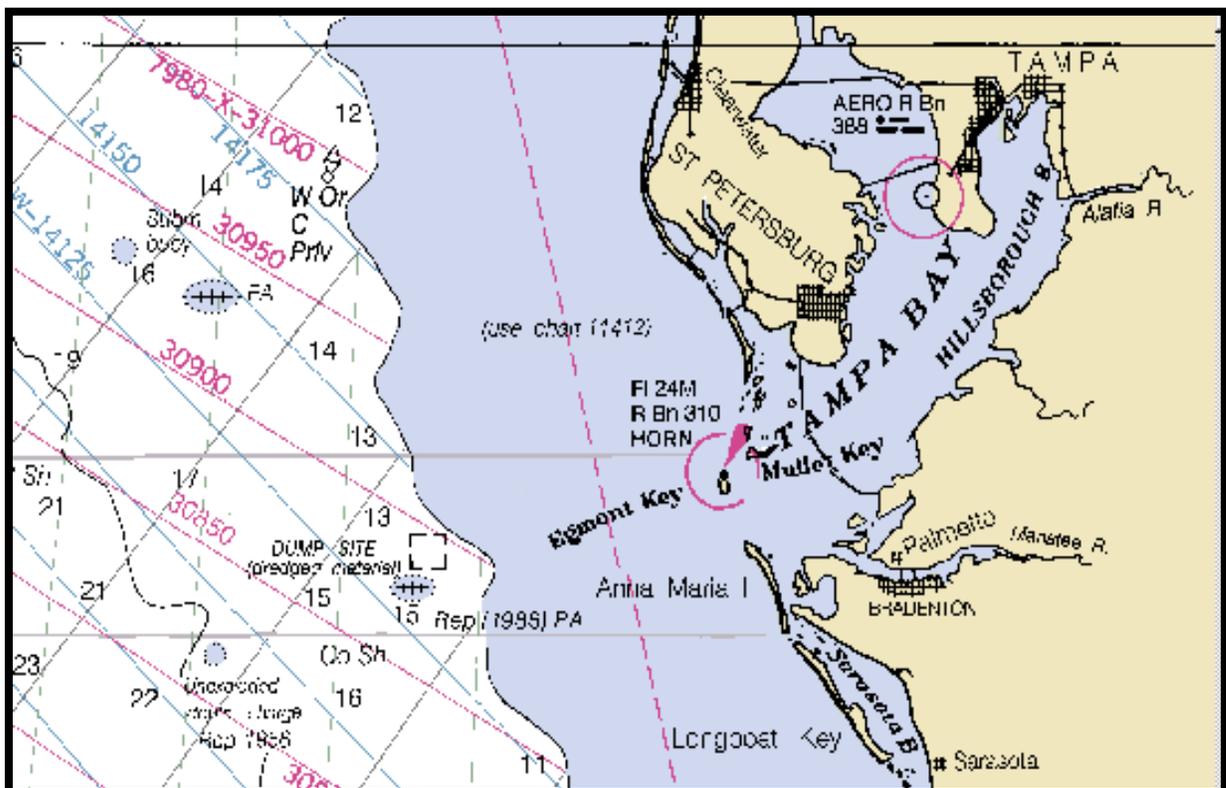


# TAMPA OCEAN DREDGED MATERIAL DISPOSAL SITE

## SITE MANAGEMENT AND MONITORING PLAN

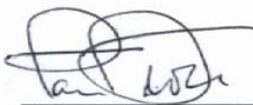


February 2009

## TAMPA ODMDS

### Site Management and Monitoring Plan

The following Site Management and Monitoring Plan (SMMP) for the Tampa Ocean Dredged Material Disposal Site (ODMDS) has been developed and agreed to pursuant to the Water Resources Development Act Amendments of 1992 (WRDA 92) to the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA) for the management and monitoring of ocean disposal activities, as resources allow, by the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE).



Colonel Paul L. Grosskruger  
District Commander  
Jacksonville District  
U.S. Army Corps of Engineers  
Jacksonville, Florida

3/20/09

Date



A. Stanley Meiburg  
Acting Regional Administrator  
U.S. Environmental Protection Agency  
Region 4  
Atlanta, Georgia

3/6/2009

Date

This plan is effective from the date of signature for a period not to exceed 10 years. The plan shall be reviewed and revised more frequently if site use and conditions at the site indicate a need for revision.

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# TAMPA ODMDS

## Site Management and Monitoring Plan

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## TAMPA ODMDS

### SITE MANAGEMENT AND MONITORING PLAN (SMMP)

#### **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 of 1972 (MPRSA) to manage and monitor the Ocean Dredged Material Disposal Sites (ODMDS) designated by EPA pursuant to Section 102 of MPRSA. The goal of this management is to ensure that ocean dredged material disposal activities will not unreasonably degrade the marine environment or endanger human health or economic potential. As part of this responsibility, a Site Management and Monitoring Plan (SMMP) was originally developed as part of the designation process and was published in September 1994 as part of the *Final Environmental Impact Statement for Designation of an Ocean Dredged Material Disposal Site, Located Offshore Tampa, Florida* (EPA, 1994) to specifically address the disposal of dredged material into the Tampa ODMDS. This plan is currently being revised to incorporate subsequent monitoring results and to comply with provisions of the Water Resources Development Act Amendments of 1992 (WRDA 92) and a Memorandum of Understanding between EPA, Region 4 and USACE, South Atlantic Division (EPA/USACE, 2007). This plan serves as a revision to and supersedes the original plan. Upon finalization of this revised SMMP, these SMMP provisions shall be 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 SMMP.

This SMMP has been prepared in accordance with the *Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites* (EPA/USACE, 1996). This document provides a framework for the development of SMMPs required by MPRSA and WRDA 92. The SMMP may be modified if it is determined that such changes are warranted as a result of information obtained during the monitoring process.

**1.1 Site Management and Monitoring Plan Team.** An interagency SMMP team has been established to assist EPA and USACE in finalizing this SMMP. The team consists of the following agencies and their respective representatives:

USACE, Jacksonville District  
Mr. Glenn Schuster & Mr. Paul Karch

Port of Tampa

Florida Department of Environmental Protection  
Ms. Lynn Griffin

EPA Region 4  
Mr. Gary Collins

National Oceanic and Atmospheric Administration  
Dr. John Proni

Florida Fish & Wildlife  
Commission  
Mr. George Henderson

Other agencies, such as the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) will be asked to participate where appropriate.

The SMMP team will assist EPA and USACE in evaluating existing monitoring data, the type of disposal (i.e., operations and maintenance (O&M) vs. new work), quality of material, location of placement within the ODMDS, and quantity of material. The team will assist EPA and USACE on deciding on appropriate monitoring techniques, the level of monitoring, the significance of results and potential management options.

Specific responsibilities of EPA, Region 4 and the USACE, Jacksonville District are:

**EPA:** EPA is responsible for designating/de-designating MPRSA Section 102 ODMDSs, for evaluating environmental effects of dredged material disposal at these sites and for reviewing and concurring on dredged material suitability determinations.

**USACE:** 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.**

ODMDS management involves a broad range of activities including regulating the schedule of use, the quantity, and the physical/chemical characteristics of dredged materials dumped at the site. It also involves establishing disposal controls, conditions and requirements to avoid and minimize potential impacts to the marine environment. Finally, ODMDS management involves monitoring the site environs to verify that unanticipated or significant adverse effects are not occurring from past or continued use of the site and that permit conditions are met.

Section 228.3 of the Ocean Dumping Regulations (40 CFR 220 - 229) states that "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 studies; and recommending modifications in site use and/or designation." The plan may be modified if it is determined that such changes are warranted as a result of information obtained through the monitoring process. MPRSA, as amended by WRDA 92, provides that the SMMP shall include but not be 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 and physical/chemical characteristics of dredged materials to be disposed of at the site;
- Consideration of the anticipated use of the site over the long-term;
- A schedule for review and revision of the plan.

**2.1 Project Description.** Tampa Harbor includes the entire area of Tampa Bay east of Egmont Key (Figure 1). See Section 2.5 below for a list of channels with widths and depths. Tampa Bay is a large tidal estuary on the west coast of Florida. Natural depths in the bay average approximately 12 feet outside of the dredged channels. In addition to

the major harbor facilities included in Tampa Harbor, there are several smaller harbor facilities served by the Tampa Harbor channels. These include St. Petersburg Harbor, Port Manatee, Big Bend and Alafia River.

The areas adjacent to Tampa Bay are heavily developed and include industrial, transportation, military, commercial and residential areas. The majority of the shoreline has been altered however the southwest corner of the bay is relatively undisturbed and efforts are underway to restore mangrove and sea grass areas in other areas of the bay.

Water quality in Tampa Bay has been steadily improving for the past 20 years. Efforts to reduce sewage discharges, urban runoff and other environmental impacts have resulted in greatly improved light penetration and water quality improvement.

**2.2 Disposal Site Characteristics.** The ODMDS was designated by EPA Region 4 in June 1995 for material dredged from the Tampa Bay area that meets the Ocean Dumping Criteria. The boundary coordinates of the Tampa ODMDS are shown in latitude/longitude and State Plane Coordinate system, North American Datum (NAD) 83:

<u>Latitude</u>	<u>Longitude</u>	<u>Northing/Y</u>	<u>Easting/X</u>
27°32'27"N	83°06'02"W	1167359.380	299521.885
27°32'27"N	83°03'46"W	1167252.496	311764.933
27°30'27"N	83°06'02"W	1155240.299	299414.296
27°30'27"N	83°03'46"W	1155133.502	311661.038

Coordinates of center of ODMDS:

27°31'27"N	83°04'54"W	1161245.946	305590.534
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The original SMMP for the Tampa ODMDS was first prepared and implemented in 1995 to protect the marine environment and document the disposal activities at the ODMDS. The goals of the plan included the delineation of the geographic location of the discharged dredged material; determination of the direction, if any, in which the discharged dredged material is migrating, and the extent of movement; and an evaluation of the effect, if any, on the ecology within and outside the offshore ODMDS.

The Tampa ODMDS is located in the Gulf of Mexico approximately 18 miles west of Egmont Key (Figure 2). The site covers a 4-square mile square area, with a bottom ranging from -77 to -90 feet MLLW.

**2.3 Management Objectives.** There are three primary objectives in the management of the Tampa ODMDS:

- To protect the marine environment, living resources, and human health and welfare;
- To document disposal activities at the ODMDS and provide information which is useful in managing the dredged material disposal activities;
- To provide for beneficial use of dredged material whenever practical.

The role of the SMMP is to provide guidelines in making management decisions necessary to fulfill mandated responsibilities to protect the marine environment as discussed previously. Risk-free decision-making is an impossible goal, however, an

appropriate SMMP can narrow the uncertainty. The following sections provide the framework for meeting these objectives.

**2.4 Dredged Material Volumes.** Previous disposal events which have utilized the Tampa ODMDS (including pre-designation when it was known as Tampa Site 4) are summarized in Table 1.

<b>Table 1. Previous dredged material placement at the Tampa ODMDS.</b>					
<b>Year</b>	<b>Type</b>	<b>Project</b>	<b>Volume (CY)</b>	<b>Sponsor</b>	<b>Description</b>
1977	NW*	Tampa Harbor	3,135,500	TPA	Silt/Sand/Clay
1978	NW*	Tampa Harbor	1,198,600	TPA	Silt/Sand/Clay
1979	NW*	Tampa Harbor	3,015,700	TPA	Silt/Sand/Clay
1980	NW*	Tampa Harbor	3,018,600	TPA	Silt/Sand/Clay
1980	MD*	St. Petersburg	23,000	SPPA	Silt/Sand/Clay
1981	MD*	St. Petersburg	361,400	SPPA	Silt/Sand/Clay
1981	NW*	Tampa Harbor	1,843,400	TPA	Silt/Sand/Clay
1982	NW*	Tampa Harbor	4,337,700	TPA	Silt/Sand/Clay
1984	NW*	Tampa Harbor	1,449,600	TPA	Silt/Sand/Clay
1985	NW*	Tampa Harbor	2,507,200	TPA	Silt/Sand/Clay
1996	MD	Tampa Harbor	1,108,700	TPA	Silt/Sand/Clay
1997	MD	Tampa Harbor	1,044,400	TPA	Silt/Sand/Clay

Notes: cubic yards = CY; new work = NW, maintenance = MD; \* Pre-site designation, TPA = Tampa Port Authority, SPPA = St. Petersburg Port Authority

Future volumes and rates of disposal, from both Federal and private applicants, are expected to increase to some degree due to the general lack of available upland disposal options, which are decreasing annually. Disposal volumes are difficult to project for the long term due to a variety of factors, the least predictable being beneficial use opportunities.

**2.5 Projected Channel Maintenance.** Maintenance of Tampa Harbor channels with disposal of dredged material in the Tampa ODMDS potentially includes all channels, wideners, turning basins and adjacent berthing areas within Tampa Bay. A list of currently maintained Federal channels which may utilize the site is provided below in Table 2.

**Table 2. Federal Channels in Tampa Bay.**

<b>Channel</b>	<b>Width (feet)</b>	<b>Depth (feet)</b>
Egmont Bar Channel – Cut 1	700	45
Egmont Bar Channel – Cut 2	700	45
Mullet Key Channel	600	45
Cut A (TB)	500	43
Cut B (TB)	500	43
Port Manatee Channel	400	40
Cut C (TB)	500	43
Cut D (TB)	500	43
Cut E (TB)	500	43
Cut F (TB)	500	43
Cut G (PT)	400	34

Cut J (PT)	400	34
Cut J2(PT)	400	34
Cut K (PT)	400	34
Gadsden Point Cut	500	43
Cut A (HB)	500	43
Big Bend Channel	200	30
Cut C (HB)	500	43
Alafia River Channel	200	30
Cut D (HB)	400	34
Lower Sparkman Channel	400	34
Upper Sparkman Channel	400	34
Ybor Channel	400	34
Port Sutton Channel	400	43
Port Sutton Terminal Ch.	200	34
East Bay Channel	300	43
East Bay Channel Ext (1)	300	34
East Bay Channel Ext (2)	300	34
Seddon Channel	200	12

This list includes all associated wideners, turning basins and berthing areas including non Federal facilities adjacent to the Federal Channels.

Specific projects, currently in the planning stages, which may utilize the ODMDS include:

- Widening of Cuts A & B    2010                    @1.8 million cubic yards;
- Alafia River                    date unknown @ 3.0 million cubic yards.

**2.6 Material Suitability.** Maintenance dredged material that is expected to be placed at the ODMDS consists of silts, silty sands, shell and gravel from maintenance of channels in Tampa Harbor. Some sand may be placed in the ODMDS if no suitable beneficial use can be found for it.

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 State of Florida will exercise its 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 practical, and following the provisions of the Clean Water Act. Disposal of coarser material, such as rubble or rock, will be coordinated with EPA to avoid unintended impacts in the ODMDS and to promote possible beneficial uses of the material.

Dredged material that may be placed at the site is restricted to material from the Tampa Bay area that meets the ocean dumping criteria. However, the suitability of dredged material for ocean disposal must be verified by USACE and concurrence by EPA prior to disposal. Verification will be valid for three years from the time last verified. Verification will involve the following:

- 1) a case-specific evaluation against the exclusion criteria (40 CFR 227.13(b));
- 2) a determination of the necessity for testing including bioassay (toxicity and bioaccumulation) testing for non-excluded material based on the potential for contamination of the sediment since last tested; and
- 3) completion of required testing (where needed) and determining that the non-excluded, tested material is suitable for ocean disposal.

Documentation of verification 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*, as well as the *2008 Southeast Regional Implementation Manual (RIM)*. Only material determined to be suitable through the verification process by USACE and EPA will be placed at the Tampa ODMDS. All Evaluations that require the use of biological testing in order to demonstrate compliance shall utilize the currently approved reference stations that have been selected for the Tampa ODMDS (see Figure 2).

**STFATE Modeling and Limiting Permissible Concentration (LPC) Compliance (Input parameters are provided in Appendix A).** STFATE modeling for current disposal practices at the Tampa ODMDS was conducted and results indicated that a dilution of approximately 1400-fold is achieved after 4 hours following placement of a typical project. Case-specific modeling must be performed using parameters in Appendix A in addition to project-specific parameters.

**2.7 Timing of Disposal.** Presently, no restrictions have been determined to be necessary for disposal related to seasonal variations in ocean current or biota activity. As monitoring results are compiled, should any such restriction appear necessary, disposal activities will be scheduled so as to avoid adverse impacts. Additionally, if new information indicates that endangered or threatened species are being adversely impacted, additional restrictions may be incurred.

**2.8 Disposal Techniques.** No specific disposal technique is required for this site.

**2.9 Disposal Location.** Discharge of dredged material shall occur no less than 330 feet (100 meters) inside the site boundaries to comply with 40 CFR §227.28. This area is designated as the ODMDS authorized release zone. Placement methods to prevent mounding of dredged materials from becoming an unacceptable navigation hazard will be used. Dredged material shall be placed so that at no point will depths be less than - 55 feet mean lower low water (MLLW) occur (i.e., a clearance of 55 feet above the bottom will be maintained). To maximize protection of the berm (see discussion in Section 3.4.1) and naturally-occurring live bottom habitats in the area surrounding the ODMDS, disposal zones have been established based upon the grain size characteristics of the material (see Figure 3).

Disposal Zone A is restricted to dredged material which is predominantly sand-sized and smaller. Disposal Zone B is restricted to materials which have a predominant grain size larger than sand. No disposal within Zone B shall occur directly upon the Berm, which is discussed in Section 3.4.1. Disposal Zone C is currently reserved and shall not be utilized at this time. In keeping with established guidelines for ocean

dumping in EPA Region 4, grain size determinations will be based upon the Unified Soil Classification System. The term “predominance” is used only when at least 88 % has been achieved. The Berm and Disposal Zones A, B and C are defined by the following corner coordinates (see Figure 3):

	<u>Latitude</u>	<u>Longitude</u>	<u>Northing/Y</u>	<u>Easting/X</u>
<u>Zone A</u>	27°32'24.7"N	83°05'59.43"W	1,167,125.04	299,751.18
	27°31'46.99"N	83°05'59.43"W	1,163,316.62	299,717.38
	27°32'24.7"N	83°03'48.59"W	1,167,022.22	311,529.78
	27°31'46.99"N	83°03'48.59"W	1,163,213.82	311,497.10
<u>Zone B</u>	27°31'46.99"N	83°05'59.43"W	1,163,316.62	299,717.38
	27°30'54.0"N	83°05'59.43"W	1,157,965.03	299,669.91
	27°31'46.99"N	83°03'48.59"W	1,163,213.82	311,497.10
	27°30'54.0"N	83°03'48.59"W	1,157,862.27	311,451.19
<u>Zone C</u>	27°30'54.0"N	83°05'59.43"W	1,157,965.03	299,669.91
	27°30'29.3"N	83°05'59.43"W	1,155,470.53	299,647.78
	27°30'54.0"N	83°03'48.59"W	1,157,862.27	311,451.19
	27°30'29.3"N	83°03'48.59"W	1,155,367.78	311,429.80
<u>Berm</u>	27°31'22.99"N	83°05'34.99"W	1,160,873.34	301,896.38
	27°31'09.00"N	83°05'34.99"W	1,159,460.46	301,883.93
	27°31'22.99"N	83°04'21.00"W	1,160,815.15	308,558.22
	27°31'09.00"N	83°04'21.00"W	1,159,402.28	308,545.99

**2.10 Information Management of Dredged Material Placement Activities.** As discussed in the following sections, a substantial amount of diverse data regarding use of the Tampa ODMDS and effects of disposal is required from many sources (EPA, USACE, Port of Manatee). 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:

- 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? placed correctly?
- What will happen to the environment at the disposal site?

All dredge projects approved to use the Tampa ODMDS will be required to submit project data to EPA and USACE according to the specifications detailed in Appendices B and C. Failure to comply with these requirements may be cause for withdrawal of EPA and/or USACE approval of this SMMP. All disposal monitoring data shall be submitted electronically to EPA in the EPA Region 4/USACE SAD XML format. The XML specifications for data submittal are available from EPA Region 4.

### **3.0 SITE MONITORING.**

The MPRSA establishes the need for including a monitoring program as part of the Site Management Plan. Site monitoring is conducted to ensure the environmental

integrity of a disposal site and the areas surrounding the site are environmentally unharmed 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. A monitoring program should have the ability to detect environmental change as a result of disposal activities and assist in determining regulatory and permit compliance. 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; and/or
- (2) Information concerning the short-term and long-term environmental impacts of the disposal; and/or
- (3) Information indicating the short-term and long-term fate of materials disposed of in the marine environment.

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.

**3.1 Baseline Monitoring.** Prior to designation of the Tampa ODMDS, many surveys and studies were conducted not only at the ODMDS but also at several other areas offshore Tampa. Detailed results of these studies provide a baseline and are presented in the Final EIS (EPA, 1994). Those studies and subsequent surveys are listed in Table 3 and serve as the main body of data for monitoring the impacts associated with the use of the ODMDS. Both pre-disposal and post-disposal surveys will be conducted associated with future dredging and disposal events.

**Table 3. Past studies related to the designation and monitoring of the Tampa ODMDS.**

Survey/Study Title	Conducted By:	Date	Purpose
Summary of Currents	Battelle	1984-85 <sup>a</sup>	Document currents in the potential dredged material disposal site.
	Continental Shelf Associates	1985-86 <sup>a</sup>	
Water Quality and Sediment Data	EPA	1982 <sup>a</sup> , 2002 <sup>b</sup>	Determine water quality and sediment characteristics at the offshore ODMDS.
	JRB Associates	1983 <sup>a</sup>	
	Battelle	1984-85 <sup>a</sup>	
	Continental Shelf Associates	1985-86 <sup>a</sup>	
	Mote Marine Laboratory	1987 <sup>b</sup>	
Sediment mapping	Center for Applied Isotope Studies, UGA	June 1987 <sup>b</sup> ,	Determine, through isotopic tracing, dredged material movement away from the disposal mound.
		Nov 1987 <sup>b</sup> ,	
		Dec 1994 <sup>b</sup>	

Survey/Study Title	Conducted By:	Date	Purpose
Video and Still Photography	EPA	1987 <sup>c</sup> , 1991 <sup>c</sup> , 2002 <sup>c</sup>	Determine and document stability of disposal mound.
	Continental Shelf Associates	1988 <sup>c</sup>	
Fish assessment	EPA	1980-81 <sup>a</sup>	Characterize fish communities within and around the Tampa ODMDS.
Bathymetric Survey	Continental Shelf Associates	1985-86 <sup>b</sup>	Monitor bathymetry changes
Live/hard bottom assessment	Continental Shelf Associates	1985-86 <sup>b</sup>	Determine if detectable impacts were evident following disposal.
	Mote Marine Laboratory	1987 <sup>b</sup>	
Sidescan Sonar	EPA	2002	Produce mosaic identifying areas of differing bottom (sediment) types.

<sup>a</sup> – study was part of site characterization and resulted only in observations and the only conclusions to be drawn were related to site suitability.

<sup>b</sup> – study results showed that conditions that existed post-disposal to the 83-85 deepening were as anticipated and no detectable impacts were evident .

<sup>c</sup> – study was primarily subjective in nature, but showed increased coverage of berm by biota and no indications that instability existed.

**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 in real-time the horizontal location and draft condition (nearest 0.5 foot) of the disposal vessel (ie. 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 500 feet during travel to and from the ODMDS and every minute or every 200 feet of travel, whichever is smaller, while approaching within 1,000 feet and within the ODMDS. The following information shall be electronically recorded for each disposal cycle:

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

It is expected that disposal monitoring will be conducted utilizing the Silent Inspector (SI) system for Civil Works projects [see <http://si.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 3.5. EPA Region 4 and the USACE District shall be notified within 24 hours if discharge of dredged material occurs outside of the ODMDS authorized release zone or if excessive leakage occurs. Excessive leakage is any change in draft exceeding 1.5 feet from the point of departure from the dredging site to the disposal site.

**3.3 Disposal Monitoring Surveys.** USACE or other site users will conduct a bathymetric survey no sooner than 90 days prior to disposal events and within 60 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 Engineers Hydrographic Surveys for "Other General Surveys & Studies" as described in the USACE Engineering Manual, EM1110-2-1003, *Hydrographic Surveying* dated January 1, 2002 (USACE, 2002)[[http://www.usace.army.mil/publications/eng-manuals/em\\_1110-2-1003/toc.htm](http://www.usace.army.mil/publications/eng-manuals/em_1110-2-1003/toc.htm)]. The number and length of transects required will be sufficient to encompass the Tampa 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 *Hydrographic Surveying* shall be followed. 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 will be referenced to prescribed NOAA Mean Lower Low Water (MLLW) datum. The horizontal datum should be referenced to the local State Plane Coordinate System (SPCS) for that area or in Geographical Coordinates (latitude-longitude). The horizontal reference datum should be the North American Datum of 1983 (NAD 1983). Bathymetric surveys will be used to monitor the disposal mound to insure a navigation hazard is not produced, assist in verification of material placement, monitor bathymetric changes and trends, aid in environmental effects monitoring, and insure that the site capacity is not exceeded, i.e., the mound does not exceed the site boundaries. The surveys shall be provided to EPA Region 4 when completed and made available to any other appropriate governing agencies.

**3.4 Material Tracking and Disposal Effects Monitoring.** Surveys can be used to address possible changes in bathymetric, sedimentological, chemical, and biological aspects of the Tampa ODMDS and surrounding area as a result of the disposal of dredged material at the site.

**3.4.1 Summary of Results of Past Monitoring Surveys.** Table 3 lists the past surveys conducted at the Tampa ODMDS. In general, the first use of the site to deepen Tampa Bay resulted in the creation of a berm situated in the southern half of the site. The berm measures approximately 500 ft. (north/south) by 1500 ft. (east/west), and rises nearly 35 to 40 feet off the natural seafloor (90 feet). Monitoring results indicate that no measurable impacts could be identified to either the sites environs nor to nearby hard bottom communities.

**3.4.2 Future Monitoring Surveys.** Based on the type and volume of material disposed and impacts of concern, various monitoring surveys can be used to examine whether the disposed dredged material is moving, where it's going, and what environmental effect the material is having on the site and adjacent areas. A tiered approach will be utilized to determine the level of monitoring effort required following each disposal event. At a minimum, bathymetry will follow all disposal events in excess of 50,000 cubic yards, along with detailed summary project reports certifying either total compliance with all disposal requirements, or when and where any deviations occur, along with actions taken to remedy the cause for such deviations. Bathymetric surveys will be the responsibility of the dredged material generator. Generic language for contracting monitoring efforts for the ODMDS is contained in Appendix C.

The basic philosophy behind the tiered approach is to provide for proper oversight of ocean placement activities at the Tampa ODMDS while properly managing personnel and fiscal resources. Because a portion of the Tampa ODMDS has been used without significant environmental impacts, we believe that the phased approach would provide the necessary information to determine the need for additional monitoring and be the most expeditious approach. This phased approach is especially appropriate for repeated disposal operations, such as those that occur during maintenance of projects. For construction (new work) dredged material placement operations, which typically involve large quantities of material, variations of the phased approach may be appropriate.

The SMMP Team will use the phased approach to suggest appropriate monitoring techniques and level of monitoring required for a specific action. These suggestions should be based on type of disposal activity (i.e. O&M vs. construction), quality of material, location of placement activity within ODMDS, or quantity of material. EPA and USACE will ultimately determine the actual monitoring activities to be required.

Future surveys as outlined in Table 4 will focus on determining the rate and direction of disposed dredged material dispersal and the capacity of the ODMDS. Should future disposal at the Tampa 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.

The EPA will initiate a study in late 2008 to determine the viability of assessing the berm's role as marine habitat (specifically to certain fish species) as well as its effect on localized currents within the ODMDS. The long term nature of this study will be determined by expertise made available to EPA, as well as commitment of resources by other agencies willing to partner in this effort.

**Table 4. ODMDS Monitoring Strategies.**

Goal	Technique	Sponsor	Rationale	Frequency
Monitor Bathymetric Trends	Bathymetry	Site User	Determine the extent of the disposal mound and major bathymetric changes	Post disposal
Benthic Effects Monitoring	Sediment Mapping (Gamma/ CS <sup>3</sup> )	Site User	Determine aerial influence of dredged material	As determined by Team
	Benthic Survey	EPA	Determine impact of dredged material on benthic community	As determined by Team
Long-Term Fate	Modeling	EPA/ USACE	Determine dispersiveness of site and aerial extent of impact	As resources allow
	Current Meter & Wave Gauge	EPA/ USACE/ Site Users		
	Precision Bathymetry and Sidescan	USACE/ EPA		

Insure Safe Navigation Depth	Bathymetry	Site User	Determine height of mound and any excessive mounding	Post disposal
Compliance	Disposal Site Use Records	Site User	-Insure management requirements are being met -To assist in site monitoring	Daily during the project

**Table 5. ODMDS Thresholds for Action**

Goal	Threshold for Action	Management Options	
		Threshold Not Exceeded	Threshold Exceeded
Monitor Bathymetric Trends	Disposal mound occurs outside ODMDS boundaries	Continue Monitoring	-Modify disposal method/placement -Restrict disposal volumes -Enlarge site
Benthic Effects Monitoring	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	-Limit quantity of dredged material to prevent impacts outside boundaries -Create berms to retard dredged material movement -Cease site use
Long-Term Fate	Aerial extent of impact reaches resources of concern and/or increases over time.	Continue to use site without restrictions	-Restrict disposal volumes -Create berms to retard dredged material transport -Cease site use / Designate new site
Site Capacity	New work volumes exceed estimated capacity	Continue to use site without restrictions	-Enlarge site or designate additional site for new work
	Maintenance volumes exceed estimated capacity	Continue to use site without restrictions	-Enlarge site or designate additional site for new work
Insure Safe Navigation Depth	Mound height > -55 feet mean lower low water (MLLW)	Continue Monitoring	-Modify disposal method/placement -Restrict disposal volumes
	Mound height > -50 feet MLLW	Continue Monitoring	- Physically level material
Compliance	Disposal records required by SMMP are not submitted or are incomplete	Continue Monitoring	-Restrict site use until requirements are met
	Review of records indicates a dump occurred outside ODMDS boundary	Continue Monitoring	-Notify EPA Region 4/USACE, and investigate why egregious dump(s) occurred. Take appropriate enforcement action.
	Review of records indicates a dump occurred in the ODMDS but not in target area	Continue Monitoring	-Direct placement to occur as specified.

**3.5 Reporting and Data Formatting.** Disposal monitoring data shall be provided to EPA Region 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](mailto:DisposalData.R4@epa.gov). The XML format is available from EPA Region 4.

A Post Disposal Summary Report shall be provided to EPA within 90 days after project completion. This report 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 disposing material in the ODMDS; disposal timeframes for each vessel; volume disposed at the ODMDS (as paid *in situ* volume, total paid and unpaid *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 by load number; 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 descriptor 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), summary scatter plots of all disposal start locations, and summary tables of the trip information required by Section 3.2 (with the exception of disposal completion information). If all data is provided in the required XML format, summary scatter plots and summary tables will not be necessary.

#### **4.0 ANTICIPATED SITE USE.**

It is anticipated that there will be a need for use of the Tampa ODMDS for many years. The anticipated site use is projected to be for dredged material disposal of 1 million cubic yards of dredged material on a 2 to 3 year basis. This projection is based on shoaling rates, past dredging records, currently available dredged material disposal options, and USACE' planning documents.

#### **5.0 MODIFICATION OF THE TAMPA ODMDS SMMP.**

Should the results of the monitoring surveys or valid reports from other sources indicate that continued use of the ODMDS would lead to unacceptable effects, then the ODMDS management will be modified to mitigate the adverse effects. The SMMP will be reviewed and updated at least every 10 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 site changes significantly or if conditions at the site indicate a need for revision. The plan should be updated in conjunction with activities authorizing use of the site.

#### **6.0 IMPLEMENTATION OF THE TAMPA ODMDS SMMP.**

This plan shall be effective from date of signature for a period not to exceed 10 years. The EPA and USACE shall share responsibility for implementation of the SMMP. Site users may be required to undertake monitoring activities as a condition of their permit. USACE will be responsible for implementation of the SMMP for Federal maintenance projects.

#### **7.0 REFERENCES.**

U.S. Army Corps of Engineers (USACE). 2002. *Hydrographic Surveying*. Engineering Manual 1110-2-1003, Department of the Army, Washington D.C. January, 2002.

U.S. Environmental Protection Agency (EPA). 1994. *Final Environmental Impact Statement for Designation of an Ocean Dredged Material Disposal Site, Located Offshore Tampa, Florida*. September, 1994.

U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE), 1991. *Evaluation of Dredged Material Proposed for Ocean Disposal (Testing Manual)*, February 1991. Prepared by EPA Office of Marine and Estuarine Protection and Department of Army USACE under EPA Contract No. 68-C8-0105.

U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE), 1996. *Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites*, February 1996. Prepared by EPA Office of Water and Department of Army USACE.

U.S. Environmental Protection Agency Region 4 and U.S. Army Corps of Engineers South Atlantic Division, 2007. Memorandum of Understanding Between USACE, South Atlantic Division and EPA, Region 4 on Ocean Dredged Material Disposal. April, 2007.

U.S. Environmental Protection Agency Region 4 and U.S. Army Corps of Engineers South Atlantic Division, 2008. *Southeast Regional Implementation Manual Requirements and Procedures for Evaluation of the Ocean Disposal of Dredged Material in Southeastern Atlantic and Gulf Coast Waters*, August 2008.



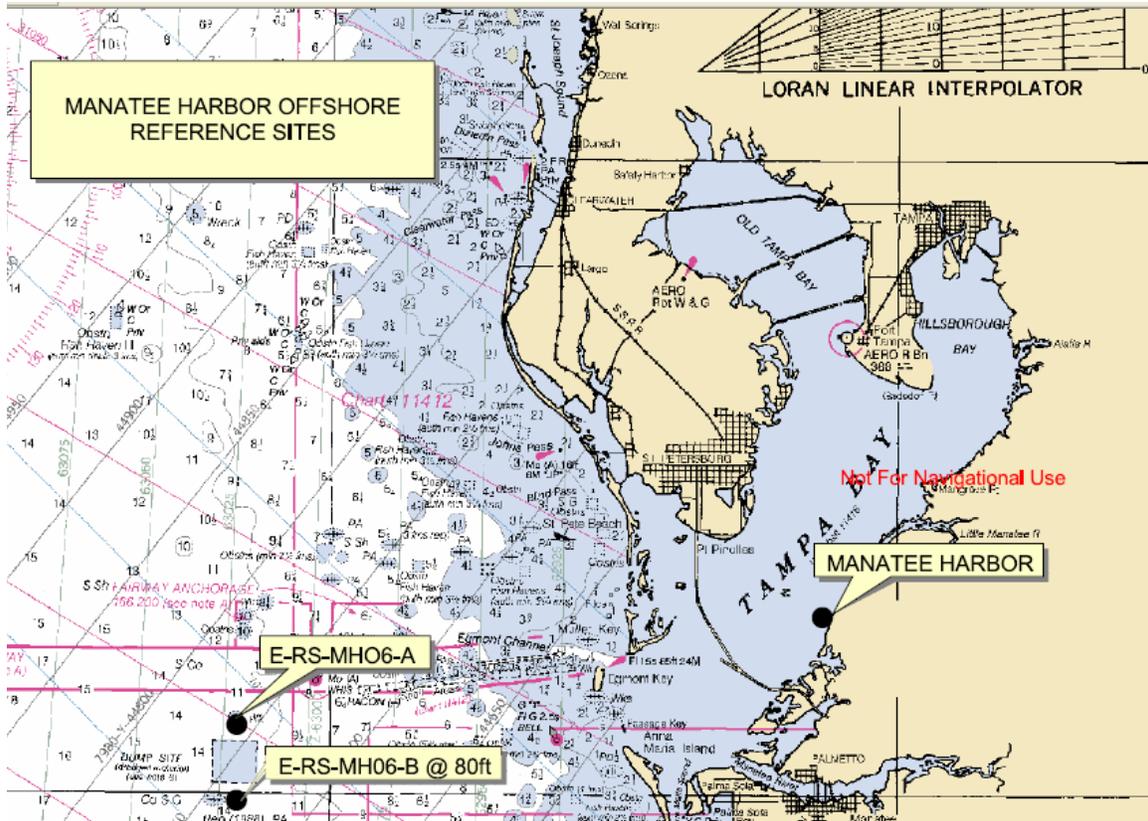


Figure 2. Tampa ODMS relative to Manatee Harbor, Reference Sediment Stations.

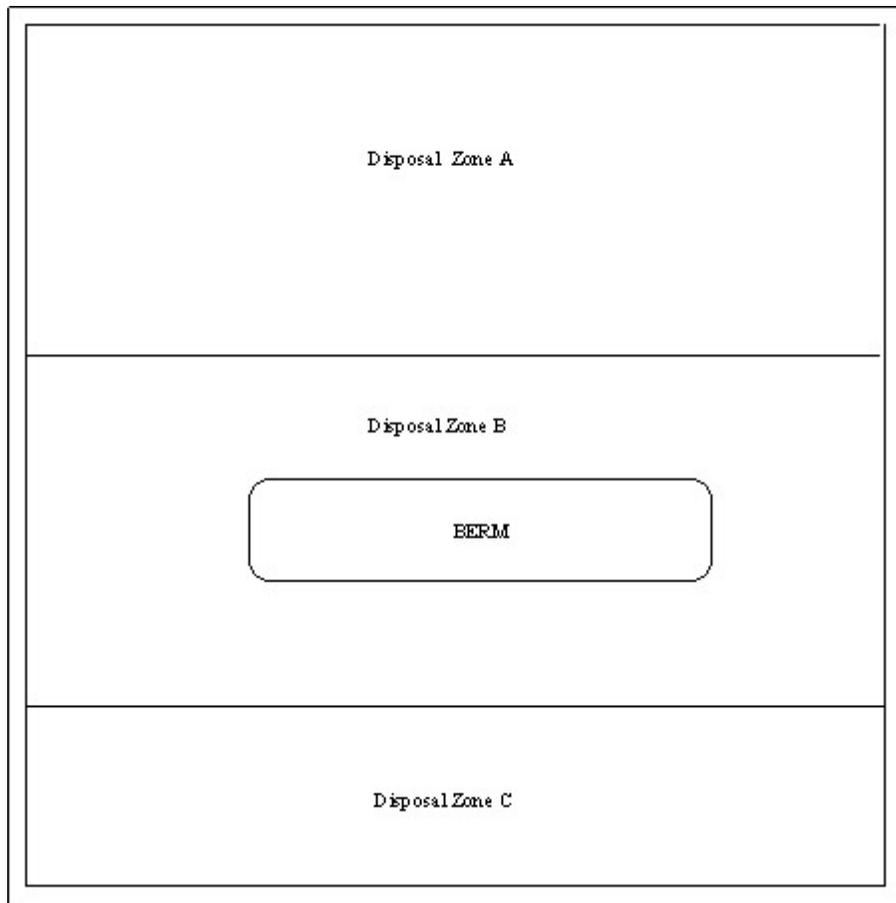


Figure 3. Tampa ODMDS, outlining 330 ft. boundary no-dump zone as well as the Berm and Disposal Zones A, B and C.

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## APPENDIX A

# WATER COLUMN EVALUATIONS NUMERICAL MODEL (STFATE) INPUT PARAMETERS

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Water Column Evaluations  
 Numerical Model (STFATE) Input Parameters  
 Tampa ODMDS

**SITE DESCRIPTION**

<b>Parameter</b>	<b>Value</b>	<b>Units</b>
Number of Grid Points (left to right)	45	
Number of Grid Points (top to bottom)	60	
Spacing Between Grid Points (left to right)	350	ft
Spacing Between Grid Points (top to bottom)	350	ft
Constant Water Depth	70	ft
Roughness Height at Bottom of Disposal Site	.005 <sup>1</sup>	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	
Ambient Density at Depth = 0 ft	1.0222	g/cc
Ambient Density at Depth = 70 ft	1.0241	g/cc

**AMBIENT VELOCITY DATA**

<b>Parameter</b>	<b>Value</b>	<b>Units</b>
Water Depth	70	ft
Profile	2-Point at constant depth	
X-Direction Velocity at Depth = 0 ft	0.46	ft/sec
Z-Direction Velocity at Depth = 0 ft	0.46	ft/sec
X-Direction Velocity at Depth = 60 ft	0.35	ft/sec
Z-Direction Velocity at Depth = 60 ft	0.35	ft/sec

**DISPOSAL OPERATION DATA**

<b>Parameter</b>	<b>Value</b>	<b>Units</b>
Location of Disposal Point from Top of Grid	Zone A=4,000 Zone B=TBD Zone C=12,400	ft
Location of Disposal Point from Left Edge of Grid	7,875	ft
Dumping Over Depression	0	

### INPUT, EXECUTION AND OUTPUT

Parameter	Value	Units
Location of the Upper Left Corner of the Disposal Site - Distance from Top Edge	1,800	ft
Location of the Upper Left Corner of the Disposal Site - Distance from Left Edge	1,800	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Top Edge	13,950	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Left Edge	13,950	ft
Duration of Simulation	14,400	sec
Long Term Time Step	600	sec

### COEFFICIENTS

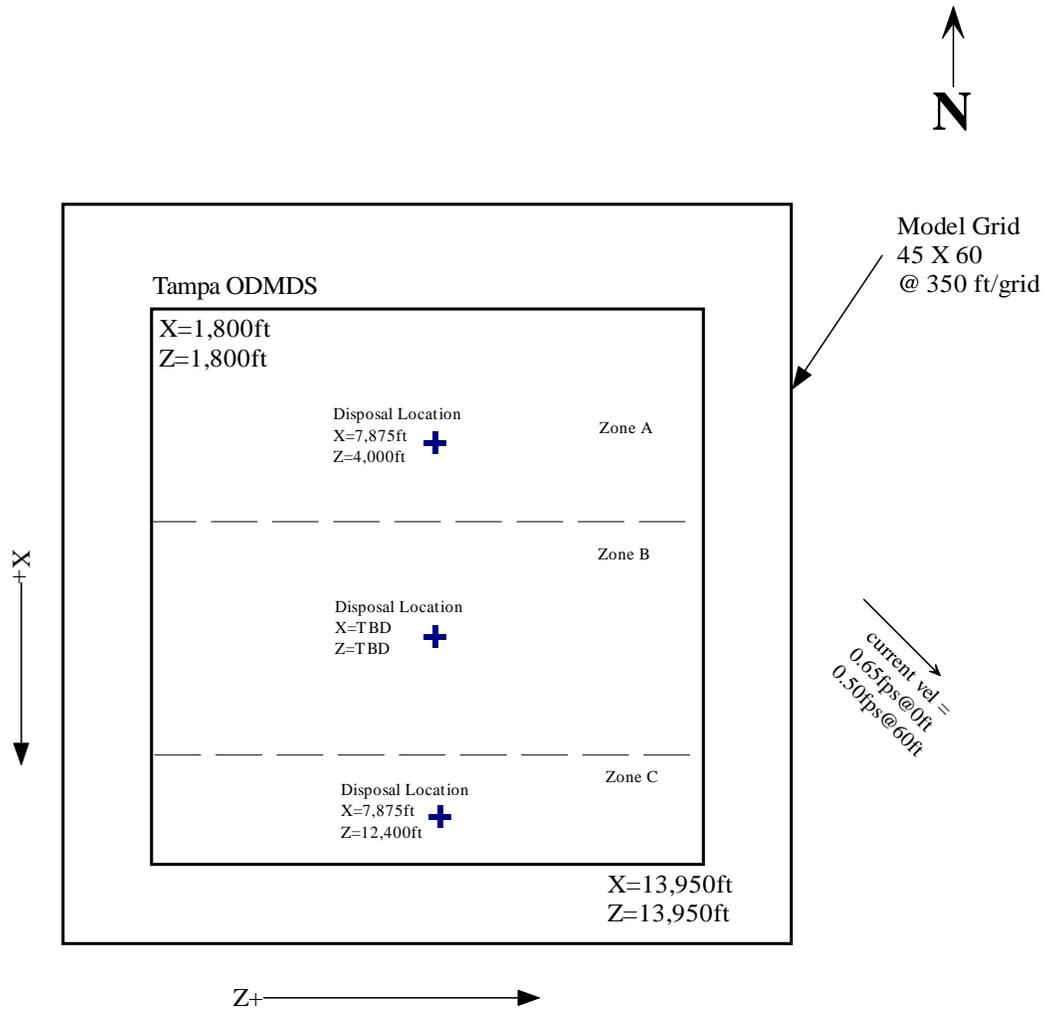
Parameter	Keyword	Value
Settling Coefficient	BETA	0.000 <sup>1</sup>
Apparant Mass Coefficient	CM	1.000 <sup>1</sup>
Drag Coefficient	CD	0.500 <sup>1</sup>
Form Drag for Collapsing Cloud	CDRAG	1.000 <sup>1</sup>
Skin Friction for Collapsing Cloud	CFRIC	0.010 <sup>1</sup>
Drag for an Ellipsoidal Wedge	CD3	0.100 <sup>1</sup>
Drag for a Plate	CD4	1.000 <sup>1</sup>
Friction Between Cloud and Bottom	FRICTN	0.010 <sup>1</sup>
4/3 Law Horizontal Diffusion Dissipation Factor	ALAMDA	0.0225
Unstratified Water Vertical Diffusion Coefficient	AKYO	Pritchard Expression
Cloud/Ambient Density Gradient Ratio	GAMA	0.250 <sup>1</sup>
Turbulent Thermal Entrainment	ALPHAO	0.235 <sup>1</sup>
Entrainment in Collapse	ALPHAC	0.100 <sup>1</sup>
Stripping Factor	CSTRIP	0.003 <sup>1</sup>

<sup>1</sup>Model Default Value

### Typical Dilution Rates

Zone	Dilution at 4 hours	Minimum Dilution outside of ODMDS at all times
A	1,435:1	>100,000:1
C	TBD	N/A

# Tampa ODMDS STFATE Input Parameters



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## APPENDIX B

### GENERIC SPECIAL CONDITIONS FOR MPRSA SECTION 103 PERMITS TAMPA, FLORIDA OFFSHORE ODMDS

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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 Tampa ODMDS, proper disposal of dredged material at the disposal area within the Tampa ODMDS, and transportation of the hopper dredge or disposal barge or scow back to the dredging site.

B. The boundary coordinates of the Tampa ODMDS is defined as the rectangle delineated by the following latitude/longitude and State Plane Coordinate system NAD 83 coordinates:

Latitude	Longitude	Northing	Easting
27°32'27"N	83°06'02"W	1167359.380	299521.885
27°32'27"N	83°03'46"W	1167252.496	311764.933
27°30'27"N	83°06'02"W	1155240.299	299414.296
27°30'27"N	83°03'46"W	1155133.502	311661.038

No discharge shall occur within 330 feet (100 meters) of the disposal site boundaries. This area is designated as the ODMDS authorized release zone.

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 Tampa ODMDS.

D. The permittee shall use an electronic positioning system to navigate to and from the Tampa 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 Tampa 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 Tampa ODMDS. The certification shall be accomplished by direct comparison of the electronic positioning system's accuracy with a known fixed point.

F. 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 Tampa ODMDS.

G. A disposal operations inspector and/or captain of any tug boat, hopper dredge or other vessel used to transport dredged material to the Tampa ODMDS shall insure 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 U.S. Army Corps of Engineers, Jacksonville District's Regulatory Branch [TELEPHONE NUMBER] and EPA Region 4 at (404) 562-9395 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.

H. When dredged material is discharged, no portion of the hopper dredge or disposal barge or scow shall be outside of the Tampa ODMDS authorized release zone as defined in Special Condition B.

I. The permittee shall use an electronic tracking system (ETS) that will continuously track the horizontal location and draft condition of the disposal vessel (hopper dredge or disposal barge or scow) to and from the Tampa ODMDS. Data shall be collected at least every 500 feet during travel to and from the ODMDS and every minute or every 200 feet of travel, whichever is smaller, while approaching within 1,000 feet and 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.

J. The permittee shall record electronically for each load the following information:

1. Load Number
2. Disposal Vessel or Scow Name
3. Tow Vessel Name (if scow used)
4. Captain of Disposal or Tow Vessel
5. Estimated volume of Load
6. Description of Material Disposed
7. Source of Dredged Material
8. Date, Time and Location at Start at Initiation and Completion of Disposal Event
9. The ETS data required by Special Condition I.

K. The permittee shall conduct a bathymetric survey of the Tampa ODMDS within 3 months prior to project disposal and within 60 days following project completion.

1. The number and length of transects required will be sufficient to encompass the Tampa 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 *Hydrographic Surveying* shall be followed.

2. 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 will be referenced to prescribed NOAA Mean Lower Low Water (MLLW) datum. The horizontal datum should be referenced to the local State Plane Coordinate System (SPCS) for that area or in Geographical Coordinates (latitude-longitude). The horizontal reference datum should be the North American Datum of 1983 (NAD 1983). Bathymetric surveys will be used to monitor the disposal mound to insure a navigation hazard is not produced, assist in verification of material placement, monitor bathymetric changes and trends, aid in environmental effects monitoring, and insure that the site capacity is not exceeded, i.e., the mound does not exceed the site boundaries. The surveys shall be provided to EPA Region 4 when completed and made available to any other appropriate governing agencies.

## 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 (USACE), Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, Florida 32232-0019 and U. S. Environmental Protection Agency (EPA) Region 4's Wetlands, Coastal and Oceans 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 USACE 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](mailto: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).

## APPENDIX C

# GENERIC CONTRACT LANGUAGE FOR IMPEMENTING THE TAMPA ODMDS SMMP REQUIREMENTS

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TYPICAL CONTRACT LANGUAGE FOR IMPEMENTING SMMP  
REQUIREMENTS

3.3 DISPOSAL OF DREDGED MATERIAL

3.3.1 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
---------------	-----------------------------------	-----------------------------------

Tampa ODMDS

[INSERT DISPOSAL AREA 2]	[XX miles]	[XX miles]
-----------------------------	------------	------------

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

3.3.2 Ocean Disposal Notification

The contractor shall notify EPA Region 4 's Wetlands, Coastal and Oceans Branch (61 Forsyth Street, Atlanta, GA 30303) at least 15 calendar days and the local Coast Guard Captain of the Port at least 5 calendar days prior to the first ocean disposal. The notification will be by certified mail with a copy to the Contracting Officer. The following information shall be included in the notification:

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

3.3.3 Ocean Dredged Material Disposal Sites (ODMDS)

The material excavated shall be transported to and deposited in the Tampa 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 Tampa ODMDS as shown on the drawings. Dredged material shall not be placed higher than elevation – 55 feet MLLW in the Tampa ODMDS.

### 3.3.4 Logs

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

- a. Load Number
- b. Disposal Vessel or Scow Name
- c. Tow Vessel Name (if scow used)
- d. Captain of Disposal or Tow Vessel
- e. Estimated volume of Load
- f. Description of Material Disposed
- g. Source of Dredged Material
- h. 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.

### 3.3.5 Overflow, Spills and Leaks

Water and dredged materials shall not be permitted to overflow or spill out of barges, hopper dredges, or dump scows during transport to the disposal site(s). Failure to repair leaks or change the method of operation which is resulting in overflow of spillage will result in suspension of dredging operations and require prompt repair or change of operation to prevent overflow or spillage as a prerequisite to the resumption of dredging.

### 3.3.6 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 of the disposal vessel (hopper dredge or disposal barge or scow) for the entire dredging cycle, including dredging area and disposal area. The ETS shall be capable of displaying and recording in real-time the disposal vessel's draft and location.

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

#### 3.3.6.1 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 0.5 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 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.

#### 3.3.6.2 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. Data shall be collected, during the dredging and disposal cycle, every 500 feet (at least) during travel to the disposal area, and every minute or every 200 feet, whichever is smaller, while approaching within 1,000 feet and within the disposal area.
- c. 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. A sample Track and Draft Plot Diagram is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.
  - (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. A sample Scatter Plot Diagram is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.
  - (3) Summary Table – A spreadsheet which contains all of the information in the log(s) [Section 3.3.4] above shall be prepared and shall correspond to

the exact dump locations represented on the Scatter Plot. A sample Summary Table spreadsheet is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

- d. ETS data and log data required by Section 3.3.4 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](mailto: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.

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[USE LANGUAGE BELOW FOR SI PROJECTS]

### 3.3.6.3 Silent Inspector – Special Standard of Responsibility

#### 3.3.6.3.1 General

The Silent Inspector (SI) is an automated dredge contract monitoring system comprised of both hardware and software developed by the Army Corps of Engineers (the USACE). The USACE developed the SI as a low cost, repeatable, impartial system for automated dredge monitoring. The SI systems integrate various automated systems to record digital dredging and disposal activities in real-time on a 24 hour/7 days a week basis. Information is recorded to the on-board computer where it is available to the USACE Quality Assurance Representative (QAR) for examination and for periodic download and transmittal via an automated email service for inclusion in the SI database. The dredging contractor supplies and owns the on-board system and all associated sensors. Additional information about SI and SI specifications can be found at <http://si.usace.army.mil>.

#### 3.3.6.3.2 Requirement

As authorized by FAR 9.104-2, Contracting Officers may establish special standards of responsibility when necessary. The Contracting Officer has determined that use of the SI is necessary for work performed by hopper dredge and disposal scows. Therefore, in order to be considered responsible for performing this contract, the Offeror must establish prior to contract award that any hopper dredge or disposal scows to be used in performance of this contract has been outfitted with the SI system and the system has been certified by the Engineer Research and Development Center (ERDC) within the last year. Disposal scows shall utilize the monitoring or TDS profile. Questions regarding certification should be addressed to the SI support team at 601-634-2923.

#### 3.3.6.3.3 Data Submissions

Scow data shall be transferred by the contractor automatically to the SI database on intervals not to exceed 24 hours. Hopper dredged data shall be transferred in accordance with the Hopper Dredge Specifications found at <http://si.usace.army.mil>.

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#### 3.3.6.4 Misplaced Materials

Materials deposited outside of the disposal 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 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 shall 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. Misplaced loads may also 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 or removal of such materials at the Contractor's expense. In addition, the Contractor must notify the Contracting Officer and the Environmental Protection Agency Region 4 's Wetlands, Coastal and Oceans Branch (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 Tampa ODMDS. Corrective actions must be implemented by the next dump and the Contracting Officer must be informed of actions taken.