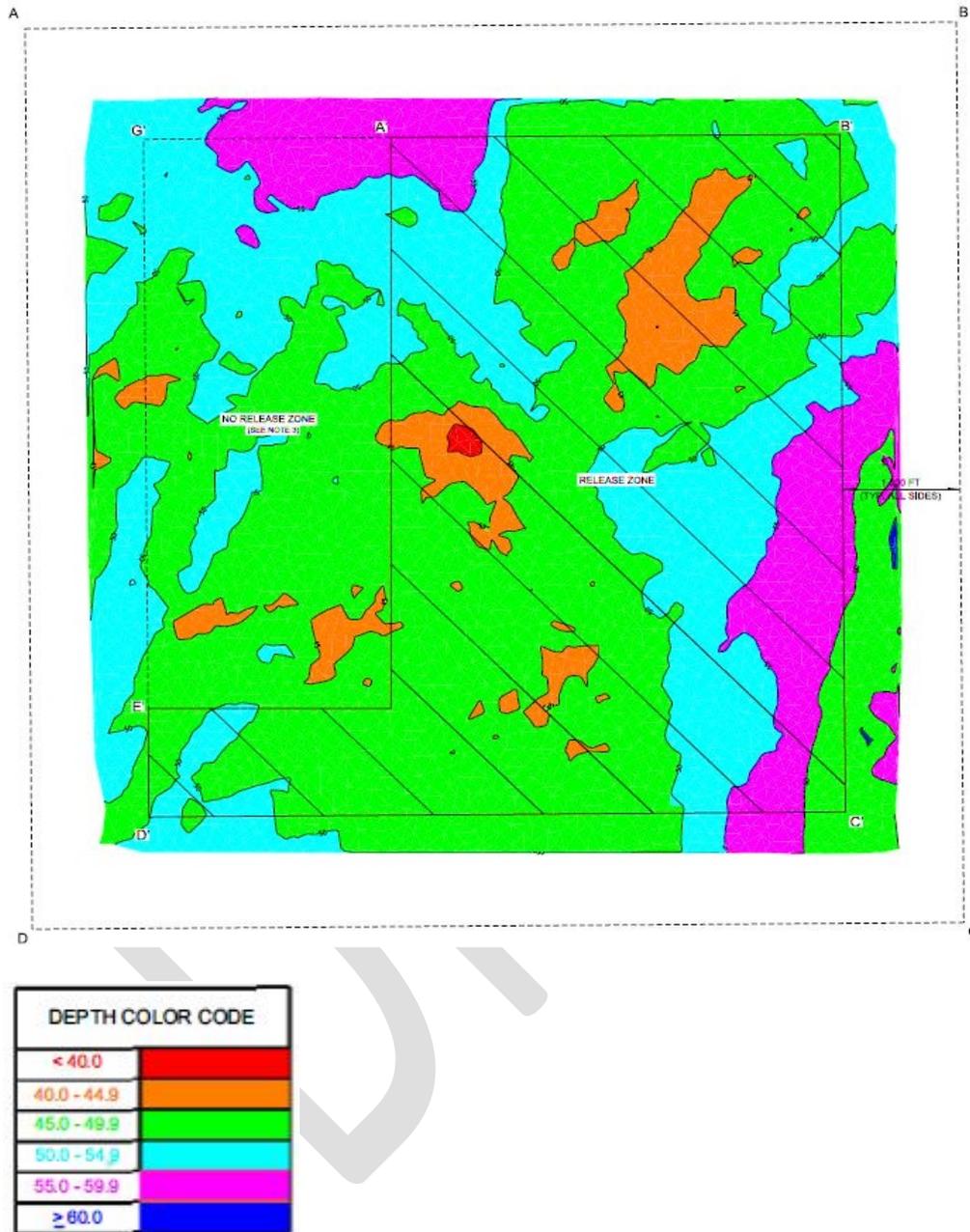


Figure 2. Fernandina Beach 2019 ODMDS Bathymetry

2.2 Management Objectives

Appropriate management of an ODMDS is aimed at assuring that disposal activities will not unreasonably degrade or endanger human health, welfare, the marine environment, or economic

potentialities (MPRSA §103(a)). The primary objectives in the management of the Fernandina Beach ODMDS are:

- Protection of the marine environment;
- Documentation of disposal activities and compliance; and
- Maintenance of a long-term disposal alternative for dredged material generated in the vicinity of Northeast Florida.

The following sections provide the framework for meeting these objectives to the greatest extent possible.

2.3 Disposal History and Dredged Material Volumes

The Fernandina Beach ODMDS has been used for the ocean disposal of dredged material since 1987. Material disposed prior to 1987 was disposed at an interim site located north of the Fernandina Beach ODMDS, near the St. Mary's Entrance Channel. The interim site designation was cancelled by the designation of the current ODMDS on March 25, 1987. Table 2 outlines the history of disposal of material from Fernandina Harbor and King's Bay Entrance Channel at the Fernandina Beach ODMDS. Material from the King's Bay Entrance Channel is a combination of a civil works project and U.S. Navy permitted work. Fernandina Harbor is a civil works project. A total of approximately 20 million cubic yards of dredged material has been disposed of at the Fernandina Beach ODMDS. Most of this material is maintenance material from the King's Bay Entrance Channel, which averages 626,000 cubic yards of silty dredged material per year.

The Jacksonville District of the U.S. Army Corps of Engineers has projected disposal of an average of 600,000 cubic yards of dredged material every year from the maintenance of the King's Bay Entrance Channel, and up to 1 million cubic yards per dredging event from the Inner Channel and Turning Basin. Dredging from the Inner Channel and Turning Basin is infrequent. Additional potential projects that could utilize the ODMDS as a disposal site include the Fernandina Harbor Inner Channel, Cuts 1 through 6, estimated to contain 200,000 cubic yards of silty dredged material and the berthing areas adjacent to the federal project maintained by the Fernandina Ocean and Highway Port Authority or the Fernandina Beach City Marina.

Table 2. Disposal History at the Fernandina Beach ODMDS (disposal quantities in cubic yards).

Year	Fernandina Harbor Inner Channel & Turning Basin	Kings Bay Entrance Channel	Year Total	Notes
1988		5,600,000 (NW) 720,029 (M)	6,320,029	Silt
1989		156,425 (M)	156,425	Cut 1N, silt
1990		1,364,387 (M)	1,364,387	Cut 1N, silt
1991		620,237 (M)	640,237	Cut 1N, silt
1992		36,000 (M)	36,000	Cut 1N, silt
1993		672,645 (M)	672,645	Cut 1N, silt
1994	943,183 (M)	350,550 (M)	1,293,733	E.C.: Cut 1N, silt
1995		183,360 (M)	183,360	Cut 1N, silt
1996		915,510 (M)	915,510	Cut 1N, silt
1997		420,581 (M)	420,581	Cut 1N, silt
1998		805,376 (M)	805,376	Cut 1N, silt
1999		766,662 (M) ¹	766,662	Entrance Channel
2000	298,845 (M) ¹	831,590 (M) ¹	1,130,435	Entrance Channel & Inner Channel
2001		771,887 (M) ¹	771,887	Entrance Channel
2002		761,486 (M) ¹	761,486	Entrance Channel
2003		750,530 (M) ²	750,530	Cut 1N, silts and clays
2004		850,792 (M) ²	850,792	Cut 1N, silts and clays
2005		447,273 (M) ²	447,273	Cut 1N, silts, clays and shell
2006		368,209 (M) ²	368,209	Cut 1N, silts and clays
2007		578,311 (M) ²	578,311	Cut 1N, silts, clays, sand and shell
2008		752,479 (M) ²	752,479	Cut 1N, silts and sands
2009		264,477 ³	264,477	E.C.: Cut 1N
2010		1,052,387 (M) ³	1,052,387	E.C.: Cut 1N
2011		644,025 (M) ³	644,025	Entrance Channel
2012		537,986 (M)	537,986	Silt & sand
2013		678,885 (M)	678,885	E.C.: Silty sand and shell
2014		643,567 (M) ¹	643,567	E.C.: Silty sand and shell
2015		605,081 (M) ¹	605,081	E.C.: Cut-1N, C, D, E silt, sand, shell
2016		730,678 (M) ¹	730,678	E.C.: Cut-1N through Range E silt, sand and shell
2017		700,284 (M) ¹	700,284	E.C.: Silty sand and shell
2018		571,656 (M)	571,656	E.C.: Cut-1N Through Range E
2019		687,610 (M) ¹	687,610 (M) ¹	E.C.: Cut-1N
Total	1,242,028		27,102,983	

M/NW: M=maintenance material; NW=new work material

Volumes from 1988 through 1998 were reported in the 1998 SMMP as hauled volumes. For consistency, all volumes are now reported as paid *in situ* volumes.

¹ from USACE SAJ Post Disposal Summary Report

² from 2009 emails from Katherine Roark, USACE SAJ

³Volumes from CESAJ-Operations Division

The U.S. Navy estimated the remaining volume of the Fernandina Beach ODMDS at 65 million cubic yards in 2008. Based on subsequent disposal, approximately 59 million cubic yards remain. Although this is a rough estimate, it shows that site capacity is not currently a concern, and no disposal volume restrictions are warranted at this time. Site capacity should continue to be re-evaluated with each review and revision to this SMMP.

2.4 Dredged Material Characteristics

The composition of dredged material dumped at the Fernandina Beach ODMDS has consisted mostly of silty sediments as shown in Table 2 above. Material from the project areas are described as follows: 1) Fernandina Harbor Inner Channel and Turning Basin: predominately gray, slightly silty fine sand and gray, silty fine sand; 2) King's Bay Entrance Channel: predominately dark brown and brown/gray slightly silty fine brown sand with some shells.

The disposition of any significant quantities of beach-compatible sand from future projects will be determined during permitting activities for any such projects. It is expected that the States of Florida and Georgia will exercise their authority and responsibility regarding beach nourishment, to the full extent during any future permitting activities. Utilization of any significant quantities of beach-compatible dredged material for beach nourishment is strongly encouraged and supported by EPA. Disposal of non-beach quality sand should be planned to allow the material to be placed so that it will be within or accessible to the sand-sharing system, to the maximum extent practicable, and following the provisions of the Clean Water Act. Disposal of coarser material, such as boulders, should be coordinated with the local agencies, the States of Florida and Georgia, as well as the EPA to promote possible beneficial uses of the material.

The suitability of dredged material for ocean disposal must be verified by the USACE and agreed to (concurred) by EPA prior to disposal. Verification will be valid for three years from the time last verified. Verification will involve: 1) a case-specific evaluation against the exclusion criteria (40 CFR §227.13 (b)), a determination of the necessity for testing, including bioassays (toxicity and bioaccumulation) for non-excluded material based on the potential for contamination of the sediment since last tested, and 3) carrying out the testing (where needed) and determining if the non-excluded, tested material is suitable for ocean disposal.

Documentation of suitability will be completed prior to use of the site. Documentation will be in the form of a MPRSA Section 103 evaluation. The evaluation and any testing will follow the procedures outlined in the 1991 EPA/USACE Dredged Material Testing Manual and the 2008 Southeast Regional Implementation Manual (SERIM) (or any subsequent, approved revisions). This includes how dredging projects will be subdivided into project segments for sampling and analysis. The MPRSA Section 103 evaluation will be in the form outlined in Appendix B of the SERIM. Water Quality Compliance determinations should be made using the STFATE (ADDAMS) model and the input parameters provided in Appendix A or approved modifications. Only material determined to be suitable through the verification process by the USACE and EPA Region 4 will be placed at the Fernandina Beach ODMDS.

2.5 Time of Disposal

At present, no restrictions have been determined to be necessary for disposal related to seasonal variations in ocean current or biotic activity. Dredging is typically restricted to the winter months due to hopper dredging sea turtle restrictions. During the winter, precautions necessary to protect North Atlantic Right Whales (NARW), as described in the next paragraph, are required.

2.6 Disposal Technique and Route

No specific disposal technique is required for this site. However, to protect NARW, disposal vessel (either hopper dredge 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 Channels and Borrow Areas in the Southeastern United States. 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.

2.7 Disposal Location

Disposal shall occur no less than 1,500 feet inside the site boundaries. This buffer is defined by the coordinates provided in Table 3 (multiple datums and coordinate systems are provided for completeness).

Table 3. Disposal Release Zone

	Geographic (NAD27) ¹		Geographic (NAD83) ²	
NW Corner	30E32.7526°N	81E18.8475°W	30E32.7670°N	81E18.8359°W
NE Corner	30E32.7526°N	81E17.1526°W	30E32.7670°N	81E17.1409°W
SW Corner	30E31.2475°N	81E18.8475°W	30E31.2619°N	81E18.8359°W
SE Corner	30E31.2475°N	81E17.1525°W	30E31.2619°N	81E17.1408°W
	State Plane		State Plane	
	(FL East 0901 Ft NAD83)		(GA East 1001 Ft NAD83) ³	
	Y-Northing	X-Easting	Y-Northing	X-Easting
NW Corner	2258679 N	557344 E	199620 N	924592 E
NE Corner	2258656 N	566237 E	199688 N	933485 E
SW Corner	2249556 N	557319 E	190496 N	924661 E
SE Corner	2249532 N	566214 E	190565 N	933557 E

¹ The Fernandina ODMDS Site Designation (40 CFR §228.15(h)(8)) utilizes the North American Datum of 1927 (NAD 27).

² GPS is referenced to the World Geodetic System 1984 (WGS 84) and ninety-nine percent of NOAA nautical charts are on the North American Datum of 1983 which, for charting purposes, is considered equivalent to WGS 84. The NAD27 positions were transformed to NAD83(86) using the National Geodetic Survey program NADcon.

³ Surveys conducted for the Kings Bay Entrance Channel dredging are typically performed using the Georgia East Zone coordinate system

Modeling efforts have shown that this buffer will contain the initial disposal mound within the site boundaries for projects up to 5.7 million cubic yards *in situ* (U.S. Navy, 2008). Projects greater than this amount are not expected, however, if proposed, modeling will be required to

determine an appropriate buffer to contain the initial disposal mound within the ODMDS boundaries.

Furthermore, the rubble area north of 30° 31.500' N (GA State Plane East Y=191,959ft) and west of 81° 18.245' W (GA State Plane East N=927,750ft) (as indicated in Figure 3) shall be closed from all future disposal activities, or until further monitoring indicates that this area is no longer functioning as productive habitat.

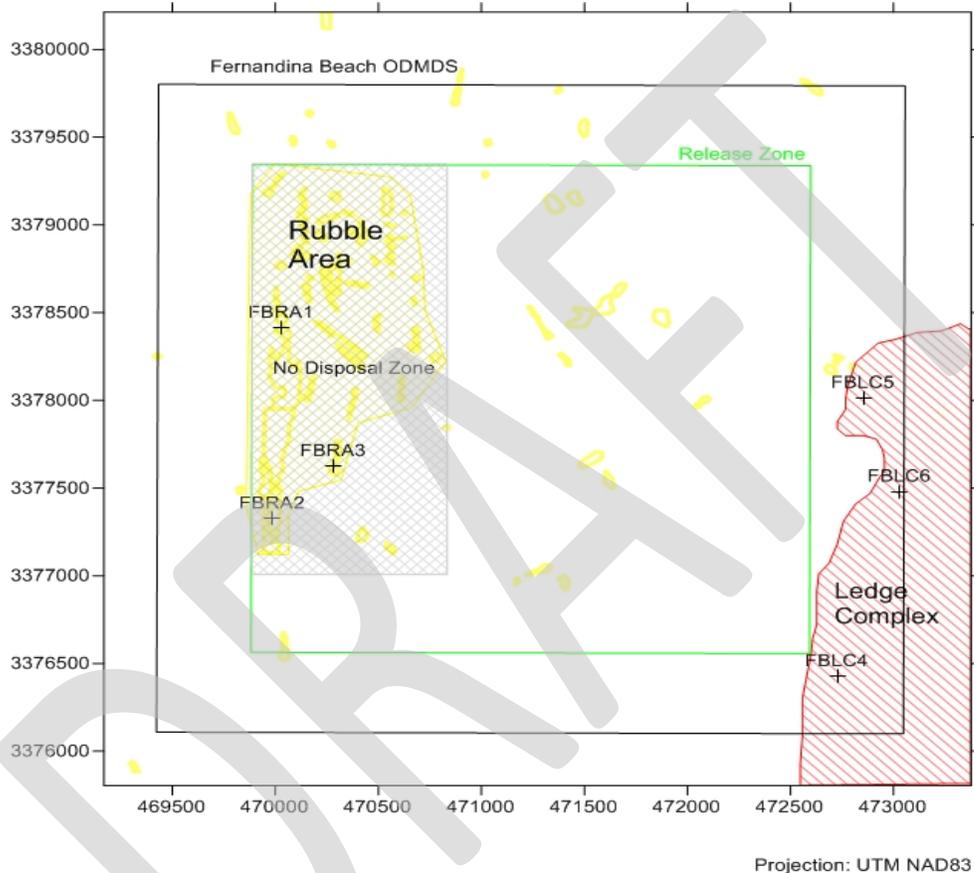


Figure 3. Disposal exclusion area, Fernandina Beach ODMDS

Placement methods which prevent mounding of dredged materials from becoming an unacceptable navigational hazard will be used. Dredging material shall be placed so that at no point will depths less than -25 feet Mean Lower Low Water (MLLW) occur (i.e. a clearance of 25 feet above the bottom will be maintained). To maximize the ODMDS capacity and minimize mounding of material, the dumps shall be scattered throughout specified disposal zones and not placed repeatedly at one location. When necessary, the USACE in consultation with EPA Region 4 will specify zones within the ODMDS for dredged material from each specific ocean dumping activity. Depths at the time of disposal will be monitored to detect if adjustments of disposal methods are needed to prevent unacceptable mounding.

Leakage or spillage out of barges, dump scows, or hopper dredges of water and/or excavated material while en route to the ODMDS disposal release zone(s) is prohibited. Transit to the ODMDS begins as soon as dredged material loading into the disposal vessel is completed and the vessel begins moving to the ODMDS. Disposal shall be initiated within the disposal release zone and shall be completed (doors closed) prior to departing the ODMDS. All hopper doors, dump scow doors, or split hull dumping mechanisms shall be closed and sealed prior to exiting the ODMDS as documented by the hull sensors.

2.8 Permit and Contract Conditions

The disposal monitoring and post-disposal monitoring requirements described under Site Monitoring (Section 3.0) will be included with the site management requirements described in this section as permit conditions on all MPRSA Section 103 permits and will be incorporated into the contract language for all federal projects. A summary of the site management and monitoring requirements to be included is listed in Table 4. Template language that can be used is included in the Appendices (see Appendix B and C).

Table 4. *Summary of permit and contract conditions.*

Condition	Reference
Dredged Material Suitability and Term of Verification	Fernandina Beach SMMP page 7; SERIM
Disposal Release Zone	Fernandina Beach SMMP page 8
Disposal Monitoring	Fernandina Beach SMMP page 14
Post Bathymetric Surveys	Fernandina Beach SMMP page 14
Reporting Requirements	Fernandina Beach SMMP page 17-18

2.9 Permit Process

All disposal of dredged material in the ocean, except for 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 at <https://www.epa.gov/ocean-dumping/ocean-disposal-dredged-material>.

2.10 Information Management of Dredged Material Placement Activities

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

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

To streamline data sharing, EPA Region 4 and USACE South Atlantic Division have agreed on an eXtensible Markup Language (XML) standard for the sharing of disposal monitoring data (see also Section 3.6). Additional standards will continue to be investigated for sharing of other disposal site-related information (e.g. environmental monitoring data, testing data, etc.).

3.0 Site Monitoring

The MPRSA establishes the need for including a monitoring program as part of the Site Management and Monitoring Plan. Site monitoring is conducted to ensure the environmental integrity of a disposal site and the areas surrounding the site, and to verify compliance with the site designation criteria, any special management conditions, and with permit requirements. Monitoring programs should be flexible, cost-effective, and based on scientifically sound procedures and methods to meet site-specific monitoring needs. The intent of the program is to provide the following:

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

The main purpose of a disposal site monitoring program is to determine whether dredged material site management practices, including disposal operations, at the site need to be changed to avoid significant adverse impacts on the marine environment.

3.1 Baseline Monitoring

Site characterization surveys of the ODMDS have been conducted by EPA and the USACE as part of the designation process prior to use of the site. They are available in the designation Supplemental Environmental Impact Statement Appendices A through E (EPA, 1986). These surveys and the subsequent surveys summarized in Table 5 will serve as the main body of data for future monitoring of the impacts associated with the use of the Fernandina Beach ODMDS.

Table 5. History of monitoring at the Fernandina Beach ODMDS.

Survey Title	Conducted By	Date	Purpose	Conclusions
<i>Field Survey of the Fernandina Candidate Ocean Dredged Material Disposal Site</i>	Continental Shelf Associates, Inc.; USACE-SAJ	1986	Physical, chemical, and biological characterization of the ODMDS	Included physical and chemical analysis of the sediments; chemical analysis of the water column; characterization of the benthic macroinvertebrates, meiofauna and macroepifauna; chemical analysis of fish and invertebrate tissue samples. A video survey and bathymetry of the site was also completed.
<i>Final Gamma Radiation Surveillance of Dredged Spoil Site Sediments at Fernandina Beach</i>	US EPA Region 4 and Center for Applied Isotope Studies	1987	Baseline for future surveys	No significant difference between stations inside site boundaries and stations outside site boundaries.
<i>Post disposal Areal Mapping of Sediment Chemistry at Fernandina Beach</i>	U.S. EPA Region 4 and Center for Applied Isotope Studies	1989	Conduct sediment mapping of site to determine location of dredged material	Identified two mounds in eastern half of ODMDS as dredged material.
<i>Fernandina Harbor, Florida, ODMDS, Benthic Communities</i>	U.S. EPA Region 4 and Vittor & Associates	1989	Benthic infaunal survey	Infaunal communities were generally similar in 1985 and 1989, although species abundance was generally higher. Some changes occurred in the relative abundance of dominant taxa, but most taxa that were dominant in 1985 were also dominant in 1989.
<i>Bathymetry Survey</i>	USACE SAJ	Feb. 1999	Monitor bathymetric trends	Minimum depth of 40.5 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	April 2001	Monitor bathymetric trends	Minimum depth of 33.7 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	March 2002	Monitor bathymetric trends	Minimum depth of 33.3 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	Nov 2004	Monitor bathymetric trends	Minimum depth of 40.0 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	May 2005	Monitor bathymetric trends	Minimum depth of 38.2 feet mllw.
<i>Post Disposal Status & Trends Survey</i>	EPA Region 4 and Barry Vittor and Associates	Aug 2005	Assess the extent and trends of environmental impact. (Includes assessment of the macroinfaunal communities within and outside of the ODMDS, sediment grain size, sediment chemistry and water quality)	Water column is well mixed with no elevations in chemical concentrations and no indication of low dissolved oxygen. No significant increase in fines within the ODMDS detected. No increase in sediment chemistry inside the site compared to outside the site. Benthic macroinfauna is similar inside the site to that outside the site.

<i>Post Disposal Bathymetry Survey</i>	USACE SAJ	Mar 2006	Monitor bathymetric trends	Minimum depth of 36.3 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	Jun. 2007	Monitor bathymetric trends	Minimum depth of 36.9 feet mllw.
<i>Ocean Current & Wave Measurements</i>	EPA Region 4	Aug 2006-Sept 2007	Determine wave and current climate for water quality modeling and capacity modeling.	Currents dominated by tides in the nnw and sse direction. Median surface current=17cm/s. Median bottom current=10cm/sec. Median wave height=0.8m.
<i>Bathymetry Survey</i>	USACE SAJ	March 2008	Monitor bathymetric trends	Minimum depth of 36.3 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	April 2009	Monitor bathymetric trends	Minimum depth of 37.3 feet mllw.
<i>Post-Disposal Status and Trends Survey</i>	EPA Region 4 and Barry Vittor and Associates	August 2015	Assess the extent and trends of environmental impact. (Includes assessment of the macroinfaunal communities within and outside of the ODMDS, sediment grain size, sediment chemistry and water quality)	Physically, sediments inside and outside the ODMDS have become slightly sandier compared to the 2005 results. Metals, semi-volatile organics, pesticides, PCBs, and butyltins were all either below detectable levels or below listed thresholds of toxicity li Some less toxic forms of dioxins and furans were detected in sediments inside and outside the ODMDS. Infaunal assemblages are substantially the same inside the ODMDS as compared to outside the ODMDS and are representative of relatively undisturbed benthic communities.
<i>Assessment of Dredged Material Created Habitat in the South Atlantic Bight</i>	EPA Region 4 and NOAA National Centers for Coastal Ocean Science	August-September 2016	Establish common monitoring protocols for assessing benthic biological habitats and fish communities using methods comparable to rocky reef and artificial reef visual assessment surveys previously conducted in the region. Evaluate fishery acoustic surveys and metrics of remotely sensed fish density as measures of the habitat value and beneficial use of rocky dredge material disposed of at the Fernandina Beach ODMDS.	Mapped approximately 7,000 acres of seafloor. Fish densities surveyed at night using acoustic methods were much higher in the natural ledge area slightly outside the ODMDS. Fish densities observed during the day were highly variable, with generally higher densities associated with the natural ledge features. However, several high-relief, high-rugosity sites in the disposal area also had high densities of primarily schooling fishes. This initial finding suggests that taller disposal sites may provide higher habitat value to fishes.
<i>Bathymetry Survey</i>	USACE SAJ	April 2017	Monitor bathymetric trends	Minimum depth of 38.1 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	May 2018	Monitor bathymetric trends	Minimum depth of 38.0 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	Nov/Dec 2018	Monitor bathymetric trends	Minimum depth of 38.3 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	May/June 2019	Monitor bathymetric trends	Minimum depth of 38.5 feet mllw.

3.2 Disposal Monitoring

For all disposal activities, an electronic tracking system (ETS) must be utilized. The ETS will provide surveillance of the transportation and disposal of dredged material. The ETS will be maintained and operated to continuously track the horizontal location and draft condition (to the nearest ± 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 miles or every 4 minutes during travel to and from the ODMDS and every twelve seconds or every 30 feet of travel, whichever is smaller, while the hull status is open within the ODMDS. In addition to the continuous tracking data, the following trip information shall be electronically recorded for each disposal cycle:

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

It is expected that disposal monitoring will be conducted utilizing the Dredging Quality Management (DQM) system for Civil Works projects (see <https://dqm.usace.army.mil/>). Disposal monitoring and ETS data will be reported to EPA Region 4 on a weekly basis utilizing the eXtensible Markup Language (XML) specification and protocol per Section 3.6. EPA Region 4 and the USACE Jacksonville District shall be notified within 24 hours if disposal occurs outside of the ODMDS or specified disposal zone or if any apparent leaking or spilling of dredged material occurs as indicated by a loss of disposal vessel draft. The draft change threshold for notification will be determined at the time of project authorization under Section 103 of the MPRSA.

3.2 Post-Discharge Monitoring

The USACE or other site user will conduct a bathymetric survey within 30 days after disposal project completion. Surveys will not be required for projects less than 50,000 cubic yards. Surveys will conform to the minimum performance standards for Corps of Engineer Hydrographic Surveys for "Other General Surveys & Studies" as described in the USACE Engineering Manual, EM1110-2-1003, *Hydrographic Surveying*, dated November 30, 2013 (https://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_1110-2-1003.pdf?ver=2014-01-06-155809-307). The number and length of transects required will be sufficient to encompass the ODMDS and a 500-foot-wide area around the site. 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. Bathymetric survey results will be used to ensure that unacceptable mounding is not occurring and to aid in monitoring environmental effects.

3.3 Summary of Past Monitoring Surveys

Surveys conducted at the Fernandina Beach ODMDS are listed in Table 5. Although there has been a significant and relatively consistent quantity of dredged material disposed at the site, little significant change in bathymetry has been shown. Minimum depths have decreased by approximately two feet. Most measurable accretion has occurred in the northern half of the ODMDS where most disposal takes place. The physical properties of the substrate have changed little since designation. The bottom remains sandy with some areas of gravel. There is no indication of any increases in any chemical constituent in the sediments. The benthic macroinvertebrate community continues to be dominated by polychaetes. However, the macroinfauna assemblage has shifted from one dominated by opportunistic spionid polychaetes in 2005, to an assemblage dominated by oweniid polychaetes and lucinid and tellinid bivalves in 2015. The macroinfauna assemblage observed in 2015 should be considered typical of late successional communities seen in similar benthic habitats.

Currents in the vicinity of the Fernandina Beach ODMDSs tend to have a significant tidal component with predominate currents flowing to the north-northwest and south-southeast (see Figure 4). There are no strong seasonal trends in the data. Surface currents exceeded 40 cm/sec (1.3 ft/sec) five percent of the time. The median surface current at both sites was 17 cm/sec (0.6 ft/sec) whereas the median bottom current was 10 cm/sec (0.3 ft/sec). Waves in the vicinity of the Fernandina Beach ODMDSs are out of the east-southeast. Median wave heights were 0.80 meters (2.6 feet) at the Jacksonville ODMDS and 0.78 meters (2.6 feet) at the CDIP location north of the Fernandina Beach ODMDS. The highest measured waves were in excess of 3 meters (9.8 feet) at both sites and occurred in June. The most frequent wave period was 10 seconds. Based on linear wave theory, wave periods in excess of 4 seconds are of sufficient length to influence bottom velocities at the depths of the ODMDS and therefore waves are likely to affect resuspension and transport of dredged material at the ODMDS. Using the equations for wave related shear stress, wave conditions are such that the critical shear stress would be exceeded due to waves 89% of the time at the Fernandina Beach ODMDS. Waves are therefore the primary factor influencing resuspension of disposed dredged material at the ODMDS, whereas currents probably affect the direction and magnitude of transport. (EPA, 2009)

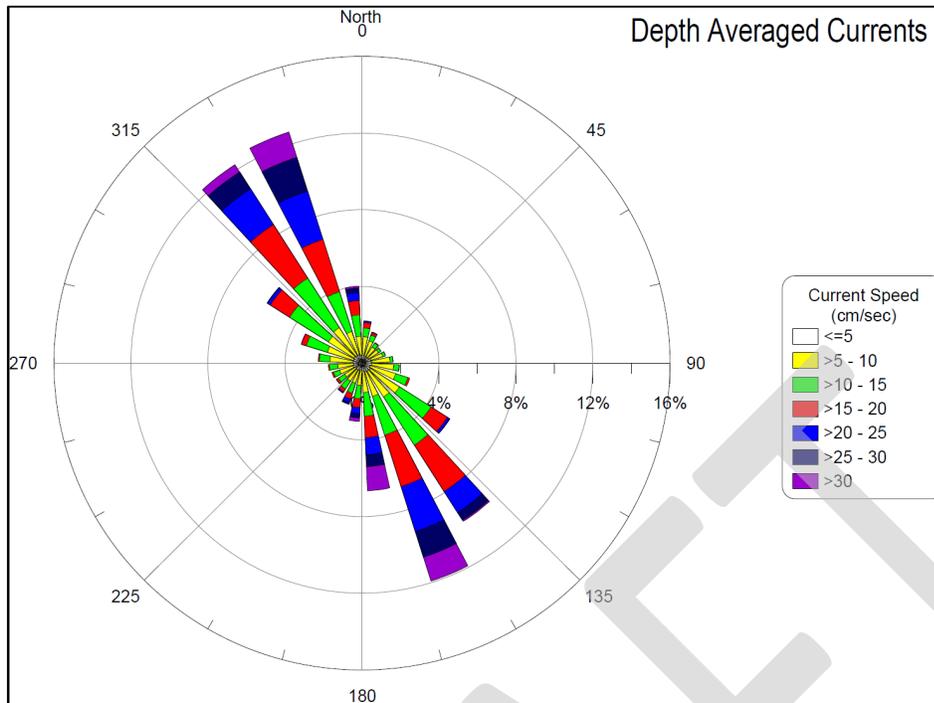


Figure 4. Fernandina Beach ODMDS Current Rose

3.4 Future Monitoring Surveys

Based on the type and volume of material disposed and impacts of concern, various monitoring surveys can be used to determine if and where the disposed material is moving, and what environmental effect the material is having on the site and adjacent areas.

Changes in bathymetry at the ODMDS will continue to be monitored in accordance with section 3.3. Should material from the U.S. Naval Station Mayport Homeporting Deepening Project be placed at the ODMDS, it is recommended that a pre- and post- sediment profile imaging survey (SPI) be conducted. SPI is a rapid reconnaissance tool for characterizing physical, chemical, and biological seafloor processes. Material from Mayport will be significantly different than the silty material currently being disposed at the site and should be monitored for its separate effects. The SPI technology can be used to evaluate the effectiveness of the buffer at containing the material within the ODMDS boundaries and away from nearby hard bottom resources. SPI technology can also be used to document changes in grain size on the seafloor, dredged material thickness, and the marine infaunal succession stage. Additionally, trend assessment surveys of the benthos and water column will continue to be performed periodically (approximately every 10 years) as resources allow. A summary of the monitoring strategies for the Fernandina Beach ODMDS and thresholds for management actions are presented in Table 6.

Table 6. Fernandina Beach ODMDS Monitoring Strategies and Thresholds for Action.

Goal	Technique	Sponsor	Rationale	Frequency	Threshold	Threshold not exceeded	Threshold exceeded
Short & Long-term fate of dredged material	Sediment Profile Imaging	Site user/EPA	Confirm areal extent of disposal mound	Following major new work project	Disposal mound footprint occurs outside ODMDS	Continue site use without changes	-restrict volumes - modify disposal zones – institute environmental effects monitoring
Monitor Bathymetric trends	Bathymetry	Site User	Determine extent of disposal mound and major depth changes	Post Disposal [60 days] for projects > 50,000 cy	Disposal mound footprint occurs outside ODMDS	Continue monitoring	-modify disposal method/placement – restrict volumes
Insure Safe Navigation Depth	Bathymetry	Site User	Determine height of mound and any excessive mounding	Post Disposal for projects > 50,000 cy	1-Mound > -30 ft mllw 2-Mound > -25 ft mllw	1-continue monitoring 2-continue monitoring	1-modify method/placement - direct user to avoid areas < 30 ft 2-physically level areas < 25 ft -notify mariners -restrict volumes
Trend Assessment	Sediment Quality Benthic Community Analysis	EPA	Periodically evaluate impact of disposals	Approx. every 10 years as resources allow	Infaunal differences not explained by grain size differences	Continue monitoring	-Conduct Environmental Effects Monitoring - review dredged material evaluation procedures
Environmental Effects Monitoring	1-Chemical Monitoring 2-Benthic Monitoring	EPA/ USACE	1-Determine if chemical contaminants are elevated 2-Determine if adverse changes in benthic community has occurred	Whenever Trends results warrant or disposal footprint extends beyond site	1-eleated contaminants 2-adverse changes seen outside site which may endanger marine ecosystem	Discontinue Monitoring	-Institute Advanced Effects Monitoring - Implement case-specific management options
Advanced Effects monitoring	1-Tissue chemical analysis 2-Benthic monitoring	EPA/ USACE	1-Determine if site is a source of adverse bioaccumulation 2-are adverse sub-lethal changes found in benthic organisms	When Environmental Effects Monitoring warrants	1-Tissues indicate potential for food chain impacts 2-sub-lethal effects are unacceptable	Discontinue Monitoring	-Discontinue site use - Implement case-specific management options
Compliance	Disposal site use records	Site user	Insure management requirements are being met	Daily during project	Required records are incomplete or not submitted	Continue Monitoring	Restrict Site use until requirements are met

Should future disposal at the Fernandina Beach ODMDS result in unacceptable adverse impacts, further studies may be required to determine the persistence of these impacts, the extent of the impacts within the marine system, and/or possible means of mitigation. In addition, the management plan presented may require revision based on the outcome of any monitoring program.

3.5 Reporting and Data Formatting

3.5.1 *Project Initiation and Violation Reporting*

The USACE or other site user shall notify EPA 15 days prior to the beginning of a dredging cycle or project disposal. The user is also required to notify the USACE and the EPA within 24 hours if a violation of the permit and/or contract conditions related to MPRSA Section 103 or SMMP requirements occur during disposal operations.

3.5.2 *Disposal Monitoring Data*

Disposal monitoring data shall be provided to EPA Region 4 electronically on a weekly basis. Data shall be provided per the EPA Region 4 XML format and delivered as an attachment to an email to DisposalData.R4@epa.gov. The XML format is available from EPA Region 4.

3.5.3 *Post Disposal Summary Reports*

A Post Disposal Summary Report shall be provided to EPA within 90 days after project completion. These reports should 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 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 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 concurrency and/or permit (if applicable). The narrative should include a description of the violation, indicate the time it occurred and when it was reported to the EPA and USACE, discuss the circumstances surrounding the violation, and identify specific measures taken to prevent reoccurrence. The Post Disposal Summary Report should be accompanied by the bathymetry survey results (plot and X, Y, Z ASCII data file), 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.

3.5.4 *Environmental Monitoring.*

Material tracking, disposal effects monitoring, and any other data collected shall be coordinated with and provided to SMMP team members and federal and state agencies as appropriate. Data will be provided to other interested parties requesting such data to the extent possible. Data will be provided for all surveys in a report generated by the action agency.

The report should:

- 1) Indicate how the survey relates to the SMMP and previous surveys at the Fernandina Beach ODMDS;
- 2) Provide data interpretations, conclusions, and recommendations; and
- 3) Project the next phase of the SMMP

Monitoring results will be summarized in subsequent modifications to the SMMP.

4.0 Modification of the Fernandina Beach ODMDS SMMP

Should the results of the monitoring surveys or reports from other sources indicate that continued use of the ODMDS would lead to unacceptable effects, the ODMDS SMMP will be modified to mitigate the adverse impacts. The SMMP will be reviewed and revised at a minimum of every ten years. The SMMP will be reviewed and updated as necessary if site use changes significantly. For example, the SMMP will be reviewed if the quantity or type of dredged material placed at the site changes significantly or if conditions at the site indicate a need for revision.

5.0 References

- Fredette, Thomas J., Nelson, David A., Clausner, James E., and Anders, Fred J. 1990. Guidelines for Physical and Biological Monitoring of Aquatic Dredged Material Disposal Sites, Technical Report D-90-12, US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Pequegnat, Willis E., Gallaway, Benny J., and Wright, Thomas D., 1990. Revised Procedural Guide for Designation Surveys of Ocean Dredged Material Disposal Sites, Technical Report D-90-8, US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- U.S. Army Corps of Engineers. 2008. Draft Jacksonville Ocean Dredged Material Disposal Site Capacity Report. May 2008.
- U.S. Environmental Protection Agency (EPA). 1986. Final Supplement to the Jacksonville Harbor Ocean Dredged Material Disposal Site Final Environmental Impact Statement (EIS) for Designation of a New Fernandina Harbor, Florida, Ocean Dredged Material Disposal Site, November 1986.
- U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 1991. Evaluation of Dredged Material Proposed for Ocean Disposal (Testing Manual), February 1991. Prepared by Environmental Protection Agency Office of Marine and Estuarine Protection and Department of Army United States Army Corps of Engineers under EPA Contract No. 68-C8-0105.
- U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 1996. Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites, February 1996. Prepared by Environmental Protection Agency Office of Water and Department of Army United States Army Corps of Engineers.
- U.S. Environmental Protection Agency Region 4 and U.S. Army Corps of Engineers South Atlantic Division, 2007. Memorandum of Understanding Between U.S. EPA Region 4 and the USACE South Atlantic Division on Ocean Dredged Material Disposal, March 2007.
- U.S. Environmental Protection Agency Region 4 and U.S. Army Corps of Engineers South Atlantic Division, 2008. Southeast Regional Implementation Manual (SERIM) Requirements and Procedures for Evaluation of the Ocean Disposal of Dredged Material in Southeastern U.S. Atlantic and Gulf Coast Waters, August 2008.
- U.S. Environmental Protection Agency (EPA). 1988. Final Gamma Radiation Surveillance of Dredged Spoil Site Sediments at Fernandina Beach and Tampa Bay, Florida, November 1988. Prepared by Center for Applied Isotope Studies under contract to Battelle Ocean Sciences for U.S. EPA, Office of Marine and Estuarine Protection.
- U.S. Environmental Protection Agency (EPA). 1989. Final Sediment Mapping at Fernandina Beach II and Canaveral II, Florida Ocean Dredged Material Disposal Site, June 1989.

Prepared by Center for Applied Isotope Studies under contract to Battelle Ocean Sciences for U.S. EPA, Office of Marine and Estuarine Protection.

U.S. Environmental Protection Agency (EPA). 1990. Fernandina Harbor, Florida, ODMDS, Benthic Communities, August 1990. Prepared by Barry A. Vittor & Associates, Inc. under contract to Battelle Ocean Sciences for U.S. EPA, Office of Marine and Estuarine Protection.

U.S Environmental Protection Agency (EPA), 2006. Fernandina ODMDS Status and Trends: August 2005. December 2006.

U.S Environmental Protection Agency (EPA), 2009. Ocean Current and Wave Measurements at the Jacksonville and Fernandina Beach Ocean Dredged Material Disposal Sites. EPA-904-R-09-001. January 2009

U.S. Navy, 2008. Final EIS for the Proposed Homeporting of Additional Surface Ships at Naval Station Mayport, FL. November 2008.

U.S. Navy, 2009. Record of Decision for Homeporting of Additional Surface Ships at Naval Station Mayport, Florida. January 2009.

**APPENDIX A:
WATER COLUMN EVALUATIONS NUMERICAL MODEL (STFATE) INPUT
PARAMETERS**

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**Water Column Evaluations
Numerical Model (STFATE) Input Parameters
Fernandina Beach ODMDS**

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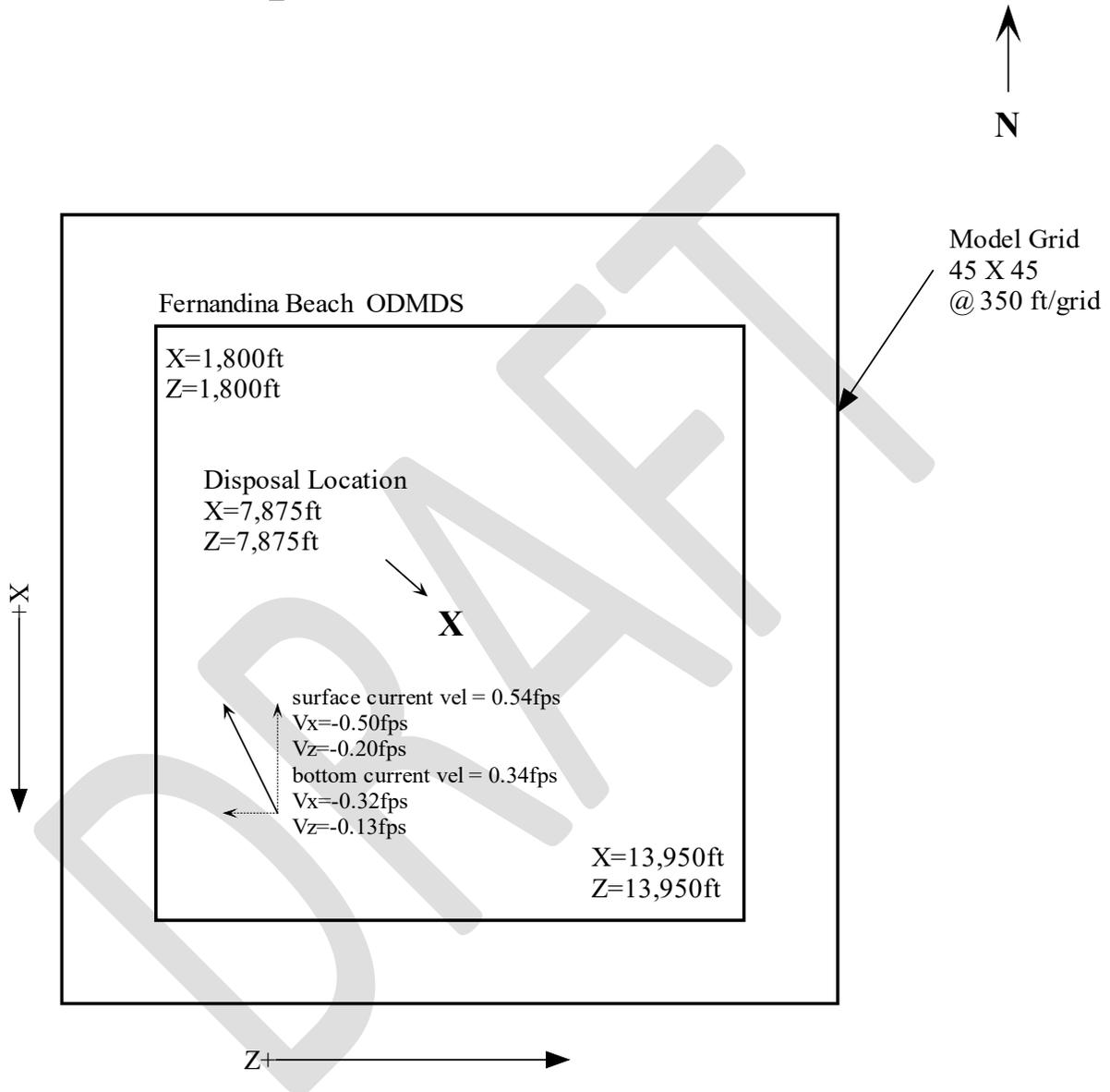
Fernandina Beach ODMDS STFATE Input Parameters

Parameter	Value	Units
Number of Grid Points (left to right)	55	
Number of Grid Points (top to bottom)	55	
Spacing Between Grid Points (left to right)	350	ft
Spacing Between Grid Points (top to bottom)	350	ft
Constant Water Depth	50	ft
Roughness Height at Bottom of Disposal Site	0.005	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	5	
Ambient Density at Depth = 0 ft	1.0189	g/cc
Ambient Density at Depth = 50 ft	1.019	g/cc
Distance from the Top Edge of Grid (upper left corner of site)	2,100	ft
Distance from the Left Edge of Grid (upper left corner of site)	2,100	ft
Distance from the Top Edge of Grid (lower right corner of site)	14,250	ft
Distance from the Left Edge of Grid (lower right corner of site)	14,250	ft
Number of Depths for Transport-Diffusion Output	4 (20, 30, 40, 49)	

Table O11. STFATE model coefficients.

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

Fernandina Beach ODMDS STFATE Input Parameters



Fernandina Beach ODMDS Background Water Concentration	
Contaminants of Concern	Background Concentration Levels (µg/L)
Arsenic	1.307
Cadmium	0.0084
Chromium (VI)	0.1757
Copper	0.148
Lead	0.0167
Mercury	
Nickel	0.1714
Selenium	
Silver	0.0049
Zinc	1.2071
Ammonia	No data available
Cyanide	No data available
Tributyltin (TBT)	0.006 ¹
Aldrin	0.0053 ¹
Chlordane	No data available
DDT	0.0053 ¹
Dieldrin	0.0053 ¹
alpha – Endosulfan	0.0053 ¹
beta – Endosulfan	0.0053 ¹
Endrin	0.0053 ¹
gamma-BHC (Lindane)	0.0053 ¹
Heptachlor	0.0053 ¹
Heptachlor Epoxide	0.0053 ¹
Toxaphene	0.115 ¹
Parathion	No data available
Pentachlorophenol	No data available

Unless noted, data from 2015 Fernandina Trends Survey.

1 – Analyte not detected. Value is based on one half the reporting limit.

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

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**GENERIC SPECIAL CONDITIONS
FOR MPRSA SECTION 103 PERMITS**

I. 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 Fernandina Beach ODMDS, proper disposal of dredged material at the disposal area within the Fernandina Beach ODMDS, and transportation of the hopper dredge or disposal barge or scow back to the dredging site.
- B. Fernandina Beach ODMDS Boundary: The Fernandina Beach ODMDS is centered at approximately 30° 19.289'N latitude and 81° 17.739'W longitude (NAD 83) or state plane coordinates 2176970 ft N and 562884 ft E (NAD83). The Fernandina Beach ODMDS boundary coordinates are as follows:

Vertices	Geographic (NAD83)		State Plane	
			(FL East 0901 Ft NAD83)	
NW Corner	30°21.514 'N	81°18.558 'W	2190467.39 N	558614.22 E
NW Corner	30°21.514 'N	81°18.555 'W	2190464N	558631E
Upper NE Corner	30°21.514 'N	81°17.422 'W	2190449 N	564587E
Interior Corner	30° 20.515'N	81°17.422'W	2184393 N	564571 E
Lower NE Corner	30°20.515 'N	81°17.012 'W	2184388 N	566727 E
SE Corner	30°17.829 'N	81°17.012 'W	2168107 N	566686 E
SW Corner	30°17.829 'N	81°18.555 'W	2168128 N	558570 E

- C. **Disposal Release Zone:** The Permittee shall ensure that disposal initiation occurs while the hopper dredge or disposal barge or scow are completely inside the **disposal release zone**. The disposal release zone(s) coordinates are as follows:

[insert coordinates for appropriate release zone]

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
North				
West				
South				
East				

No disposal shall initiate in the area north of 30° 31.500' N (GA State Plane East Y=191,959ft) and west of 81° 18.245' W (GA State Plane East N=927,750ft).

After disposal initiation, disposal can occur (that is the vessel can travel) anywhere within the ODMDS boundaries as defined in Special Condition B. However, the Permittee shall ensure the hopper dredge, disposal barge or scow doors or split hull shall be in the closed position and all discharge of the material has ceased before the disposal vessel leaves the Fernandina Beach ODMDS boundary.

- D. **Maximum Placement Elevation:** The Permittee shall ensure that dredged material shall be placed such that no point will depths less than -25 feet MLLW occur. (i.e., a clearance of 25 feet above the bottom will be maintained).
- E. **Disposal Volume Limitations:** 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 Fernandina Beach ODMDS.
- F. **Electronic Positioning System:** The permittee shall use an electronic positioning system to navigate to and from the Fernandina Beach ODMDS. For this section of the permit, the electronic positioning system is defined as: a differential global positioning system. If the electronic positioning system fails or navigation problems are detected, all disposal operations shall cease until the failure or navigation problems are corrected.
- G. **Certification of Electronic Positioning System:** The permittee shall certify the accuracy of the electronic positioning system proposed for use during disposal operations at the Fernandina ODMDS. The certification shall be accomplished by direct comparison of the electronic positioning system's accuracy with a known fixed point.
- H. **Leakage/Spillage:** This permit does not authorize leakage or spillage out of barges, dump scows, or hopper dredges of water and/or excavated material while en route to the ODMDS disposal release zone(s). Failure to repair leaks or change the method of operation which is resulting in the leakage or spillage will result in the suspension of dredging operation and require prompt repair or change of operation as prerequisite to the resumption of dredging. Transit to the ODMDS begins as soon as dredged material loading into the disposal vessel is completed and the vessel begins moving to the ODMDS. All appropriate measures to avoid spillage during transit must be taken. Appropriate measures may include but are not limited to: up-to-date U.S. Coast Guard and/or American Bureau of Shipping certification of all disposal-related vessels; maintenance (inspection and/or replacement) of gaskets on barge doors, minimization of excess free liquids in barge loads, pre-transit testing of barge door hydraulics, and pre- transport verification of appropriate weather and sea state conditions. EPA Region 4 and the USACE Jacksonville District shall be notified within 24 hours if any apparent leaking or spilling of dredged material occurs as indicated by an average loss of draft during transit from the dredging area to the disposal release zone(s) (forward draft loss plus aft draft loss divided by 2) in excess of x.x feet.
- I. **Compliance with Permit:** A disposal operations inspector and/or captain of any tug boat, hopper dredge or other vessel used to transport dredged material to the Fernandina Beach ODMDS shall insure compliance with disposal operation conditions defined in this permit.
1. If the disposal operations inspector or the captain detects a violation, they shall report the violation to the permittee immediately.

2. The permittee shall contact the U.S. Army Corps of Engineers, Jacksonville District's Regulatory Division (352) 264-7672 and EPA Region 4 at (404) 562-9395 and by email at oceandumpingr4@epa.gov 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.
- J. **Electronic Tracking System:** The Permittee shall use an electronic tracking system (ETS) to provide surveillance of the transportation and disposal of dredged material. The ETS will be 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 Fernandina Beach ODMDS and return to the point of dredging. Data shall be collected at least every 0.25 nautical mile or every 4 minutes during travel to and from the ODMDS and twelve seconds or every 30 feet of travel, while the hull status is open within the ODMDS. The Permittee shall use Florida State Plane or latitude and longitude coordinates (North American Datum 1983). State Plane coordinates shall be reported to the nearest foot and latitude and longitude coordinates shall be reported as decimal degrees out to 6 decimals. Westerly longitudes are to be reported as negative. Draft readings shall be recorded in feet out to 2 decimals.
- K. **Disposal Record:** The Permittee shall record electronically for each load the following information:
1. Load Number
 2. Disposal Vessel Name and Type (e.g. scow)
 3. Estimated volume of Load
 4. Description of Material Disposed
 5. Source of Dredged Material
 6. Date, Time and Location at Initiation and Completion of Disposal Event
- L. **Bathymetric Survey:** The permittee shall conduct a bathymetric survey of the Fernandina Beach 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 area around the site. The surveys will be taken along lines spaced at 200-foot intervals or less for single beam surveys and 500 feet or less for multibeam surveys unless a lesser spacing provides 100% coverage.
 2. Vertical accuracy of the survey shall be \pm 0.5 feet. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing a differential global positioning system. The vertical datum shall be mean lower low water (MLLW) and the horizontal datum shall use Florida State Plane 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 6 decimal points.

- M. Regional Biological Opinion:** Enclosed is the Regional Biological Opinion (RBO) dated [INSERT DATE], for swimming sea turtles, whales, 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.
- N. Site Management and Monitoring Plan:** The Permittee shall comply with the conditions of the current Fernandina Beach ODMDS Site Management and Monitoring Plan (SMMP), and any revisions. The current 2020 SMMP can be found at the following web address:

<https://www.epa.gov/ocean-dumping/ocean-disposal-dredged-material>

The Permittee shall not transport dredged material to the Fernandina Beach ODMDS until concurrency is granted by EPA that the proposed dredge material meets the Ocean Disposal Criteria as given in 40 CFR 227.

II. 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, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019 and U. S. Environmental Protection Agency (EPA) Region 4's Ocean, Wetlands, and Streams Protection Branch, 61 Forsyth Street, Atlanta, GA 30303. 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 EPA a written notification of the date of commencement of work authorized by this permit.
- C. Electronic data required by Special Conditions I and J shall be provided to EPA Region 4 on a weekly 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 Jacksonville 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 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).

III. PERMIT LIABILITY

- A. The permittee shall be responsible for ensuring compliance with all conditions of this permit.
- B. The permittee and all contractors or other third parties who perform an activity authorized by this permit on behalf of the permittee shall be separately liable for a civil penalty for each violation of any term of this permit they commit alone or in concert with the permittee or other parties. This liability shall be individual, rather than joint and several, and shall not be reduced in any fashion to reflect the liability assigned to and civil penalty assessed against the permittee or any other third party as defined in 33 U.S.C. Section 1415(a).
- C. If the permittee or any contractor or other third party knowingly violates any term of this permit (either alone or in concert), the permittee, contractor or other party shall be individually liable for the criminal penalties set forth in 33 U.S.C. Section 1415(b).

**APPENDIX C: TYPICAL CONTRACT LANGUAGE FOR IMPEMENTING THE
FERNANDINA BEACH ODMDS SMMP REQUIREMENTS**

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CONTRACT LANGUAGE FOR IMPEMENTING SMMP REQUIREMENTS

DISPOSAL OF DREDGED MATERIAL

1. 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 Statute Miles	Average Distance Statute Miles
[INSERT DISPOSAL AREA]	[XX miles]	[XX miles]

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

2. Ocean Dredged Material Disposal Sites (ODMDS)

The material excavated shall be transported to and deposited in the Fernandina Beach ODMDS 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 Fernandina Beach ODMDS boundary as shown on the drawings. Additionally, disposal shall be initiated within the disposal release zone defined by the following coordinates:

[insert coordinates for appropriate release zone]

Vertices	Geographic NAD 83	State Plane (Florida East 0901 U.S. Ft) NAD 83	
Center			
North			
West			
South			
East			

No disposal shall initiate in the rubble area north of 30° 31.500' N (GA State Plane East Y=191,959ft) and west of 81° 18.245' W (GA State Plane East N=927,750ft).

Dredged material shall not be placed higher than elevation -25 feet MLLW in the Fernandina Beach ODMDS.

3. Logs

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

- a. Load Number
- b. Disposal Vessel or Scow Name

- c. Estimated volume of Load
- d. Description of Material Disposed
- e. Source of Dredged Material
- f. Date, Time and Location (coordinates) at Start of Initiation and Completion of Disposal Event

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.

3.4.2.1 Spillage/Leakage

Water and excavated material shall not be permitted to overflow, leak out, or spill out of barges, dump scows, or hopper dredges while en route to the ODMDS disposal release zone(s). Failure to repair leaks or change the method of operation which is resulting in the overflow, leakage, or spillage will result in suspension of dredging operations and require prompt repair or change of operation to prevent overflow, leakage, or spillage as prerequisite to the resumption of dredging. Transit to the ODMDS begins as soon as dredged material loading into the disposal vessel is completed and the vessel begins moving to the ODMDS. All appropriate measures to avoid spillage during transit must be taken. Appropriate measures may include, but are not limited to: up-to-date U.S. Coast Guard and/or American Bureau of Shipping certification of all disposal-related vessels; maintenance (inspection and/or replacement) of gaskets on barge doors, minimization of excess free liquids in barge loads, pre-transit testing of barge door hydraulics, and pre-transport verification of appropriate weather and sea state conditions. The Contracting Officer shall be notified within 24 hours if any apparent leaking or spilling of dredged material occurs as indicated by an average loss of draft during transit from the dredging area to the disposal release zone(s) (forward draft loss plus aft draft loss divided by 2) in excess of x.x feet. Excessive leakage may be classified as a mis-dump and pay deducted for the entire load.

3.4.2.2 Mis-Dump

Any scow load or hopper dredge load that is released outside the boundaries of the release zone as shown on the plans will be classified as a mis-dump and will result in a suspension of dredging operations. Re dredging of such materials will be required as a prerequisite to the resumption of dredging unless the Contracting Officer, at his discretion, determines that re dredging of such material is not practical. If re dredging of such material is not required then the quantity of the mis-dumped load shall be deducted from the Contractor's pay quantity. If the quantity for each mis-dumped 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. In addition, the Contractor must notify the Contracting Officer within 24 hours of a misplaced dump or any other violation of the Site Monitoring and Management Plan for Fernandina Beach ODMDS. Corrective actions must be implemented by the next dump and the Contracting Officer must be informed of actions taken.

3.4.2.3 Vessel Doors

All hopper doors, dump scow doors, or split hull dumping mechanisms shall be closed and sealed prior to exiting the ODMDS as documented by the hull sensors. In the event that a dump vessel exits the ODMDS with open doors, then the Contractor shall notify the COR immediately of the occurrence. Corrective actions must be implemented by the next dump and the Contracting Officer must be informed of actions taken.

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

1. 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 shall have an accuracy equal to or better than a standard DGPS system, equal to or better than plus/minus 10 feet (horizontal repeatability). Vertical (draft) data shall have an accuracy of plus/minus 0.1 foot. Horizontal location and vertical data shall be collected in sets and each data set shall be referenced in real-time to date and local time (to nearest minute) and shall be referenced to the same state plane coordinate system used for the survey(s) shown in the contract plans. 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 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.

2. ETS Data Requirements and Submissions

- a. 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 cycle. (NOTE: A dredging and disposal cycle constitutes the time from commencement of dredging to complete discharge of the material.) 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.
- b. All data shall be collected and stored on CD-ROM(s) in ASCII format and shall be readable by MS Windows compatible software. Each dredging and disposal

cycle shall be a separate and distinct ASCII file, labeled by the trip number. More than one file may be stored on the disc(s) or CD-ROM(s).

- c. Data shall be collected at least every 0.25 nautical mile or every 4 minutes during travel to and from the ODMDS and twelve seconds or every 30 feet of travel, while the hull status is open within the ODMDS.
- d. In addition to the continuous tracking data, the following trip information shall be electronically recorded for each disposal cycle:
 1. Load Number
 2. Disposal Vessel Name and Type
 3. Estimated Volume of Load
 4. Description of Material Disposed
 5. Source of Dredged Material
 6. Date, Times, and Location at Initiation and Completion of Disposal Event
- e. Plot Reporting (2 types):
 1. 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.
 2. 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.
 3. 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.
- f. ETS data and log data required shall be provided to EPA Region 4 on a weekly or more frequent basis. 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. 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: <http://dqm.usace.army.mil/Specifications/Index.aspx>

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

1. NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM SYSTEM
(HOPPER DREDGES AND SCOWS)

National Dredging Quality Management Program (NDQMP) System certification is required prior to award. See provision NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM SYSTEM -- HOPPER DREDGES -- SPECIAL STANDARD OF RESPONSIBILITY of Section 00100 INSTRUCTIONS TO OFFERORS in Volume 1.

2. System Requirements

See Section 35 20 24 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM SCOW - MONITORING PROFILE and Section 35 20 26 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM HOPPER DREDGE. However, in the event of NDQMP System failure (not fully operational), the Contractor shall notify the Contracting Officer and continue tracking using ETS (see paragraph "Electronic Tracking System (ETS) for Ocean Disposal Vessels" below) for up to 48 hours until the NDQMP System is fully operational and in use. If, upon NDQMP System failure, the Contractor cannot use ETS or cannot use the NDQMP System within 48 hours of failure, all dredging operations for the vessel shall cease until the NDQMP System is fully operational. Any delays resulting from failure of the Contractor's DQM hardware or software shall be at the Contractor's expense.

3. 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.

