SITE MANAGEMENT PLAN
MISSISSIPPI RIVER, SOUTHWEST PASS, LA.
OCEAN DREDGED MATERIAL DISPOSAL SITE

1. GENERAL

The Marine Protection, Research and Sanctuaries Act (MPRSA) of 1972 (33 U.S. C. Section 1401, ff) is the legislative authority regulating the disposal of dredged material into ocean waters, including the territorial sea. The transportation of dredged material for the purpose of disposal into ocean waters is permitted by the Corps of Engineers or, in the case of federal projects, authorized for disposal under MPRSA Section 103(e), applying environmental criteria established by the Environmental Protection Agency in the Ocean Dumping Regulations (40 CFR Parts 220-229).

Section 102(c) of the MPRSA and 40 CFR Part 228.4(e)(1) authorize the Environmental Protection Agency (EPA) to designate ocean dredged material disposal sites (ODMDS) in accordance with requirements at 40 CFR Parts 228.5 and 228.6. Section 103(b) of MPRSA requires that the Corps of Engineers (COE) use dredged material sites designated by EPA to the maximum extent feasible. Where use of an EPA-designated site is not feasible, the COE may, with concurrence of EPA, select an alternative site in accordance with MPRSA 103(b).

Part 228.3 of the Ocean Dumping Regulations established disposal site management responsibilities; however, the Water Resources Development Act of 1992 (WRDA 92; Public Law 102-580) included a number of amendments to the MPRSA specific to ODMDS management. Section 102(c) of the MPRSA, as amended by Section 506 of WRDA 92, provides that:

a. Site management plans shall be developed for each ODMDS designated pursuant to Section 102(c) of the MPRSA.

b. After January 1, 1995, no ODMDS shall receive a final designation unless a site management plan has been developed.

c. For ODMDSs that received a final designation prior to January 1, 1995, site management plans shall be developed as expeditiously as practicable, but no later than January 1, 1997, giving priority to sites with the greatest potential impact on the environment.

d. Beginning on January 1, 1997, no permit or authorization for dumping shall be issued for a site unless it has received a final designation pursuant to Section 102(c) of the MPRSA, or it is an alternate site selected by the COE under Section 103(b) of the MPRSA.

This site management plan for the Mississippi River, Southwest Pass ODMDS was developed jointly by the U.S. Environmental Protection Agency, Region 6 (EPA, Region 6) and the U.S. Army Corps of Engineers, New Orleans District (USACE, NOD). In accordance with Section 102(c) of the MPRSA, as amended by WRDA 92, the plan includes the following:

a. a baseline assessment of conditions at the site;

b. a program for monitoring the site;

c. special management conditions or practices to be implemented at the site that are necessary for protection of the environment;

d. consideration of the quantity of dredged material to be disposed of at the site, and the presence, nature, and bioavailability of the contaminants in the material;

e. consideration of the anticipated use of the site over the long term, including the anticipated closure date for the site, if applicable, and any need for management of the site after the closure of the site; and

f. a schedule for review and revision of the plan.

1.1 SITE MANAGEMENT OBJECTIVES

The purpose of ocean dredged material site management is to ensure that disposal activities do not unreasonably degrade the marine environment or interfere with other beneficial uses (e.g., navigation) of the ocean.

The specific objectives of management of the Mississippi River, Southwest Pass Ocean Dredged Material Disposal Site (ODMDS) are as follows:

a. beneficial use of dredged material;

b. ocean disposal of only that dredged material that satisfies the criteria set forth in 40 CFR Part 227 Subparts B, C, D, E, and G and Part 228.4(e) and is suitable for unrestricted placement at the ODMDS; and

c. avoidance of excessive and prolonged mounding either within the site boundaries or in areas adjacent to the site as a direct result of disposal operations.

1.2 ROLES AND RESPONSIBILITIES

In accordance with Section 102 (c) of the MPRSA and with the Regional Memorandum of Understanding between USACE, NOD and EPA, Region 6, on Management of ODMDSs signed March 15, 1988, EPA is responsible for designation of ODMDSs. Where use of an EPA-designated site is not feasible, the USACE, NOD may, with concurrence of EPA, Region 6 select an alternative site in accordance with Section 103(b) of the MPRSA as amended by Section 506 of WRDA 1992.

Development of Site Management Plans for ODMDSs within the New Orleans District is the joint responsibility of EPA, Region 6 and the USACE, NOD. Both agencies are responsible for assuring that all components of the site management plans are implementable, practical, and applicable to site management decision making.

1.3 FUNDING

Physical, chemical, and biological effects testing of dredged material prior to disposal at the ODMDS will be undertaken and funded by the USACE, NOD. The USACE, NOD also will be responsible for costs associated with disposal-site hydrographic monitoring. Should monitoring indicate that additional studies and/or tests are needed at the ODMDS, the cost for such work would be shared by the USACE, NOD and EPA, Region 6. Physical, chemical, and biological effects testing at the ODMDS or in the site environs after disposal that is not required as a result of monitoring will be funded by EPA, Region 6. Funding of all aspects of this site-management plan is subject to Congressional budget constraints.

2.0 BASELINE ASSESSMENT

2.1 Site Characterization

The Mississippi River, Southwest Pass ODMDS is located west of and parallel to the Mississippi River, Southwest Pass bar channel (Figure 1.). The coordinates of the rectangular site are as follows 28°54'12" N, 89°27'15" W; 28°54'12" N, 89°26'00" W; 28°51'00" N, 89°27'15" W; 28°51'00" N, 89°26'00" W. The northern boundary of the ODMDS is approximately 1.75 nautical miles from the mouth of the Mississippi River.

Baseline conditions at the Mississippi River, Southwest Pass ODMDS were assessed during the site designation process. Details of baseline conditions, including descriptions of the marine environment in the vicinity of the sites, and the physical, chemical and biological characteristics of the sediments and the water column at the sites, are contained in the "Final Environmental Impact Statement, Southwest Pass- Mississippi River Ocean Dredged Material Disposal Site Designation" (EPA, 1988). In 1995, EPA collected and characterized sediment and biological samples at the Mississippi River, Southwest Pass ODMDS. This information updates the Environmental Impact Statement baseline conditions at the disposal site.

2.2 Disposal Site History

The Rivers and Harbors Acts of 1946 and 1962, the Supplemental Appropriations Act of 1985, and the Water Resources Development Act of 1986 provided for the construction of a -55-foot deep channel in the Mississippi River from the Gulf of Mexico to Baton Rouge, LA., a distance of 257 miles. Construction of the -55-foot channel is not complete. Currently a channel with the following dimensions is maintained:

-45' deep x 500' wide Mile 232.4 to Mile 104.5
-45' deep x 750' wide Mile 104.5 to Mile 18.0 Below Head of Passes
-45' deep x 600' wide between Mile 18.0 Below Head of Passes and Mile 22 Below Head of Passes

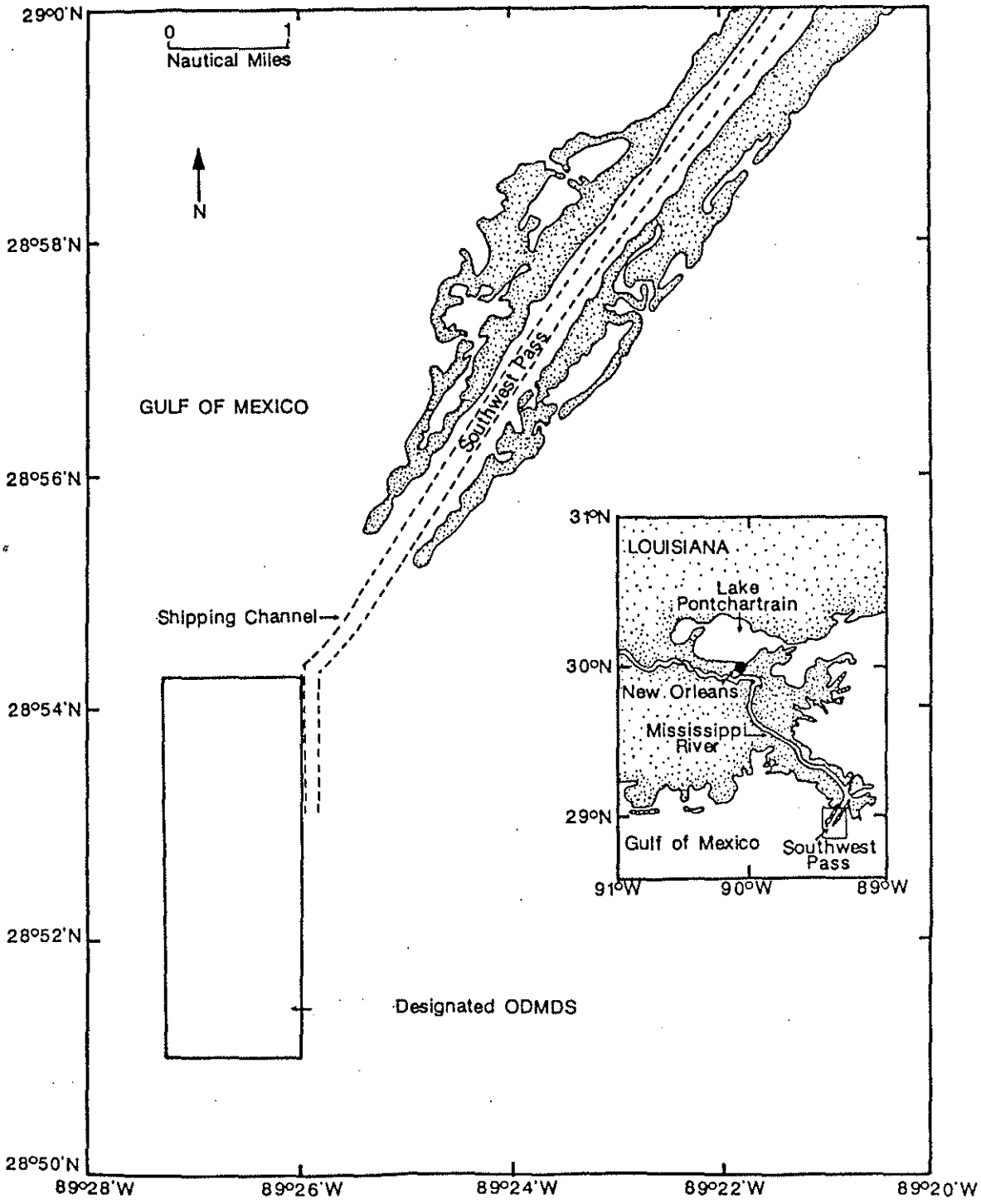

FIGURE 1. Mississippi River, Southwest Pass ODMDS

The present configuration of the site was established during the site designation process. The existing site received interim designation for disposal of dredged material from Mississippi River, Southwest Pass in 1977(42 FR 2461 et seq.). Interim status of the site was extended indefinitely in January 1980. The Mississippi River, Southwest Pass ODMDS received final designation on May 1, 1989 (54 FR 61).

History of disposal of dredged material prior to 1976 is incomplete. Dredging records dating back to 1960 indicate discontinuous reaches of the lower jetty and bar channel were maintained with hopper dredges.

Maintenance dredging of the Mississippi River, Southwest Pass area is required on an annual basis. Dredging is conducted between Mile 4 Above Head of Passes and Mile 22 Below Head of Passes. While deep draft hopper dredges are utilized for maintenance along the entire channel length, cutterhead dredges are utilized between Mile 1 and Mile 18.8 Below Head of Passes. Material removed from the lower jetty (Mile 11 Below Head of Passes to Mile 18.8 Below Head of Passes) by cutterhead dredges is deposited for bank nourishment or wetlands development. Material removed from the lower jetty and bar channel (Mile 11 Below Head of Passes to Mile 22 Below Head of Passes) by deep draft hopper dredges is deposited in the ODMDS. Only dredged material from the navigation channel is placed in the ODMDS.

The hopper dredges use two methods of dredging and disposal when working in the lower jetty and bar channel reaches; dredge and haul; and dredge and haul with agitation. In the dredge and haul mode; material is pumped into the hopper and hauled and deposited in the ODMDS. Agitation dredging consists of filling a hopper dredge to capacity and allowing it to continuously overflow. The very fine suspended sediments are released and swept away by littoral currents which generally flow westward. Dredged material that accumulates in the hopper and is not re-suspended during agitation is hauled and deposited into the ODMDS.

Dredging is conducted on non-continuous reaches beginning in the spring and continuing to the fall. Dredging is conducted in areas of high shoaling, often with multiple deep draft hopper dredges together. Maintenance may be conducted within the lower jetty and bar channel reaches at any time throughout the dredging

season. When a deep draft hopper dredge is working in the channel, dredging and disposal operations will occur 24 hours a day, 7 days a week until authorized channel dimensions are restored. Table 1. provides a summary of the dredged quantities since 1976.

3.0 Quantity of Material and Presence of Contamination

3.1 Summary of information used to determine size of site, life span, and to protect against storm-induced erosion.

The rectangular shaped Mississippi River, Southwest Pass ODMDS is 3.44 square nautical miles in size. The ODMDS parallels and is west of the Mississippi River Southwest Pass bar channel. When EPA designated it an interim ODMDS in 1977, the site had been used historically for disposal of dredged material from the navigation channel. The location and configuration of the site resulted from the ease of disposal from the navigation channel. In January 1980 the interim status of the site was extended indefinitely. On May 1, 1989, final designation of the ODMDS was completed. No recommendations for changes in the size of the site were made as a result of the site designation studies.

The location and configuration of the ODMDS involves only short transit of the hopper dredge from the navigation channel to the ODMDS. This minimizes interference with other activities such as fishing and navigation in the site environs during dredging and disposal operations. The site also is easily accessible for surveillance of dredged material disposal operations and monitoring.

Like most ODMDSs in the Gulf of Mexico, the Mississippi River, Southwest Pass ODMDS is a dispersive site. The dredged material discharged into the site is reworked by wave and littoral currents and moved out of the ODMDS.

Since 1976, the Mississippi River, Southwest Pass lower jetty and bar channel reaches have been dredged annually, and dredged material has been placed in the ODMDS. Approximately 3.5 million cubic yards of dredged material are removed from the lower jetty and bar channel reaches and placed in the ODMDS annually. The dredged material generally can be characterized as mixture of sand, silt, and clay. The average percentages of sand, silt, and

Table 1. Summary of Dredged Quantities Deposited at the Mississippi River, Southwest Pass ODMDS

Dredging Interval	Quantity of Dredged Material (cubic yards)
CY76 01 Jan - 26 May '76	3,926,500
CY77 01 Apr - 30 Apr '77	31,400
CY78 01 Jan - 30 Jul '78	2,698,900
CY79 01 Jan - 30 Sep '79	5,401,200
CY80 02 Jan - 30 Jul '80	6,315,100
CY81 12 Jun - 30 Jul '81	1,769,500
CY82 15 Jul - 02 Aug '82	330,300
CY83 23 Jan - 18 Jun '83	8,383,100
CY84 14 Apr - 30 Dec '84	2,282,000
CY85 03 Jan - 13 Dec '85 01 Jan - 31 Dec '85	1,170,600 3,132,500
CY86 01 Jan - 30 Apr '86	3,100,000
CY87 11 Feb - 03 Nov '87	8,556,000

Table 1. Continued

CY88 20 Jan - 02 Jun '88	2,495,800
CY89 01 Jan - 04 Aug '89	1,381,200
CY90 07 Feb - 02 Aug '90	1,245,100
CY91 08 Jan - 10 Jul '91	450,000
CY92 01 Dec - 01 Aug '92	7,200,700
CY93 03 Jan - 05 Oct '93	11,055,300
CY94 01 Oct - 01 Aug '94	4,353,300
CY95 09 Feb - 01 Sep '95	7,504,695

clay sampled from 12 stations in the jetty and bar channel, located between Mile 11 and Mile 22.2 Below Head of Passes, were 24.9%, 50.1%, and 24.9% respectively. It is anticipated that annual maintenance of the Mississippi River, Southwest Pass lower jetty and bar channel reaches, and disposal of dredged material into the ODMDS will continue in the future.

3.2 Summary of requirements used to determine suitability of dredged material for disposal at the site.

In accordance with 40 CFR Parts 225 and 227 of the Ocean Dumping Regulations, national implementation guidance for the MPRSA Section 103 Program (Ocean Dumping Program) was developed jointly by the Corps of Engineers and the Environmental Protection Agency. The guidance was to define technical procedures for testing dredged material to assess its compliance with the

applicable physical, chemical, and biological test provisions of Part 227 of the Ocean Dumping Regulations. A national guidance manual was first issued in 1977 and an updated version, "Evaluation of Dredged Material Proposed for Ocean Disposal (Testing Manual)," was issued in February, 1991.

The 1991 manual, commonly referred to as the "1991 Green Book," contains summaries and discussions of the procedures for ecological evaluation of dredged material required by the Ocean Dumping Regulations, tests to implement them, definitions, sample collection, and preservation procedures, evaluative procedures, calculations, and interpretive guidance. The manual also provides supporting references required for the evaluation of dredged material discharge applications in accordance with the regulations.

Because the "1991 Green Book" was national in scope, development of more detailed implementation guidance tailoring the procedures of the manual to local needs was encouraged. In October, 1992, the USACE, NOD and EPA, Region 6 signed the "Regional Implementation Agreement (RIA) for Evaluating Dredged Material Proposed for Ocean Disposal Off the Louisiana Coast." This agreement was jointly developed by USACE, NOD and EPA, Region 6 to adapt the "1991 Green Book" procedures to the region.

The RIA applies to Corps Civil Works projects as well as to MPRSA Section 103 permit applications. It describes in detail the coordination process to be followed for dredged material evaluations to facilitate early coordination and to ensure each agency is aware of when in the process information exchange is required. The RIA contains lists of contaminants of concern of general application to the Louisiana coast. It addresses the implementation of a tiered testing framework specifying preferred test methods; procedures for collecting and storing samples of water and sediment for use in testing; specific benthic and water column test species to be used; required method detection limits; decision values to be used; and procedures for interpreting bioaccumulation results to make Tier III and Tier IV decisions. Locations of established reference sites also are included in the RIA.

In accordance with Part 225 of the Ocean Dumping Regulations, prior to the discharge of dredged material into the ODMDS the

USACE, NOD must evaluate the proposed discharge in accordance with the criteria set forth in Part 227. The RIA requires that the information listed below be submitted by USACE, NOD to EPA, Region 6 at least 3 months before the advertisement date for the proposed maintenance event. When government dredges will perform maintenance, the information must be submitted at the beginning of the fiscal year or at least 3 months before anticipated dredging. After receiving the required information, EPA, Region 6 will make an independent evaluation of the proposed discharge in accordance with the criteria within 15 working days. EPA, Region 6 must inform USACE, NOD in writing whether or not the proposed discharge complies with the criteria. If EPA determines that the proposed discharge complies with the criteria, the USACE, NOD may proceed. If EPA determines that the proposed discharge does not comply with the criteria, ocean disposal of the dredged material is prohibited unless procedures for invoking economic impact are followed in accordance with 40 CFR Part 225.3 and EPA, Region 6 grants a waiver pursuant to 40 CFR Part 225.4.

Information provided to EPA, Region 6 prior to the discharge of dredged material into the ODMDS will include the following:

a. The proposed dredging project will be described to include: the volume and area to be dredged; extent of shoaling; interruption or changes in standard operations resulting from shoaling; the anticipated type of dredge and disposal vessel; anticipated start date and duration of the disposal operations; large scale map showing the location of the project; the project plan drawing; design depth and allowable over depth; and disposal quantities and work details.

b. A short description of the last maintenance dredging performed.

c. A dredged material characterization/evaluation to include the following:

1. At a minimum, a Tier I evaluation consisting of a comprehensive analysis of existing and readily available information on the proposed dredged material shall be conducted for every dredging operation that will result in dredged material being discharged into the ODMDS. It is necessary to proceed through the tiered-testing procedures defined in the "1991 Green

Book" and the RIA until sufficient information for making a definitive decision about the suitability of the dredged material for ocean disposal has been generated.

2. Copies of the test results conducted according to the site specific sampling design and methods discussed in the RIA. These test results include data for all tests (physical, chemical, and biological), and the name of the laboratory(s) which performed the tests. When previous test results are being used for the evaluation, the date of the original submittal should be referenced.

3. A description of the sampling survey, including dates, sampling devices used, and the location of the sediment sampling stations for each dredging area and reference site station by latitude and longitude, LORAN-C, or Global Positioning System and also in general terms, i.e., by channel marker, buoy number or other significant landmark.

4. All field sampling, laboratory testing, and quality assurance/quality control (QA/QC) procedures must be described, and analytical methods must be specified. References for laboratory protocols for physical, chemical, and biological analyses must be described including the following:

a) Method detection limits, detection limits achieved by the laboratory, and EPA method numbers and other approved methods that do not have a specific EPA number.

b) Test species used in each test, the supplier or collection site for each test species, and QA/QC procedures for test species acclimation and holding.

c) Location of control sediment samples and QA/QC procedures and rationale for presuming the control sediment is free of contaminants.

d) Source of seawater used in all biological tests.

e) Bioassay testing procedures and QA/QC information for the bioassays conducted.

f) Statistical analysis procedures.

d. A regulatory compliance evaluation including a review of the following subparts/sections of the Ocean Dumping Regulations:

1. Part 227 Subpart B - Environmental Impact

a) 227.1 Applicability

b) 227.4 Criteria for evaluating environmental impact

c) 227.5 Prohibited materials

d) 227.6 Constituents prohibited as other than trace contaminants

e) 227.9 Limitations on quantities of waste materials

f) 227.10 Hazards to fishing, navigation, shorelines or beaches

g) 227.13 Dredged materials

2. Part 227 Subpart C - Need for Ocean Dumping (all sections)

The USACE, NOD will evaluate alternative disposal options, particularly alternatives involving the beneficial use of dredged materials. The alternatives analysis will reflect not only current technological and cost considerations but also environmental impact information.

3. Part 227 Subpart D - Impact of the Proposed Dumping on Aesthetic, Recreational and Economic Values (all sections)

4. Part 227 Subpart E - Impact of the proposed Dumping on Other Uses of the Ocean (all sections)

5. Part 227 Subpart G - Definitions

6. Part 228.4(e) - Dredged Material Permits

Dredged material from the Mississippi River, Southwest Pass lower jetty and bar channel reaches was sampled and analyzed in

accordance with the "1991 Green Book" in 1991 and 1995. A Tier III evaluation consisting of physical analyses, bulk sediment analyses, water chemistry and elutriate analyses, and toxicity bioassays was conducted in both 1991 and 1995. The results of the analyses indicated that the dredged material proposed for discharge into the ODMDS was in compliance with the Ocean Dumping Criteria and was suitable for ocean disposal.

Although dredged material from the Mississippi River, Southwest Pass lower jetty and bar channel reaches has been placed in the ODMDS annually, sampling or analyses has not been performed annually. Prior to each maintenance event, a Tier I evaluation has been conducted. Comprehensive analyses of existing and readily available information on the proposed dredged material, including spill reports from the U.S. Coast Guard, National Response Center, indicated "no reason to believe" that the proposed discharges of dredged material were not suitable for ocean disposal. The USACE, NOD and EPA, Region 6, will use best professional judgement in deciding when new chemical and biological data are needed.

4.0 ANTICIPATED SITE USE

Dredged material will be removed annually using deep draft hopper dredges and discharged via agitation or dredge and haul into the ODMDS. The dredged material generally is comprised of 24.9% sand, 50.1% silt, and 24.9% clay.

Dredging in the lower jetty and bar channel reaches normally begins in the spring and continues into the fall. When a dredge is working in the bar channel, disposal operations will occur 24 hours a day, 7 days a week until authorized channel dimensions are restored.

It is anticipated that annual maintenance of the Mississippi River, Southwest Pass lower jetty and bar channel reaches, and disposal of dredged material into the ODMDS will continue in the future. During each maintenance event, approximately 3.5 million cubic yards of dredged material will be discharged into the ODMDS.

5.0 SPECIAL MANAGEMENT CONDITIONS OR PRACTICES

Special management conditions or practices applicable to the

Mississippi River, Southwest Pass ODMDS include the following:

a. Options for beneficial use of dredged material taken from Mississippi River, Southwest Pass lower jetty and bar channel were considered during development of the Mississippi River, Southwest Pass Long Term Disposal Plan (LTDP) and in the EIS ODMDS designation process. The alternatives reviewed included pump out of hopper dredges for wetlands creation or beach nourishment, or concentrating material while bottom dumping to create berms. These alternatives were determined to be infeasible due to the following: high costs; material unsuitable for beach nourishment; and few environmental benefits. Additionally, during the dredging season, hopper dredges must maintain high production in order to maintain project depths. It was determined during the LTDP process that the time required to conduct pump out operations ashore or at distant open water locations would result in the loss of project depths and adversely impact navigation.

Beneficial use is conducted with material removed from the jetty reach by the cutterhead dredge. This material is deposited beneficially for bank restoration or wetlands development. Beneficial use of dredged material from the Mississippi River, Southwest Pass bar channel has not been implemented because hydraulic cutterhead pipeline dredges with trailing pipe, traditionally used for beneficial use, are not used in the bar channel. Rough sea conditions, ship traffic, and the need to maintain high production rates while being able to rapidly mobilize equipment in the bar channel reach preclude use of this type of dredge. However, prior to each maintenance event, beneficial use alternatives are investigated. Should technology and or funding become available that would make beneficial use possible, the USACE, NOD will incorporate beneficial use into the disposal plan for the bar channel reach of the Mississippi River, Southwest Pass.

b. Only dredged material determined by USACE, NOD and EPA, Region 6 to satisfy the criteria set forth in 40 CFR Part 227 Subparts B, C, D, E, and G and part 228.4(e) of the Ocean Dumping Regulations will be considered for unrestricted placement at the ODMDSs. Additional evaluation of management options will be required for any dredged material which does not meet the criteria.

6.0 MONITORING PROGRAM

Section 102(c) of the MPRSA, as amended by WRDA 1992, and Part 228 of the Ocean Dumping Regulations establish the requirement for an ODMDS monitoring program. Section 228.9 states that the primary purpose of a monitoring program is to evaluate the impact of disposal on the marine environment by referencing the monitoring results to a set of baseline conditions. The results of a monitoring program are used to determine if site management practices need to be changed to avoid unreasonable degradation of the marine environment.

The results of investigations presented in the site designation Final Environmental Impact Statement (EPA, 1988) and during EPA's 1995 survey will serve as the main body of baseline data for the monitoring of impacts associated with the use of the Mississippi River, Southwest Pass ODMDS.

The Mississippi River, Southwest Pass ODMDS has been used historically without significant environmental impacts. The site is dispersive in nature. Resources or amenities of concern that could be impacted by dredged material disposal at the ODMDS have been identified and management practices have been implemented to prevent adverse impacts to the same.

To ensure that persistent mounding is not occurring, hydrographic monitoring will be performed at and adjacent to the site pre- and post-disposal. If the post-disposal survey indicates either mounding greater than 2.0 feet above pre-disposal elevation has occurred within the site or mounding greater than 12 inches above pre-disposal elevation has occurred off the site, a subsequent hydrographic survey will be conducted prior to the next disposal event to ensure that dispersion of the previously deposited sediments has occurred. If this hydrographic survey indicates that the sediments have dispersed, no further action is necessary. However, should the survey indicate that mounding persists, USACE, NOD and EPA, Region 6 will determine management actions appropriate to the site to alleviate sediment mounding in subsequent disposal events.

7.0 SITE MANAGEMENT PLAN REVIEW AND REVISION

Pursuant to Section 102(c) of the MPRSA, as amended WRDA 1992, the site management plan for the Mississippi River, Southwest Pass ODMDS will be reviewed and revised, if necessary, not less frequently than 10 years after adoption and every 10 years thereafter. Modifications or updates to the site management plan may be proposed by either the USACE, NOD or EPA, Region 6. The modification may be incorporated into the plan by mutual consent of both agencies.

William B. Hathaway
Director
Water Quality Protection Division
Region 6
Environmental Protection Agency

12/23/96
Date

Albert J. Guillot, P.E.
Chief, Operations Division
New Orleans District
U.S. Army Corps of Engineers

12/20/96
Date

REFERENCES CITED

EPA. 1988. Final Environmental Impact Statement, Southwest Pass-- Mississippi River Ocean Dredged Material Disposal Site (ODMDS) Designation. Region 6, Dallas, Texas.