RULES and REGULATIONS

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 228

[FRL-5028-7]

Ocean Dumping; Designation of Site

Thursday, August 11, 1994

***41243** AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

***41244** SUMMARY: EPA designates a deep ocean dredged material disposal site (SF-DODS) located off San Francisco, California, for the disposal of suitable dredged material removed from the San Francisco Bay region and other nearby harbors or dredging sites. EPA has determined that the site selected in the Final EIS as the preferred site will be the site designated as SF-DODS in this Final Rule. The center of the SF-DODS is located approximately 49 nautical miles (91 kilometers) west of the Golden Gate and occupies an area of 6.5 square nautical miles (22 square kilometers). Water depths within the area range between 8,200 to 9,840 feet (2,500 to 3,000 meters). The center coordinates of the oval-shaped site are: 37degrees39.0' North latitude by 123degrees29.0' West longitude (North American Datum from 1983), with length (north-south axis) and width (west-east axis) dimensions of approximately 4 nautical miles (7.5 kilometers) and 2.5 nautical miles (4.5 kilometers), respectively. This action is necessary to provide an acceptable ocean dumping site for disposal of suitable dredged material; the suitability of proposed dredged material is determined by appropriate sediment testing protocols. The designation of SF-DODS is for a period of 50 years, with an interim capacity of 6 million cubic yards of dredged material per calendar year until December 31, 1996. Site capacity following December 31, 1996 will be determined based on either a comprehensive long-term management strategy for management of dredged materials from San Francisco Bay or on a separate alternatives-based EPA evaluation of the need for ocean disposal. Disposal operations at the site will be prohibited if the site management and monitoring program is not implemented.

EFFECTIVE DATE: This rule is effective September 12, 1994.

ADDRESSES: The supporting document for this designation is the Final Environmental Impact Statement (EIS) for Designation of a Deep Water Ocean Dredged Material Disposal Site off San Francisco, California, August 1993, which is available for public inspection at the following locations:

A. EPA Public Information Reference Unit (PIRU), Room 2904 (rear), 401 M Street, SW., Washington, DC.

B. EPA Region IX, Library, 75 Hawthorne Street, 13th Floor, San Francisco, California.

C. ABAG/MTC Library, 101 8th Street, Oakland, California.

D. Alameda County Library, 3121 Diablo Avenue, Hayward, California.

E. Bancroft Library, University of California, Berkeley, California.

F. Berkeley Public Library, 2090 Kittredge Street, Berkeley, California.

G. Daly City Public Library, 40 Wembley Drive, Daly City, California.

H. Environmental Information Center, San Jose State University, 125 South 7th Street, San Jose, California.

I. Half Moon Bay Library, 620 Correas Street, Half Moon Bay, California.

J. Marin County Library, Civic Center, 3501 Civic Center Drive, San Rafael, California.

K. North Bay Cooperative Library, 725 Third Street, Santa Rosa, California.

L. Oakland Public Library, 125 14th Street, Oakland, California.

M. Richmond Public Library, 325 Civic Center Plaza, Richmond, California.

N. San Francisco Public Library, Civic Center, Larkin & McAllister, San Francisco, California.

O. San Francisco State University Library, 1630 Holloway Avenue, San Francisco, California.

P. San Mateo County Library, 25 Tower Road, San Mateo, California.

Q. Santa Clara County Free Library, 1095 N. Seventh Street, San Jose, California.

R. Santa Cruz Public Library, 224 Church Street, Santa Cruz, California.

S. Sausalito Public Library, 420 Litho Street, Sausalito, California.

T. Stanford University Library, Stanford, California.

FOR FURTHER INFORMATION CONTACT: Mr. Allan Ota, Ocean Disposal Coordinator, U.S. Environmental Protection Agency, Region IX (W-3-3), 75 Hawthorne Street, San Francisco, California 94105, telephone (415) 744-1980.

SUPPLEMENTARY INFORMATION:

A. Background

Section 102(c) of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972, as amended, 33 U.S.C. Sections 1401 et seq., gives the Administrator of EPA authority to designate sites where ocean dumping may be permitted. On October 1, 1986 the Administrator delegated authority to designate ocean dredged material disposal sites (ODMDS) to the Regional Administrator of the EPA Region in which the sites are located. The SF-DODS designation action is being made pursuant to that authority.

The EPA Ocean Dumping Regulations (40 CFR 228.4) state that ocean dumping sites will be designated by publication pursuant to 40 CFR part 228. This site designation is being published as final rulemaking in accordance

with §228.4(e) of the Ocean Dumping Regulations, which permits the designation of ocean disposal sites for dredged material.

The center of the SF-DODS is located approximately 49 nautical miles (91 kilometers) west of the Golden Gate and occupies an area of approximately 6.5 square nautical miles (22 square kilometers). Water depths within the area range between approximately 8,200 to 9,840 feet (2,500 to 3,000 meters). The center coordinates of the oval-shaped site are: 37degrees39.0' North latitude by 123degrees29.0' West longitude (North American Datum from 1983), with length (north-south axis) and width (west-east axis) dimensions of approximately 4 nautical miles (7.5 kilometers) and 2.5 nautical miles (4.5 kilometers), respectively. EPA Region IX now designates SF-DODS as an ocean dredged material disposal site for continued use for a period of 50 years, with an interim capacity of 6 million cubic yards of dredged material per calendar year until December 31, 1996.

Site use is subject to implementation of the specific site management and monitoring requirements contained in this Final Rule, which are now identified as the Site Monitoring and Management Plan (SMMP) for the SF-DODS. The Proposed Rule designating the SF-DODS did not set forth specific management and monitoring requirements in the Rule itself. Instead, Region 9 had proposed that provisions concerning site management and monitoring would be contained in a separate Site Management and Monitoring Plan (SMMP) document. Though this separate SMMP document would not, strictly, have been part of the Rule designating the SF-DODS, Region 9 did signal its intent in the Preamble accompanying the Proposed Rule that implementation of the provisions of the SMMP document would have been mandatory. The Proposed Rule specifically would have required that the SMMP be implemented as a condition of site use. Comments received on the proposed Rule have convinced Region 9 that the mandatory nature of site management and monitoring would be placed on a clearer legal footing if the SMMP were made a part of the Rule instead of being set forth in a separate planning document.

The SMMP provisions in the Final Rule are closely related to Region 9's previous proposals on site monitoring and management. These proposals have been put forth for public review and comment on at least two occasions. First, Region 9 outlined its proposals concerning site monitoring and management in the Preamble accompanying the Proposed Rule ***41245** designating the SF-DODS. Region 9 published the Proposed Rule in the Federal Register on February 17, 1994 (59 FR 7952), and held open a public comment period on the Proposed Rule until March 18, 1994. Second, Region 9 completed a draft of a separate SMMP document and made this document available for public review and comment. Region 9 published this SMMP document as an EPA Public Notice on April 20, 1994 and accepted comments on this document until June 6, 1994. The SMMP provisions in the Final Rule were drafted after considering the public comment received in response to the Proposed Rule Preamble and the SMMP document. See Responses to Comments, Section F. below.

Region 9 is also preparing a Site Management and Monitoring Plan Implementation Manual (SMMP Implementation Manual). This manual will provide detailed guidance on practical aspects of implementing the SMMP provisions in the Final Rule.

B. EIS Development

Section 102(c) of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. Sections 4321 et seq., requires that Federal agencies prepare an environmental impact statement (EIS) on proposals for major Federal actions significantly affecting the quality of the human environment. The object of NEPA is to build into the agency decision-making process careful consideration of all environmental aspects of proposed actions, including evaluation of reasonable alternatives to the proposed action.

A Notice of Availability of the Draft EIS was published in the Federal Register on December 11, 1992 discussing EPA's intent to designate a deep water ocean dredged material disposal site off San Francisco (57 FR 58805). The Draft EIS, titled: Draft Environmental Impact Statement (EIS) for San Francisco Bay Deep Water Dredged Material Disposal Site Designation, evaluated a range of potential alternative disposal sites as summarized below. The comment period closed on January 25, 1993. EPA received 35 comment letters on the Draft EIS and incorporated changes where appropriate. On September 10, 1993, notice of availability for public review and comment on the Final EIS was published in the Federal Register (58 FR 47741). The comment period for the Final EIS closed on October 29, 1993.

EIS Alternatives Analysis

Several million cubic yards of dredged material are generated annually in the San Francisco Bay area. Traditionally, most of this dredged material has been disposed at sites within the San Francisco Bay estuary. However, existing upland and in-bay sites have limited capacity for disposal of large volumes of dredged material, and concerns about the potential environmental impacts of continued large-scale disposal within the estuary have grown steadily in recent years.

EPA's analysis of alternatives included detailed examination of several potential ocean dump sites for dredged materials from San Francisco Bay and a preliminary, less-detailed review of potential alternative means of handling these dredged materials other than disposal at an ocean dump site. For EPA's present purposes, a limited review of alternatives to ocean dumping of dredged materials was appropriate. EPA needed only to determine whether alternatives to ocean dumping now appear to offer sufficient capacity for all dredged material that will be generated in the future. Greater detail concerning alternatives to ocean dumping of dredged material is not necessary at this stage because designation of an ocean dumping site under 40 CFR part 228 is essentially a preliminary, planning-like measure. The practical effect of such a designation is only to require that if future ocean dumping activity is permitted under 40 CFR part 227, such dumping should normally be consolidated at the designated site. Designation of an ocean dumping site does not authorize any actual dumping and does not preclude EPA or the U.S. Army Corps of Engineers from finding that alternative means of managing dredged materials from San Francisco Bay are available and environmentally preferable.

EPA has determined that it is appropriate to designate an ocean dumping site for dredged materials from San Francisco Bay site now, even if alternatives to ocean dumping should eventually prove to be available, because it appears unlikely that alternative means of managing dredged material will accommodate all of this dredged material that will be generated in the future. As discussed in the Final EIS, there are many substantial obstacles involved with the potential alternatives to ocean dumping of dredged material. As noted, one alternative that is currently being employed is disposal of dredged material within San Francisco Bay itself. Several resource and regulatory agencies, however, have indicated that disposal of dredged material within San Francisco Bay may be endangering the Bay ecosystem, and some of these agencies have suggested or are working towards setting low ceilings on the annual volume of dredged material that may be placed in the Bay. Disposing of dredged materials in upland locations or employing them for various beneficial uses are other alternatives which may prove feasible. Current information, however, which is recited in the Final EIS, suggests that it is unlikely that these alternatives will feasibly accommodate all dredged materials likely to be generated from San Francisco Bay in the future.

EPA and several other agencies are currently participating in a comprehensive evaluation of management of dredged materials from San Francisco Bay, known as the “Long-Term Management Strategy” (“LTMS”). As

part of this LTMS effort, all disposal options, including beneficial reuse, upland, in-bay, and ocean disposal alternatives, are being further evaluated in a separate LTMS Policy EIS/EIR. The LTMS agencies intend to set forth policies for the ongoing development of such alternatives, and for comprehensive management of all such sites, in the Policy EIS/EIR.

EPA's site designation decision reflects this LTMS effort. Today, EPA is setting an interim site capacity for the SF-DODS of six million cubic yards of dredged material per year, which shall be in effect only until December 31, 1996. As the LTMS is completed, EPA will reexamine the appropriate site capacity for the SF-DODS and will establish in a separate rulemaking a capacity for the SF-DODS that reflects the LTMS policy. In addition, in all cases (now, and in the future under a comprehensive management plan for the region), the disposition of dredged materials from individual projects will be evaluated by EPA Region IX and the Corps' San Francisco District on a case-by-case basis and EPA, taking into account all the alternatives available at the time of permitting. Beneficial reuse alternatives will be preferred over ocean disposal whenever they are practicable and would cause less adverse impacts than ocean disposal.

The following ocean disposal alternatives were evaluated in detail in the Final EIS:

1. No Action

Failure to designate a permanent ocean disposal site pursuant to Section 102 of the MPRSA would have significant negative consequences. First, the continued foreseeable need to have an appropriate site for disposal of suitable sediments from various San Francisco Bay dredging projects would place pressure on the Corps and EPA to approve on a project-by-project basis the ***41246** use of existing in-Bay or temporary ocean dumping locations pursuant to either Clean Water Act Section 404 or MPRSA Section 103. Continued, exclusive reliance on existing in-bay disposal sites would not address concerns about environmental impacts of in-bay disposal, and would not address concerns about economic impacts due to delays and uncertainty associated with limited capacity at these existing sites. Second, the Water Resources Act of 1992 prohibits the continued use of ocean dump sites which have not been designated by EPA as Section 102 dump sites by the end of 1997. If EPA fails to designate the SF-DODS by that date, then ocean disposal of dredged materials taken from San Francisco Bay projects will be effectively precluded.

2. Deepwater Alternative Site 3

This site is located approximately 47 nautical miles (87 kilometers) from the Golden Gate in an area where depths range approximately 4,590 to 6,230 feet (1,400 to 1,900 meters). EPA has eliminated this site from further consideration, primarily because of its proximity to Pioneer Canyon and associated hardbottom areas. This site would have greater impacts to benthic organisms than the preferred alternative (Site 5), and would affect relatively scarce hardbottom habitats.

3. Deepwater Alternative Site 4

This site is located approximately 50 nautical miles (93 kilometers) from the Golden Gate in an area where depths range approximately from 6,230 to 6,900 feet (1,900 to 2,100 meters). EPA has eliminated this site from further consideration, primarily because of its proximity to Half Moon Bay and its high usage as commercial fishing grounds as compared to Alternative Site 5. This site would also have greater impacts to benthic organisms than the preferred alternative (Site 5).

4. Deepwater Alternative Site 5 (Preferred Alternative)

The Final EIS identified this site as the preferred alternative based on comparison to the alternative sites listed above, and to the specific selection criteria listed in 40 CFR 228.6(a). Alternative Site 5 is located furthest from the coast (approximately 49 nautical miles west of the Golden Gate) and in the deepest depth range (approximately 8,200 to 9,840 feet, or 2,500 to 3,000 meters). The 6.5 square nautical mile site represents approximately one percent of the total area encompassing the slope region studied by EPA Region IX. Bathymetric and sediment surveys indicate Alternative Site 5 is located in a depositional area which, because of existing topographic containment features, is likely to retain dredged material which reaches the sea floor. No significant impacts to other resources or amenity areas, such as marine sanctuaries, are expected to result from designation of Alternative Site 5. Existing and potential fisheries resources within Alternative Site 5 are minimal and the site is removed from more important fishing grounds located closer to the other alternative sites. Abundances and biomass of demersal fishes and megafaunal invertebrates, as well as abundances and diversity of infaunal invertebrates, at Alternative Site 5 are lower than those at the other alternative sites. Conservative modeling predicted only localized detectable perturbations following disposal of dredged materials within the disposal site. Therefore, potential impacts to surface and mid-water dwelling organisms, such as seabirds, mammals, and midwater fishes, are expected to be insignificant. Finally, disposal of low-level radioactive wastes and chemical and conventional munitions occurred historically in the vicinity of Alternative Site 5. Disposal within the site has also occurred as part of a Navy MPRSA Section 103 permit approved for up to 1.2 million cubic yards of suitable dredged material. Therefore, designation of this site also minimizes cumulative effects compared to the alternative ocean disposal sites.

EPA has determined that Alternative Site 5, identified in the Final EIS as the preferred site, will be the site designated as SF-DODS in this Final Rule. This site represents the environmentally preferred alternative for designation of a deep ocean disposal site for the San Francisco Bay area. Its selection, along with the specific restrictions on site use adopted and described in this Final Rule, avoids and minimizes environmental harm from ocean disposal of suitable dredged material to the maximum extent practicable. A Record of Decision (ROD) will not be issued as a separate document; instead this Final Rule serves as the ROD for designation of the SF-DODS.

C. Regulatory Requirements

Consistency With the Coastal Zone Management Act

EPA prepared a Coastal Consistency Determination (CCD) document based on the evaluations presented in the Final EIS. The CCD evaluated whether the proposed action—designation of Alternative Site 5 as described in the Final EIS as an ocean disposal site for up to 50 years, and with an annual capacity of 6 million cubic yards of dredged material meeting ocean disposal criteria—would be consistent with the provisions of the Coastal Zone Management Act. The CCD was formally presented to the California Coastal Commission at their public hearing on April 12, 1994. The Commission staff report recommended that the Commission concur with EPA's CCD, and the Commission voted unanimously to concur on the CCD without revision.

Endangered Species Act Consultation

During the EIS development process, EPA consulted with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) pursuant to provisions of the Endangered Species Act, regarding the potential for designation and use of any of the alternative ocean disposal sites under study to jeopardize the continued existence of any federally listed threatened or endangered species. This consultation process is fully doc-

umented in the Final EIS. NMFS and FWS concluded that none of the three alternative disposal sites, including Alternative Site 5, if designated and used for disposal of dredged material meeting ocean disposal criteria as described in the EIS, would jeopardize the continued existence of any federally listed threatened or endangered species.

Compliance With Ocean Dumping Criteria

Five general criteria are used in the selection and approval of ocean disposal sites for continuing use (40 CFR 228.5). First, sites must be selected to minimize interference with other activities, particularly avoiding fishery areas or major navigation areas. Second, sites must be situated such that temporary (during initial mixing) water quality perturbations caused by disposal operations would be reduced to normal ambient levels before reaching any beach, shoreline, sanctuary, or geographically limited fishery area. Third, if site designation studies show that any interim disposal site does not meet the site selection criteria, use of such site shall be terminated as soon as an alternate site can be designated. Fourth, disposal site size must be limited in order to localize for identification and control any immediate adverse impacts, and to facilitate effective monitoring for long-range effects. Fifth, EPA must, wherever feasible, designate ocean dumping sites beyond the edge of the continental shelf and where historical disposal has occurred. As described in the Final EIS, ***41247** SF-DODS was specifically selected to comply with these general criteria.

The SF-DODS meets these 5 general criteria. First, as discussed further below in discussing the 11 specific site selection criteria, the SF-DODS is not a significant fishery area, is not a major navigation area and otherwise has no geographically limited resource values that are not abundant in other parts of this coastal region. Second, as also discussed further below, dredged material deposited at the site is not expected to reach any significant area such as a marine sanctuary, beach, or other important natural resource area. Third, the SF-DODS is not an interim disposal site. Fourth, the site has an appropriately limited size and has been selected to allow for effective monitoring. Fifth, the site is beyond the continental shelf and is located in an area historically used for dumping.

In addition to the 5 general criteria, 11 specific site selection criteria are listed in 40 CFR 228.6(a) of the EPA Ocean Dumping Regulations for evaluation of all candidate disposal sites. The 5 general criteria and the 11 specific factors overlap to a great degree. The SF-DODS site, as discussed below, is also acceptable under each of the 11 specific criteria.

1. Geographical Position, Depth of Water, Bottom Topography and Distance From Coast [40 CFR 228.6(a)(1).

The center of the SF-DODS is located approximately 49 nautical miles (91 kilometers) west of the Golden Gate and occupies an area of 6.5 square nautical miles (22 square kilometers). Water depths within the area range between 8,200 to 9,840 feet (2,500 to 3,000 meters). Bathymetric and sediment surveys indicate that the site is located in a depositional area with natural topographic containment features. The site's depositional nature and natural topography will minimize the extent of potential impacts to the benthos, and will facilitate long-term containment of deposited material as well as site monitoring activities.

2. Location in Relation to Breeding, Spawning, Nursery, Feeding, or Passage Areas of Living Resources in Adult or Juvenile Phases [40 CFR 228.6(a)(2)]

The SF-DODS site provides feeding and breeding areas for common resident benthic species. Floating larvae and eggs of various species are expected to be found at and near the water surface at the site as well as the alternative sites evaluated. However, designation of the site will not affect any geographically limited (i.e.,

unique) habitats, breeding sites, or critical areas that are essential to rare or endangered species. Both in comparison to on-shelf areas and to the other alternative sites evaluated, the site has the least potential for adverse impact to commercially important species.

3. Location in Relation to Beaches and Other Amenity Areas [40 CFR 228.6(a)(3)]

The SF-DODS site is approximately 49 nautical miles (91 kilometers) west of the Golden Gate, 30 nautical miles (56 kilometers) from Pioneer Canyon, 6 nautical miles (11 kilometers) from the Gulf of the Farallones National Marine Sanctuary (GFNMS) boundary, and 24 nautical miles (45 kilometers) from the Farallon Islands. Ocean currents flow primarily to the northwest in the upper 2,600 to 3,000 feet (800 to 900 meters) of the water column, although periodic reversals in flow occur. Currents below 3,000 feet (900 meters) are generally weaker than near-surface currents. Therefore, any residual suspended solids from the SF-DODS site will move primarily in the north-northwest direction. Water column modeling results using a conservative approach and assuming disposal of 6 million cubic yards of dredged sediments per year indicate that suspended solid levels would decrease to background levels by the time the plume reaches the nearest amenity area (GFNMS boundary). Deposition modeling using a conservative approach and assuming disposal of 6 million cubic yards of dredged sediments per year indicates that the bulk of the disposed material would be deposited within the disposal site. For the above reasons, EPA has determined that aesthetic impacts of plumes, transport of dredged material to any shoreline, and alteration of any habitat of special biological significance or marine sanctuary will not occur if this site is designated.

4. Types and Quantities of Wastes Proposed to be Disposed of, and Proposed Methods of Release, Including Methods of Packing the Waste, if any [40 CFR 228.6(a)(4)]

EPA is setting an interim site capacity for the SF-DODS of six million cubic yards of dredged material per calendar year, which shall be in effect only until December 31, 1996. As the LTMS comprehensive dredged material management planning effort is completed, EPA will reexamine the appropriate site capacity for the SF-DODS and will establish in a separate rulemaking a final capacity. Typical composition of dredged material disposed at the site is expected to range between two types: predominantly “clay-silt” versus “mostly sand”. These material types are based on data from historical projects from the San Francisco Bay region. The expected disposal method would involve split-hull barges, with capacities ranging between 1,000 to 6,000 cubic yards, which would be towed by ocean-going tugboats. Dredged material would not be packaged. All dredged material proposed for disposal at the site must be suitable for ocean disposal. This determination will be made by EPA Region IX and the Corps' San Francisco District based upon the results of physical, chemical and biological tests before a MPRSA Section 103 permit can be issued. Dumping of prohibited materials or other industrial or municipal wastes will not be permitted at the site [40 CFR 227.5 and 227.6(a)].

Existing information and modeling analysis suggests that it is appropriate to dispose, via split hull barges, of the type of dredged material that will be removed from San Francisco Bay at the SF-DODS. The dredged material can be predicted mostly to settle rapidly to the ocean bottom within the dump site boundaries and not to create plumes which will reach significant areas such as marine sanctuaries, recreational areas, or geographically limited habitats at greater than background concentrations. Disposing dredged material at the site which meets regulatory criteria for ocean dumping will create some limited alteration or destruction of benthic habitat within site boundaries, but should not create substantial adverse impacts extending beyond site boundaries. For these reasons, no significant adverse impacts are expected to be associated with the types and quantities of dredged material that may be disposed at the site.

5. Feasibility of Surveillance and Monitoring [40 CFR 228.6(a)(5)]

EPA Region IX and the Corps' San Francisco District share the responsibilities of managing and monitoring the disposal site, and, with the on-site assistance of the U.S. Coast Guard (USCG), to enforce permit conditions within the limits of their jurisdiction. Although SF-DODS would be the deepest and farthest off shore of any ocean disposal site so far designated in the U.S., standardized equipment and techniques would be used for surveillance and monitoring activities. In addition, recent Navy mid-project monitoring activities confirmed the feasibility of surveillance and monitoring at the SF-DODS. EPA has therefore determined that the Site Management and Monitoring provisions ***41248** of the Final Rule are fully feasible to implement.

6. Dispersal, Horizontal Transport and Vertical Mixing Characteristics of the Area, Including Prevailing Current Direction and Velocity, if any [40 CFR 228.6(a)(6)]

Current meter studies indicate that any residual suspended solids from disposal operations at SF-DODS will move primarily north-northwest, away from the continental shelf and the GFNMS. Water column modeling results, as indicated in the Final EIS, using a conservative approach (e.g., modeling parameters adjusted for worst case conditions) and assuming disposal of 6 million cubic yards of dredged sediments per year, indicate that suspended solid would decrease to background levels by the time the plume reaches the nearest amenity area (GFNMS boundary). Deposition modeling using a conservative approach and assuming disposal of 6 million cubic yards of dredged sediments per year indicate that the bulk of the disposed material would deposit within the disposal site. For these reasons, EPA has determined that the dispersal, transport and mixing characteristics of the site, and its current velocities and directions, are appropriate for its designation as a dredged material disposal site.

7. Existence and Effects of Current and Previous Discharges and Dumping in the Area (Including Cumulative Effects) [40 CFR 228.6(a)(7)]

Under an MPRSA Section 103 permit, the Navy is discharging up to 1.2 million cubic yards of dredged material at their Navy disposal site which is contained within the EPA-preferred Alternative Site 5. No other documented disposal of dredged material has occurred within the site. However, disposal of radioactive waste containers was conducted in the vicinity of Alternative Site 5 from 1951-1954. Likewise, chemical and conventional munitions were disposed in the general area from approximately 1958 to the late 1960's at the Chemical Munitions Disposal Area. Therefore, EPA has determined that potential cumulative effects of designating a dredged material disposal site are less at SF-DODS than at the alternative sites evaluated, which did not have these historic impacts.

In addition, no other discharges occur in the immediate vicinity of SF-DODS. The effects of municipal discharges from the San Francisco Southwest Ocean Outfall (5.4 nautical miles or 10.2 kilometers from shore), the City of Pacifica Outfall (0.4 nautical miles or 0.8 kilometers from shore), and Northern San Mateo County Outfall (0.4 nautical miles or 0.8 kilometers from shore) are limited to local areas near the outfalls and do not extend to the vicinity of the dredged material disposal site. Discharge of dredged sand at the Channel Bar ODMDS (3.0 nautical miles or 5.6 kilometers from shore) is also limited to that local area and is not expected to result in impacts in the vicinity of the SF-DODS. Therefore, EPA has determined that cumulative effects of dredged material disposal are minimized by designation of SF-DODS.

8. Interference With Shipping, Fishing, Recreation, Mineral Extraction, Desalination, Fish and Shellfish Culture, Areas of Special Scientific Importance and Other Legitimate Uses of the Ocean [40 CFR 288.6(a)(8)]

In evaluating whether dumping activity at the site could interfere with shipping, fishing, recreation, mineral extraction, desalination, areas of scientific importance and other legitimate uses of the ocean, EPA considered both the direct effects from depositing millions of cubic yards of dredged material on the ocean bottom within the SF-DODS boundaries and the indirect effects associated with increased vessel traffic that will result from transportation of dredged material to the dump site. Existing information indicates that the site is not a significant fisheries area, is not used for water contact recreation and is not otherwise a significant recreational area, contains no harvestable minerals, is not a potential staging ground or intake area for desalination activity, is not scientifically important in itself, and otherwise has no geographically limited resource values that are not abundant in other parts of this coastal region. Accordingly, depositing dredged material at the site will not interfere with these activities.

Increased vessel traffic involved in transportation of dredged material to the SF-DODS should also cause no substantial interference with any of the activities discussed above. Even with around-the-clock disposal operations (assuming 3 trips in a 24-hour period), disposal operations would augment existing vessel traffic in the region by less than 2 percent. In addition, the potential interference with recreational and scientific boat traffic and marine resources (e.g., birds and mammals) near the Farallon Islands should be prevented by requirements that barges remain at least 3 nautical miles from the Islands.

9. The Existing Water Quality and Ecology of the Site as Determined by Available Data or by Trend Assessment or Baseline Surveys [40 CFR 228.6(a)(9)]

Existing information and regional studies described in the Final EIS provide the following determinations: Water quality at the SF-DODS is indistinguishable from the water quality of nearby areas. Sediments contain background levels or low concentrations of trace metal and organic contaminants. The demersal fish community within Alternative Site 5 has lower numbers of species and lower abundances than the other alternative sites. Alternative Site 5 contains moderate numbers of megafaunal invertebrate species (sea cucumbers, brittlestars, sea pens) but lower overall abundances compared to the other alternative sites. Infaunal invertebrates (polychaetes, amphipods, isopods, tanaids) within Alternative Site 5 also show lower diversity and abundance compared to Alternative Sites 3 and 4. Although there have been higher numbers of marine bird and mammal sightings, and mid-water organisms including juvenile rockfishes are more abundant seasonally relative to the other alternative sites evaluated, Alternative Site 5 is not considered to have geographically limited resource values that are not abundant in other alternative sites or other parts of this coastal region. Based on these Final EIS conclusions EPA has determined that, compared to the alternative sites evaluated, this is the environmentally preferred location for ocean disposal site designation.

10. Potentiality for the Development or Recruitment of Nuisance Species in the Disposal Site [40 CFR 228.6(a)(10)]

Local opportunistic benthic species characteristic of disturbed conditions are expected to be present and abundant at any ODMDS in response to physical deposition of sediments. Opportunistic polychaetes, such as Capitella, may colonize the disposal site. However, these worms can become food items for local bottom-feeding fish and are not directly harmful to other species. No recruitment of species capable of harming human health or the marine ecosystem is expected to occur at the site. In addition, recruitment of nuisance species from within the dredged material disposed at the site is unlikely, due to significant differences in water depth and environment at the disposal site as compared to the relatively shallow dredging sites in the San Francisco Bay region.

***41249** 11. Existence at or in Close Proximity to the Site of any Significant Natural or Cultural Feature of Historical Importance [40 CFR 228.6(a)(11)]

The California State Historic Preservation Officer has determined there are no known historic shipwrecks nor any known aboriginal artifacts at the SF-DODS or in the vicinity.

D. Action

EPA Region IX has concluded that the SF-DODS may appropriately be designated for use over a period of 50 years, with an interim capacity of 6 million cubic yards of dredged material per calendar year until December 31, 1996. After this date, site capacity shall be reevaluated based on the results of comprehensive regional dredged material management planning underway at the time of this rulemaking, or independently by EPA if a comprehensive management plan is not yet completed. No disposal shall occur after December 31, 1996 unless and until EPA establishes a new site capacity.

Designation of the SF-DODS complies with the general and specific criteria used for site evaluation. The designation of the SF-DODS as an EPA-approved Ocean Dumping Site is being published as a final rulemaking. Management of this site will be the responsibility of the Regional Administrator of EPA Region IX in cooperation with the Corps' South Pacific Division Engineer and the San Francisco District Engineer, based on requirements defined in the Final Rule. Operational details for carrying out the Rule's required management and monitoring activities will be contained in a SMMP Implementation Manual prepared by EPA following the opportunity for public review. Subsequent revisions of the SMMP Implementation Manual will also be proposed through separate Public Notices.

It is emphasized that ocean dumping site designation does not constitute or imply EPA Region IX's or the Corps' San Francisco District's approval of actual ocean disposal of dredged materials. Before ocean dumping of dredged material at the site may begin, EPA Region IX and the Corps' San Francisco District must evaluate permit applications according to EPA's Ocean Dumping Criteria. EPA Region IX or the Corps' San Francisco District will deny permits if either agency determines that the Ocean Dumping Criteria of MPRSA have not been met. The requirement for compliance with the Ocean Dumping Criteria of the MPRSA may not be superseded by the provisions of any future comprehensive regional management plan for dredged material.

E. Regulatory Assessments

Under the Regulatory Flexibility Act, EPA is required to perform a Regulatory Flexibility Analysis for all Rules which may have a significant impact on a substantial number of small entities. EPA has determined that this action will not have a significant impact on small entities since the site designation will only have the effect of providing a disposal option for dredged material. Consequently, this Rule does not necessitate preparation of a Regulatory Flexibility Analysis.

This action will not result in an annual effect on the economy of $100 million or more or cause any of the other effects which would result in its being classified by the Executive Order as a major Rule. Consequently, this Rule does not necessitate preparation of a Regulatory Impact Analysis.

F. Responses to Comments on the Site Designation Proposed Rule and the Proposed SMMP Public Notice

EPA received 37 letters in support of the Proposed Rule and 14 letters critical of the Proposed Rule. Many of

these 37 letters contained specific comments regarding the proposed SMMP. EPA also received, after the close of the comment period for the site designation Final EIS, a mass mailing of 105 similar letters containing some comments relating to site designation. Finally, EPA received 11 additional comment letters in response to the separate proposed SMMP Public Notice. All these comments have been carefully considered, and appropriate changes have been made in the Final Rule based on them. The comments have been grouped into similar categories for the purposes of preparing the following responses.

1. Site Designation Process

Commentors participating in the mass-mailing were concerned that EPA was “fast-tracking” the designation process for the ocean disposal site off San Francisco.

Response

EPA has expended considerable effort to ensure adequate opportunities for public input in the site designation process. This site designation process is now in its fifth year, as public scoping meetings began in 1989. The Ocean Studies Plan (OSP), which was the blueprint for the extensive biological and oceanographic studies that characterized the study region, was developed with the consensus of the Long Term Management Strategy (LTMS) Ocean Studies Work Group (OSWG). The LTMS is comprised of Federal and State agencies, regional scientific experts, public interest and environmental groups. Based on the studies performed, EPA evaluated alternative sites and selected the preferred alternative site with the consensus of the OSWG. The Draft EIS was then noticed in the Federal Register and issued for public comment in December, 1992. Following revisions to the EIS based on comments received, the Final EIS was prepared and noticed in the Federal Register in September, 1993. A Proposed Rule to designate the preferred alternative site as described in the Final EIS was noticed in the Federal Register and issued for public comment on February 17, 1994. In addition, the proposed Site Management and Monitoring Plan (SMMP) for this ocean disposal site was issued for public comment under a separate EPA Public Notice on April 20, 1994. The comment period for this Public Notice ended on June 6, 1994. Therefore, EPA believes that ample opportunities have been provided for interested parties to comment throughout the site designation process.

2. Need for Ocean Dumping

Several commentors stated that the proposal to designate the site for a 50-year period and for up to 300 million cubic yards of dredged material was not based on an evaluation of the actual need for ocean disposal based on comprehensive regional planning. Other commentors stated that it is unlikely that as much as 6 million cubic yards per year of sediments meeting ocean dumping criteria could be dredged from the contaminated San Francisco Bay.

Response

The Final Rule has been significantly revised regarding site capacity. An interim site capacity of 6 million cubic yards per calendar year is being established from the date of site designation until December 31, 1996, only. Site capacity following December 31, 1996 will be determined based on either a comprehensive long-term management strategy for management of dredged materials from San Francisco Bay (a Long Term Management Strategy draft EIS is currently under development, and is expected to be issued for public review in the spring of 1996) or, should a comprehensive Long Term Management Strategy not be available by that date, on a separate alternatives-based EPA evaluation of the need for ocean disposal. This new site ***41250** capacity will be estab-

lished via a separate formal rulemaking process.

The volume of sediment assumed in the site designation Final EIS and Proposed Rule to be dredged from San Francisco Bay over the next 50 years (400 million cubic yards total) represents a planning estimate provided by the Corps. The actual volumes dredged over the next 50 years cannot be accurately predicted because the overall need for dredging will depend on many factors, including: Commercial shipping trends (i.e., continued use of Oakland as a major cargo port); decisions to initiate port expansions (i.e., for larger deep-draft vessels); changes in the use of closing military facilities; and resources available to undertake these projects (i.e., availability of funds or Congressional authorizations for specific projects). However, for ocean site evaluation purposes, EPA assumed that 6 million cubic yards per year (which equates to 80% of the assumed dredging average of 8 million cubic yards per year) would meet EPA Ocean Dumping criteria, and used this volume for modeling the fate of dredged material disposed at the alternative ocean disposal sites. The results indicated that disposal of this volume would not result in significant impacts at the proposed disposal site; therefore, this site is being designated with an interim capacity of up to 6 million cubic yards per year. Additional modelling would be necessary if a greater annual disposal volume were to be proposed.

No matter the nominal site capacity at any time, it should be noted that site designation is not a blanket approval for disposal of any dredged material at the site. The actual need for ocean dumping is determined on a project-by-project basis at the time of permitting: Each and every project must be individually reviewed to determine both its need for ocean disposal and the suitability of its proposed dredged material for disposal.

3. Alternatives Analysis

Several commentors stated that EPA has failed to consider a range of alternatives to ocean dumping of dredged material. Other commentors recommended that the ocean site designation be delayed until other disposal alternatives can be made available (e.g., via the LTMS process).

Response

EPA has determined that there is an overall need to designate an ocean disposal site for the San Francisco Bay region at the present time, based on the present lack of available upland and beneficial reuse sites, policies of the state agencies to generally further restrict disposal at in-Bay sites to maintenance dredging projects, impending plans for large new-work dredging projects, and limited existing in-Bay disposal site capacity. However, as discussed above, the ocean site is now being designated with an interim capacity only, which will be reevaluated based on the results of comprehensive management planning efforts now underway.

4. Consistency Wth International Agreements

Several commentors wrote that the ocean disposal site designation ignores the precautionary approach which the U.S. has adopted in the context of several international agreements, because the site designation is unconditional except for a very large annual dumping limit for the 50-year period. These commentors recommended that there should be precautionary conditions for site use, including: (1) A waste audit to evaluate all possible options to reduce the amount of dredged materials to be dumped at the ocean site and reduce the contamination of those sediments; (2) implementation of pollution prevention measures for San Francisco Bay and its drainage basin to guarantee that less contaminated sediments would be destined for the ocean site in the future; and (3) specific limitations on the contamination levels in sediments to be dumped at the site, with progressive reduction in those levels over 50 years so that the site will eventually only receive uncontaminated sediments.

Response

The Final Rule has been revised to establish an interim site capacity only. In addition, even this interim annual dumping limit is only one of many conditions for site use. As noted above, site designation is not in itself a permit for ocean disposal of dredged material. Each project must be reviewed on a case-by-case basis to determine suitability of the proposed dredged material for ocean disposal and to determine the need for ocean dumping (including the availability of alternatives that reduce the amount of dredging). Alternatives such as beneficial use will be encouraged wherever practicable. This process of evaluating disposal options already occurs and will continue during permit reviews. Nevertheless, in addition to project-by-project alternatives analyses, overall dredged material management alternatives are being evaluated via the State/Federal LTMS process on a programmatic basis. The project-by- project need for ocean disposal will be reduced as alternatives to ocean disposal (including beneficial re-use sites) become available.

Pollution prevention is an important aspect of sediment management, as it is for most environmental issues. A variety of federal, state, and local pollution prevention efforts are underway that should result in long-term reductions in the degree to which sediments become contaminated. However, sediments also act as “sinks” for contaminants discharged in the past, and dredging projects by their very nature can expose this historic contamination. Therefore pollution prevention efforts in the foreseeable future are not expected to eliminate the dredging of contaminated sediments. Finally, there is no need to systematically tighten ocean suitability criteria because existing criteria do not allow toxic or highly contaminated sediments to be disposed at the site (suitability criteria are not tied to existing levels of contamination in area sediments).

5. Compliance Wth Ocean Site Selection Criteria

Two commentors disagreed with EPA's determination that the regulatory requirements of the MPRSA were fully satisfied by the proposed site designation, particularly regarding the assessment of impacts to existing and potential fisheries, fish habitat and marine sanctuaries.

Response

EPA's determination of insignificant impacts to fisheries used conservative modelling of the worst case (highly dispersive) disposal scenarios. The evaluation indicated only localized impacts within the disposal site boundaries, based on: the highly mobile nature of the fish species present; the fact that the disposal site has relatively low abundances of commercially important fish species; and the fact that the site does not comprise unique fish habitat within the slope and shelf region.

With respect to impacts to marine sanctuaries, the Final EIS documented that the expected increase in vessel traffic and resultant increased chance for accidents (i.e., dredged material spills) during transportation through the sanctuaries will not be significant. Nevertheless, specific requirements to minimize any such risks are incorporated in the Final Rule.

6. Requirement to Implement Site Management and Monitoring

Several commentors were concerned that the Proposed Rule did not clearly ***41251** state that implementation of the site management and monitoring provisions is a strict condition for site use.

Response

EPA intends that full implementation of the SMMP is a strict requirement of site use, and revisions have been be incorporated into the Final Rule to emphasize this and remove any ambiguity.

7. Unique Nature of the Disposal Site

Several commentors stated that they were not satisfied that the SMMP as summarized in the Proposed Rule accounts for risks associated with a site which is the deepest and farthest from shore of any so far designated in the U.S., or that there is sufficient information on how dredged material will behave following disposal at such a deep site.

Response

EPA recognizes that the proposed SF-DODS, as well as the potential alternative ocean sites evaluated in the Final EIS, is the deepest and the farthest from shore of any ocean disposal site so far designated in the U.S. However, EPA has expended considerable effort to adequately characterize this previously not well-studied region of the California coast. Studies were conducted in accordance with an Ocean Studies Plan which was developed with input from Federal and State agencies as well as environmental and public interest groups. Because of the deep depths and distance from shore, EPA performed conservative (worst case) modeling to assess the fate of dredged material disposal at the alternative sites. The modeling results indicate that the bulk (75 to 90 percent) of the dredged material would be deposited on the seafloor within the disposal site boundaries, and that residual suspended material in the water column would be dissipated to background concentration levels within the disposal site boundaries, as well. These modeling predictions were confirmed by recent monitoring of actual dredged material disposal in the vicinity of the SF-DODS by the U.S. Navy, performed as a requirement of their MPRSA Section 103 project-specific site designation. Preliminary results of their field studies confirmed that plumes in the water column could be tracked until they dissipated to background levels, and that the plumes dissipated to background levels within the disposal site boundaries. Furthermore, their findings confirmed that the sediment deposit footprint on the seafloor could be mapped, and that the sediment deposited within the disposal site boundary as predicted by the modeling performed for EPA's site designation EIS. Finally, the SMMP was developed to address the uncertainties and risks associated with use of this disposal site.

8. Impacts to Nearby Marine Sanctuaries

One commentor stated that past disposal of chemical munitions, explosives, radioactive materials, sulfuric acid, and oil refinery waste at the site or nearby locations does not justify designating a disposal site near federally protected marine sanctuaries such as the Gulf of the Farallones National Marine Sanctuary and the Monterey Bay National Marine Sanctuary.

Response

National marine sanctuaries are continuous along the coastline of the study region. The ocean disposal site is located off the continental shelf, at the extreme point of the Zone of Siting Feasibility established by the U.S. Army Corps of Engineers, and several miles beyond the outer boundary of the nearest sanctuary. It is therefore as far removed from sanctuary boundaries as practicable. Furthermore, extensive oceanographic and modelling studies indicate that suspended sediment plumes should dissipate to background levels within the disposal site boundaries, and that under prevailing conditions (currents predominately to the north-northwest) the probability of any detectable sediment plumes drifting into the marine sanctuaries is extremely remote. The seafloor in the vicinity of the site has already been somewhat degraded by historic disposal of military munitions and other

wastes so that, compared to alternative sites evaluated, cumulative effects to the deep benthos are minimized at this site. Indeed, there may even be a long-term beneficial effect within the disposal site as a result of cleaner (ocean suitable) dredged material being deposited on a previously degraded seafloor. Finally, designation of this site is consistent with guidance in the Ocean Dumping Regulations [40 CFR §228.5(e)] to locate disposal sites beyond the continental shelf and in areas of historical dumping where possible.

9. Long Term Impacts

Several commentors noted that the Final EIS stated that significant long-term impacts at the proposed dump site are likely to occur from ocean disposal of dredged material.

Response

The Final EIS classified physical impacts to benthos within the disposal site boundaries as significant (e.g., potential changes in sediment texture, and some smothering of infauna are unavoidable). Other significant (e.g., toxicological) impacts are not expected because of requirements for extensive pre-disposal physical, chemical, and biological testing of proposed dredged material. In addition, controls will be implemented through permit conditions and the provisions of the SMMP to prevent any significant impacts occurring outside the disposal site boundaries.

10. Exclusion From Testing

One commentor expressed concern that certain materials, based upon their physical characteristics and their location in relation to sources of contamination, would be dumped into the ocean without chemical and biological testing. They also expressed concern that the person who determines this exclusion not be an employee of the dredging or dumping company.

Response

The ocean dumping regulations [40 CFR 227.13(b)] set forth conditions under which dredged material may be determined to be suitable for ocean disposal without chemical and biological testing (“exclusion criteria”). The determination of exclusion from testing is made by EPA and the Army Corps of Engineers in accordance with these criteria, and not by the dredging company or the permit applicant.

11. Need for Mitigation for Disposal Site Use

One commentor estimated, based on a draft Habitat Evaluation Procedure (HEP) analysis, that at least 60 acres of habitat would be needed to replace habitat value losses at the 6.5 square nautical mile ocean disposal site, and stated that EPA should consider including compensatory mitigation as a component of the site designation and monitoring process.

Response

The commentor's draft analysis is based in part on a misunderstanding of the site designation EIS, and incorrectly assumes that significant impacts will occur well beyond the boundaries of the disposal site. EPA does not share the commentor's conclusion that compensatory mitigation is needed for use of the ocean disposal site in part because: (1) The site location has been selected specifically to minimize any off-site impacts due to disposal of ***41252** dredged material, as documented in the Final EIS; (2) only suitable non-toxic sediments may be dis-

posed at the site, in accordance with EPA's Ocean Dumping Criteria; (3) unlike upland or wetland “fills,” disposed sediments will not alter the site's basic habitat type (e.g., disposal of suitable dredged material at the site is not the same as permanently changing a wetland into an upland, or a seasonal wetland into a tidal wetland); and (4) ongoing site monitoring, and management actions as necessary, will ensure that no significant off-site adverse impacts will occur or persist during the 50-year period of site use.

12. Sea Surface Microlayer

Several commentors stated that EPA has ignored concerns raised about contamination of the sea surface microlayer as a result of dredged material disposal at the site, and has missed opportunities to resolve this issue through field studies.

Response

EPA has fully considered comments regarding potential contamination of the sea surface microlayer. In addition, EPA consulted with the LTMS technical review panel (see listing in Table 5.2-1 of the Final EIS) on this issue. Based on the available information regarding the sea surface microlayer, EPA has determined that the potential for significant contamination of or impacts to the sea surface microlayer as a result of disposal site use is not significant. The specific characteristics of this deep ocean disposal site (including its location in a turbulent open ocean environment approximately 50 miles offshore), and the characteristics of the dredged material that is expected to be disposed there (suitability for ocean disposal established by extensive physical, chemical, and biological testing), support this conclusion. The LTMS technical review panel view was consistent with EPA's determination. Consequently, monitoring of the sea surface microlayer is not included in the SMMP at this time. However, EPA does not discourage independent sampling in the vicinity or submission of any data collected in or near the site.

13. Discussion of “Alternative Site 2”

One commentor recommended that EPA emphasize that significant commercial fish abundances and fish habitats exist in this area which would have precluded designation of a site in this area, even if the Monterey Bay National Marine Sanctuary did not exist.

Response

The site designation Final EIS describes the greater importance of the continental shelf, including Study Area 2, for commercially important fish species relative to SF-DODS and the other off-shelf alternative sites. The Final EIS also notes that since Study Area 2 is within the boundaries of the Monterey Bay National Marine Sanctuary, it would not comply with EPA's site designation criteria and therefore could not be designated.

14. Inclusion of SMMP in the Site Designation Rule

Several commentors recommended that the entire SMMP be included as part of the regulation designating the site.

Response

The Final Rule has been revised to include specific provisions governing site monitoring and site management. These provisions establish the legal basis for requiring site monitoring and site management and establish the

basic criteria for adequate site monitoring and management measures. These provisions further establish the basic criteria for using site monitoring data to make adjustments to site management or site use. The provisions of the Final Rule are sufficient, in EPA's view, to create environmentally appropriate and legally enforceable site monitoring and site management regimes.

On April 20, 1994, EPA published a Public Notice in the Federal Register indicating the availability of a proposed SF-DODS Site Monitoring and Management Plan (“SMMP”) and soliciting public comment on the SMMP. As noted above, EPA has now incorporated the major aspects of the proposed SMMP directly into the Rule. In addition, EPA will publish the “SMMP Implementation Manual” based upon the SMMP. The SMMP Implementation Manual will provide operational details concerning site monitoring and management measures that are not necessary or appropriate for inclusion in EPA's Final Rule designating the SF-DODS (also see response to comment number 25, below). The SMMP Implementation Manual will serve to document EPA's interpretation of the specific measures that are appropriate for implementing the provisions required in the Final Rule. EPA intends to notify the public and solicit public comments if any future changes are made to the SMMP Implementation Manual.

15. Feasibility and Validity of the Site Monitoring

Several commentors wrote that the details of the SMMP should be known before the Final Rule is issued in order to assess its scientific validity and the feasibility of surveillance and monitoring.

Response

In the Public Notice accompanying the Proposed Rule designating the SF-DODS, EPA discussed the broad outlines of site surveillance and monitoring envisioned by EPA. EPA subsequently supplemented this step by making available for public review and comment the proposed SMMP (see response above), and by incorporating many specific site management and monitoring requirements into the Final Rule itself as requested by several commentors. In EPA's view, the public has had ample opportunity to comment upon the scientific validity and the feasibility of EPA's proposed site surveillance and monitoring measures, and as a result these measures have been strengthened.

In EPA's view, the surveillance and monitoring measures that EPA will require for the SF-DODS are feasible and will provide the necessary scrutiny of site use for a full evaluation of the potential for adverse environmental impacts. The monitoring and surveillance measures for the SF-DODS are based upon successful measures taken at other designated disposal sites in Region 9 and other parts of the United States, including those required by EPA to be implemented by the U.S. Navy on a project involving the disposal of dredged sediments at a temporary dump site in the vicinity of the SF-DODS. The monitoring measures for the SF-DODS were further developed with the benefit of conservative (environmentally protective) modeling of post-disposal dispersion of dredged sediments at the site. This modeling, discussed in the Final EIS, has been demonstrated at other ocean disposal sites to have a high degree of accuracy in predicting dispersion of dumped sediments.

16. Management Action Trigger Levels and Significance Criteria

Several commentors stated that the trigger levels or criteria for determining when site use can be modified or terminated were inappropriate or too vague in the site designation Proposed Rule, and appear to limit EPA's ability to take action to restrict ocean dumping until significant adverse impacts have already occurred.

***41253** Response

EPA's authority to protect marine resources in the vicinity of a disposal site is described in the Ocean Dumping regulations at 40 CFR 220.4, 228.3, 228.7, 228.8, 228.9, 228.10, and 228.11. EPA can require that site use be modified or terminated based on several factors, including: (1) exceedance of Federal water quality criteria after disposal within the site or beyond the SF-DODS boundary; (2) significant movement of disposed material toward important biological resource areas or marine sanctuaries; (3) significant adverse changes in the structure of the benthic community outside the disposal site boundary; (4) significant adverse bioaccumulation in organisms collected from the disposal site or areas adjacent to the site boundary, compared to the reference site; and (5) significant adverse impacts upon commercial or recreational fisheries resources near the site. EPA can take action based on these criteria at any time; the site designation Rule in no way restricts EPA's authorities in this regard.

In addition to these existing authorities, the Final Rule now includes additional authority for determining management actions, such as site use modifications or even site use termination, as warranted by site monitoring results. For example, clarifications have been made to how sediment chemistry monitoring results would “trigger” management actions.

With respect to EPA taking actions before significant adverse impacts have occurred, monitoring data will be collected periodically (i.e., there will be annual sampling of monitoring stations) and any corrective management action taken following an annual review of monitoring data could therefore occur after some impacts have already occurred. However, because of extensive physical, chemical, and biological testing of the sediments proposed for ocean disposal, potential adverse impacts, if any, are expected to be physical in nature (i.e., sediment textural changes and smothering of some infauna) and confined within the boundaries of the disposal site. Furthermore, if warranted by onboard observations (i.e., direct observations of significant disturbance of marine birds and mammals near disposal operations) more immediate action can be taken.

17. Frequency of Monitoring

One commentor wrote that the proposed frequency of monitoring (after a period of one year or after 6 million cubic yards have been dumped), is not adequate and that monitoring should be more frequent to determine seasonal differences in the plume and sediment footprint.

Response

EPA's conservative modeling of the fate of dredged material disposed at the alternative sites utilized current meter data from a full year's deployment. Seasonal variability of oceanographic conditions is therefore generally known, and was considered in the site designation Final EIS and in development of the SMMP. The existing seasonal data, together with the monitoring requirements of the Final Rule, are adequate to address seasonal variation in oceanographic conditions.

18. Need for Periodic Review

Several commentors objected to the designation of the site for a full 50 years without any stringent requirement for periodic review.

Response

The Final Rule now more clearly states that there will be periodic review of monitoring data to determine if the site is performing as predicted (i.e., no significant adverse impacts outside of the disposal site boundaries), if site modifications are necessary, or if site use should be terminated. Necessary changes in site management can be made based on any of these reviews. Site monitoring will be a strict requirement of site use. If site monitoring is not implemented, disposal of dredged material will be prohibited at the ocean site.

19. Baseline Data

Several commentors wrote that the proposed SMMP, as summarized in the Proposed Rule, is flawed because of inadequate baseline data. These commentors urged a rigorous monitoring program during the first year of dumping in order to develop a more scientifically sound baseline for the site.

Response

Although the site designation studies were broad in geographic scope, the data collected in these studies serve as an appropriate baseline given the variability of biological parameters which is typical of this oceanic area. The region, overall, is significantly affected by many factors, including: interannual changes in regional climate; climate-induced variability in abundance and spatial distribution of biological populations, and human-induced impacts such as heavy vessel traffic and substantial commercial and recreational fishing. A focussed, localized one-year study of the site itself ignores the temporal and spatial complexity of the area, and would not produce a meaningful “baseline” for the site.

20. Preliminary Drafts of the Proposed SMMP

One commentor stated that the Proposed Rule does not reflect comments received by the agency on various preliminary drafts of the SMMP.

Response

As indicated above, on April 20, 1994, EPA issued a Public Notice soliciting comment on its proposed SMMP which set forth proposed monitoring and management measures for the SF-DODS. In addition, the Public Notice accompanying the Proposed Rule designating the SF-DODS broadly outlined EPA's proposed site monitoring and management measures for the SF-DODS. The provisions in the Final Rule setting forth site monitoring and management requirements for the SF-DODS now being promulgated by EPA reflect the public comments received in response to these two Public Notices, as well as all other comments EPA previously received concerning preliminary drafts of the SMMP.

21. Enforceability of the Proposed SMMP

One commentor stated that both permit conditions and the site management and monitoring provisions themselves must be enforceable not only by EPA, but by members of the public with standing to represent the marine resources at risk.

Response

As indicated above, the Final Rule has been revised to include specific provisions governing site monitoring and site management. These provisions establish the legal basis for requiring site monitoring and site management and establish the basic criteria for adequate site monitoring and management measures. These provisions will be

enforceable by EPA as well as by citizens who meet the requirements for filing suit under MPRSA section 105(g), 33 U.S.C. 1415(g).

22. Performance of Site Monitoring Field Work

Some commentors were concerned that reliable information may not be collected if site monitoring field work could be conducted by the permittee or, for federal projects, by the Corps of Engineers. These commentors recommended that all site monitoring ***41254** work be conducted by EPA and/or by independent third parties.

Response

The Final Rule has been revised to clarify that monitoring information required to be submitted by permittees must be collected and/or certified as being accurate by independent Quality Control contractors, who are not employees of the permittee. However, the Corps of Engineers shares site management and enforcement authority with EPA and, for disposal operations conducted by or for the Corps of Engineers, the Corps of Engineers may directly collect and submit the required information. EPA and the Corps of Engineers retain the authority to independently monitor, and conduct surveillance and enforcement operations on, all permitted disposal operations at the site. In addition, EPA may independently monitor Corps of Engineers disposal operations.

23. Relevance of Navy Monitoring Data

One commentor recommended that the U.S. Navy mid-point monitoring data should not be used or cited because a final report has not yet been received on this monitoring.

Response

References to the Navy mid-point monitoring have been retained, since this work entails the only monitoring of actual dredged material disposal to date in the vicinity of the SF-DODS. Given concerns expressed in public comments about the actual (versus modeled) behavior of disposed dredged material at what will be the deepest ocean disposal site so far designated in the U.S., EPA believes that the information is very relevant. Although the Navy's final monitoring report has not yet been received, the results contained in the preliminary reports reviewed by EPA are adequate to reach basic conclusions about site performance regarding plume behavior and deposition of dredged material on the bottom.

24. Corps of Engineers Site Designation Authority

One commentor requested that the Final Rule include more specific and accurate language regarding the responsibilities of the Army Corps of Engineers in issuing permits for dredging projects and managing the disposal site, and questioned whether the prohibition on site use (if the site management and monitoring provisions are not implemented) affects the Army Corps of Engineers' independent authority to designate temporary (project-specific) disposal sites under Section 103 of the MPRSA.

Response

Nothing in the Rule affects the independent authorities of other agencies. The Corps' authority to issue permits for ocean disposal is fully described in 40 CFR part 225. Also, under Section 103 of the MPRSA, the Army Corps of Engineers may designate temporary, project-specific ocean disposal sites if an EPA-designated (Section 102) ocean disposal site is unavailable. If, due to a lack of funding to implement the site management

and monitoring provisions required in the Final Rule, EPA's SF-DODS site were technically “unavailable” for use, the Army Corps of Engineers could propose to designate a temporary site. However, under these circumstances, it is likely that the SF-DODS site itself is the only location that could be justified or designated for temporary use, since EPA's Final EIS identified it as the best overall location for disposal. Proposed use of any other location would likely require the collection of substantial supplemental data, and could result in greater cumulative impacts than continued use of SF-DODS. It is EPA's position that responsibility to implement all monitoring requirements for use of a temporary Corps-designated site would rest with the Corps, and that temporary designation of the SF-DODS site by the Corps would require them to fully implement the site's existing monitoring requirements.

25. Detailed Comments on the Proposed SMMP

Several comments were received regarding specific details of the proposed SMMP as summarized in the site designation Proposed Rule. These included comments regarding methods for monitoring impacts to particular marine resources, and specific methods (including specific instrumentation) for tracking the dispersal and migration of sediments suspended in the water column.

Response

The SMMP included in the Final Rule incorporates overall requirements for site monitoring and management. However, all the operational details for achieving the SMMP requirements are not included in the Rule itself. This is because there are in many cases more than one methodology or technology that could be used to achieve the SMMP goals. It would be unreasonable to require more specific methodologies in the Rule itself, since the ability to select alternate approaches that may be more effective or efficient would be restricted by the requirement to first go through formal rulemaking. EPA believes that the degree of specificity in the SMMP is appropriate for the Final Rule. In addition, particular technologies and methodologies to be used at any time will be specified in the separate SMMP Implementation Manual, which will be subject to ongoing public review (also see response to comment number 14, above).

List of Subjects in 40 CFR Part 228

Environmental protection, Water Pollution Control.

Dated: July 15, 1994.

Nora L. McGee,

Acting Regional Administrator, EPA Region IX.

In consideration of the foregoing, subchapter H of chapter I of title 40 is amended as set forth below.

PART 228—[AMENDED]1. The authority citation for part 228 continues to read as follows:

Authority: 33 U.S.C. Sections 1412 and 1418.

40 CFR § 228.12

2. Section 228.12 is amended by adding paragraph (b)(70) to read as follows:

40 CFR § 228.12

§228.12 Delegation of management authority for ocean dumping sites.

* * * * *

(b) * * *

(70) San Francisco Deepwater Ocean Site (SF-DODS) Ocean Dredged Material Disposal Site—Region IX.

Location: Center coordinates of the oval-shaped site are: 37degrees 39.0' ‘ North latitude by 123degrees 29.0' West longitude (North American Datum from 1983), with length (north-south axis) and width (west-east axis) dimensions of approximately 4 nautical miles (7.5 kilometers) and 2.5 nautical miles (4.5 kilometers), respectively.

Size: 6.5 square nautical miles (22 square kilometers).

Depth: 8,200 to 9,840 feet (2,500 to 3,000 meters).

Use Restricted to Disposal of: Dredged materials.

Period of Use: Continuing use over 50 years from date of site designation, subject to restrictions and provisions set forth below.

Restrictions/Provisions: The remainder of this Rule constitutes the required Site Management and Monitoring Plan (SMMP) for the SF-DODS. This SMMP shall be supplemented by a Site Management and Monitoring Plan Implementation Manual (SMMP Implementation ***41255** Manual) containing more detailed operational guidance. The SMMP Implementation Manual may be periodically revised as necessary; proposed revisions to the SMMP Implementation Manual shall be made following opportunity for public review and comment. SF-DODS use shall be subject to the following restrictions and provisions:

(i) Type and capacity of disposed materials. The interim site disposal capacity shall be 6 million cubic yards of suitable dredged material per year until December 31, 1996. Thereafter, the capacity of the SF-DODS shall be set in a separate rulemaking based on either a comprehensive long-term management strategy for management of dredged materials from San Francisco Bay (reflected in an EPA-prepared dredged material management planning document) or a separate alternatives- based EPA evaluation of the need for ocean disposal. This separate rulemaking will identify the appropriate site capacity for the remaining life of this site designation. No disposal at the SF-DODS may occur after December 31, 1996 without subsequent promulgation by Rule of appropriate annual site disposal capacity.

(ii) Permit/project conditions. Paragraph (b)(70)(ii)(A) of this section sets forth requirements for inclusion in permits to use the SF-DODS, and in all Army Corps of Engineers federal project authorizations. Paragraph (b)(70)(ii)(B) of this section describes additional project-specific conditions that will be required of disposal permits and operations as appropriate. Paragraph (b)(70)(ii)(C) of this section describes how alternative permit conditions may be authorized by EPA and the Corps of Engineers. All references to “permittees” shall be deemed to include the Army Corps of Engineers when implementing a federal dredging project.

(A) Mandatory Conditions. All permits or federal project authorizations authorizing use of the SF-DODS shall

include the following conditions, unless approval for an alternative permit condition is sought and granted pursuant to paragraph (b)(70)(ii)(C) of this section:

(1) Transportation of dredged material to the SF-DODS shall only be allowed when weather and sea state conditions will not interfere with safe transportation and will not create risk of spillage, leak or other loss of dredged material in transit to the SF-DODS. No disposal vessel trips shall be initiated when the National Weather Service has predicted combined seas in excess of eighteen feet or has issued a gale warning for local waters during the time period necessary for the disposal vessel to complete dumping operations.

(2) All vessels used for dredged material transportation and disposal must be load-lined at a level at which dredged material is not expected to be spilled in transit under anticipated sea state conditions. Disposal vessels shall not be filled above their load limitations. Before any disposal vessel departs for the SF-DODS, an independent quality control inspector must certify that it is filled correctly. For purposes of paragraph (b)(70)(ii) of this section, “independent” means not an employee of the permittee; however, the Corps of Engineers may provide inspectors for Corps of Engineers disposal operations.

(3) Dredged material shall not be leaked or spilled from disposal vessels during transit to the SF-DODS.

(4) Disposal vessels in transit to and from the SF-DODS shall remain at least three nautical miles from the Farallon Islands at all times.

(5) When dredged material is discharged within the SF-DODS, no portion of the vessel from which materials are released (for example, a hopper dredge vessel or a towed barge) can be further than 3,200 feet from the center of the target area, centered at 37degrees39'N, 123degrees29'W.

(6) No more than one disposal vessel may be present within the permissible dumping target area referred to in paragraph (b)(70)(ii)(A)(5) of this section at any time.

(7) Disposal vessels shall use an appropriate navigation system capable of indicating the position of the vessel carrying dredged material (for example, a hopper dredge vessel or a towed barge) with a minimum accuracy and precision of 100 feet during all disposal operations. If the positioning system fails, all disposal operations must cease until the navigational capabilities are restored.

(8) The permittee shall maintain daily records of the amount of material dredged and loaded into barges for disposal, the times that disposal vessel depart for, arrive at and return from the SF-DODS, the exact locations and times of disposal, and the volumes of material disposed at the SF-DODS during each vessel trip. The permittee shall further record wind and sea state observations at intervals to be established in the permit.

(9) For each disposal vessel trip, the permittee shall maintain a computer printout from a Global Positioning System or other acceptable navigation system showing transit routes and disposal coordinates, including the time and position of the disposal vessel when dumping was commenced and completed.

(10) An independent quality control inspector (as defined in paragraph (b)(70)(ii)(A)(2) of this section) shall observe all dredging and disposal operations. The inspector shall verify the information required in paragraphs (b)(70)(ii)(A)(8) of this section and (9). The inspector shall promptly inform permittees of any inaccuracies or discrepancies concerning this information and shall prepare summary reports, which summarize all such inaccuracies and discrepancies, from time to time as shall be specified in permits. Such summary reports shall be

sent by the permittee to the District Engineer and the Regional Administrator within a time interval that shall be specified in the permit.

(11) The permittee shall report any anticipated or actual permit violations to the District Engineer and the Regional Administrator within 24 hours of discovering such violations. In addition, the permittee shall prepare and submit reports, certified accurate by the independent quality control inspector, on a frequency that shall be specified in permits, to the District Engineer and the Regional Administrator setting forth the information required by paragraphs (b)(70)(ii)(A)(8) and (9).

(12) Permittees shall allow observers from the Point Reyes Bird Observatory or other appropriate independent observers as specified in permits to be present on disposal vessels on all trips to the SF-DODS for the purpose of conducting shipboard surveys of seabirds and marine mammals. In addition, permittees shall ensure that independent observers are present on a sufficient number of vessel trips to characterize fully the potential impact of disposal site use on seabirds and marine mammals, taking into account, to the extent feasible, seasonal variations in such potential impacts. At a minimum, permittees shall ensure that independent observers are present on at least one disposal trip in any calendar month in which a disposal trip to the SF-DODS is made.

(13) At the completion of short-term dredging projects or annually for on-going projects, permittees shall prepare and submit to the District Engineer and the Regional Administrator complete pre-dredging and post-dredging bathymetric surveys showing the depth of all areas dredged, including side slope areas, before and after dredging. Permittees shall include a report indicating whether any dredged material was dredged outside of areas authorized for dredging or was dredged ***41256** within project boundaries at depths deeper than authorized for dredging by their permits.

(B) Project-specific conditions. Permits or federal project authorizations authorizing use of the SF-DODS may include the following conditions, if EPA determines these conditions are necessary to facilitate safe use of the SF-DODS, the prevention of potential harm to the environment or accurate monitoring of site use:

(1) Permittees may be required to limit the speed of disposal vessels in transit to the SF-DODS to a rate that is safe under the circumstances and will prevent the spillage of dredged materials.

(2) Permittees may be required to use automated data logging systems for recording navigation and disposal coordinates and/or load levels throughout disposal trips when such systems are feasible and represent an improvement over manual recording methodologies.

(3) Any other conditions that EPA or the Corps of Engineers determine to be necessary or appropriate to facilitate compliance with the requirements of the MPRSA and this Rule may be included in site use permits.

(C) Alternative permit/project conditions. Alternatives to the permit conditions specified in paragraph (b)(70)(ii) of this section in a permit or federal project authorization may be authorized if the permittee demonstrates to the District Engineer and the Regional Administrator that the alternative conditions are sufficient to accomplish the specific intended purpose of the permit condition in issue and further demonstrates that the waiver will not increase the risk of harm to the environment, the health or safety of persons, nor will impede monitoring of compliance with the MPRSA, regulations promulgated under the MPRSA, or any permit issued under the MPRSA.

(iii) Site monitoring. Data shall be collected in accordance with a three-tiered site monitoring program which consists of three interdependent types of monitoring for each tier: physical, chemical and biological. In addition,

periodic confirmatory monitoring concerning potential site contamination shall be performed.

Specific guidance for site monitoring tasks required by this paragraph shall be described in a Site Management and Monitoring Implementation Manual (SMMP Implementation Manual) developed by EPA. The SMMP Implementation Manual shall be reviewed periodically and any necessary revisions to the Manual will be issued for public review under an EPA Public Notice.

(A) Tier 1 monitoring activities. Tier 1 monitoring activities shall consist of the following:

(1) Physical monitoring. Tier 1 Physical Monitoring shall consist of a physical survey to map the area on the seafloor within and in the vicinity of the disposal site where dredged material has been deposited (the footprint). Such a survey shall use appropriate technology (for example, sediment profile photography) to determine the areal extent and thickness of the disposed dredged material, and to determine if any dredged material has deposited outside of the disposal site boundary.

(2) Chemical monitoring. Tier 1 Chemical Monitoring shall consist of collecting, processing, and preserving boxscore samples of sediments so that such sediments could be subjected to sediment chemistry analysis in the appropriate tier. Samples shall be collected within the dredged material footprint, outside of the dredged material footprint, and outside of the disposal site boundaries. Samples within the footprint shall be subjected to chemical analysis in annual Tier 1 activity. Samples from outside of the footprint and outside of the disposal site boundaries shall be archived and analyzed only when the criteria requiring Tier 2 as specified in paragraph (b)(70)(iv) are met. A sufficient number of samples shall be collected so that the potential for adverse impacts due to elevated chemistry can be assessed with an appropriate time-series or ordinal technique.

(3) Biological monitoring. Tier 1 Biological Monitoring shall have two components: monitoring of pelagic communities and monitoring of benthic communities.

(i) Pelagic communities. Tier 1 Biological Monitoring shall include regional surveys of seabirds, marine mammals and mid water column fish populations appropriate for evaluating how these populations might be affected by disposal site use. A combination of annual regional and periodic (random) shipboard surveys of seabirds and marine mammals will be used. The regional survey designs for each category of biota shall be similar to that used for the regional characterization studies referenced in the Final Environmental Impact Statement for Designation of a Deep Water Ocean Dredged Material Disposal Site off San Francisco, California (August 1993) with appropriate realignments to accommodate transects within and in the vicinity of the SF-DODS. The periodic shipboard surveys shall be performed from vessels involved in dredged material disposal operations at the SF-DODS as specified in permit conditions imposed pursuant to paragraph (b)(70)(ii)(A)(12). The minimum number of surveys must be sufficient to characterize the disposal operations for each project, and, as practicable, provide seasonal data for an assessment of the potential for adverse impacts for the one-year period. An appropriate time-series (ordinal) and community analysis shall be performed using data collected during the current year and previous years.

(ii) Benthic communities. Tier 1 Biological Monitoring shall include collection and preservation of boxscore samples of benthic communities so that such samples could be analyzed as a Tier 2 activity.

(4) Annual reporting. The results of the annual Tier 1 studies shall be compiled in an annual report which will be available for public review.

(B) Tier 2 monitoring activities. Tier 2 monitoring activities shall consist of the following:

(1) Physical monitoring. Tier 2 Physical Monitoring shall consist of oceanographic studies conducted to validate and/or improve the models used to predict the dispersion in the water column and deposition of dredged material on the seafloor at the SF-DODS. The appropriate physical oceanographic studies may include: the collection of additional current meter data, deployment of sediment traps, and deployment of surface and subsurface drifters.

(2) Chemical monitoring. Tier 2 Chemical Monitoring shall consist of performing sediment chemistry analysis on samples collected and preserved in Tier 1 from outside of the footprint and outside of the disposal site boundaries.

(3) Biological monitoring. Tier 2 Biological Monitoring shall involve monitoring of pelagic communities and monitoring of benthic communities.

(i) Pelagic communities. Tier 2 Biological Monitoring for pelagic communities shall include supplemental surveys of similar type to those in Tier 1, or other surveys as appropriate.

(ii) Benthic communities. Tier 2 Biological Monitoring for benthic communities shall include a comparison of the benthic community within the dredged material footprint to benthic communities in adjacent areas outside of the dredged material footprint. An appropriate time-series (ordinal) and community analysis shall be performed using data collected ***41257** during the current year and previous years to determine whether there are adverse changes in the benthic populations outside of the disposal site which may endanger the marine environment.

(4) Annual reporting. The results of any required Tier 2 studies shall be compiled in an annual report which will be available for public review.

(C) Tier 3 monitoring activities. Tier 3 monitoring activities shall consist of the following:

(1) Physical monitoring. Tier 3 physical monitoring shall consist of advanced oceanographic studies to study the dispersion of dredged material in the water column and the deposition of dredged material on the seafloor in the vicinity of the SF-DODS. Such physical monitoring may include additional, intensified studies involving the collection of additional current meter data, deployment of sediment traps, and deployment of surface and subsurface drifters. Such studies may include additional sampling stations, greater frequency of sampling, more advanced sampling methodologies or equipment, or other additional increased study measures compared to similar studies conducted in Tiers 1 or 2.

(2) Chemical monitoring. Tier 3 Chemical Monitoring shall consist of analysis of tissues of appropriate field-collected benthic and/or epifaunal organisms to determine bioaccumulation of contaminants that may be associated with dredged materials deposited at the SF-DODS. Sampling and analysis shall be designed and implemented to determine whether the SF-DODS is a source of adverse bioaccumulation in the tissues of benthic species collected at or outside the SF-DODS, compared to adjacent unimpacted areas, which may endanger the marine environment. Appropriate sampling methodologies for these tests will be determined and the appropriate analyses will involve the assessment of benthic body burdens of contaminants and correlation with comparison of the benthic communities inside and outside of the sediment footprint.

(3) Biological monitoring. Tier 3 biological monitoring shall have two components: Monitoring of pelagic communities and monitoring of benthic communities.

(i) Pelagic communities. Tier 3 Biological Monitoring shall include advanced studies of seabirds, marine mammals and mid water column fish to evaluate how these populations might be affected by disposal site use. Such studies may include additional sampling stations, greater frequency of sampling, more advanced sampling methodologies or equipment, or other additional increased study measures compared to similar studies conducted in Tiers 1 or 2. Studies may include evaluation of sub-lethal changes in the health of pelagic organisms, such as the development of lesions, tumors, developmental abnormality, decreased fecundity or other adverse sub-lethal effect.

(ii) Benthic communities. Tier 3 Biological Monitoring shall include advanced studies of benthic communities to evaluate how these populations might be affected by disposal site use. Such studies may include additional sampling stations, greater frequency of sampling, more advanced sampling methodologies or equipment, or other additional increased study measures compared to similar studies conducted in Tier 2. Studies may include evaluation of sub-lethal changes in the health of benthic organisms, such as the development of lesions, tumors, developmental abnormality, decreased fecundity or other adverse sub-lethal effect.

(4) Reporting. The results of any required Tier 3 studies shall be compiled in a report which will be available for public review.

(D) Periodic confirmatory monitoring. At least once every three years, the following confirmatory monitoring activities will be conducted and results compiled in a report which will be available for public review: Samples of sediments taken from the dredged material footprint shall be subjected to bioassay testing using one or more appropriate sensitive marine species consistent with applicable ocean disposal testing guidance (“Green Book” or related Regional Implementation Agreements), as determined by the Regional Administrator, to confirm whether contaminated sediments are being deposited at the SF-DODS despite extensive pre-disposal testing. In addition, near-surface arrays of appropriate filter-feeding organisms (such as mussels) shall be deployed in at least three locations in and around the disposal site for at least one month during active site use, to confirm whether substantial bioaccumulation of contaminants may be associated with exposure to suspended sediment plumes from multiple disposal events. One array must be deployed outside the influence of any expected plumes to serve as a baseline reference.

(iv) Site management actions. Once disposal operations at the site begin, the three-tier monitoring program described in paragraphs (b)(70)(iii) (A) through (C) of this section shall be implemented on an annual basis, through December 31, 1996, independent of the actual volumes disposed at the site. Thereafter, the Regional Administrator may establish a minimum annual disposal volume (not to exceed 10 percent of the designated site capacity at any time) below which this monitoring program need not be fully implemented. The Regional Administrator shall promptly review monitoring reports for the SF-DODS along with any other information available to the Regional Administrator concerning site monitoring activities. If the information gathered from monitoring at a given monitoring tier is not sufficient for the Regional Administrator to base reasonable conclusions as to whether disposal at the SF-DODS might be endangering the marine ecosystem, then the Regional Administrator shall require intensified monitoring at a higher tier. If monitoring at a given tier establishes that disposal at the SF-DODS is endangering the marine ecosystem, then the Regional Administrator shall require modification, suspension or termination of site use.

(A) Selection of site monitoring tiers.

(1) Physical monitoring. Physical monitoring shall remain limited to Tier 1 monitoring when Tier 1 monitoring

establishes that no significant amount of dredged material has been deposited or transported outside of the site boundaries. Tier 2 monitoring shall be employed when Tier 1 monitoring is insufficient to conclude that a significant amount of dredged material as defined in paragraph (b)(70)(iv)(A)(4) of this section has not been deposited or transported outside of the site boundaries.

(2) Chemical monitoring. (i) Chemical monitoring shall remain limited to Tier 1 Chemical Monitoring when the results of Physical Monitoring indicate that a significant amount of dredged material as defined in paragraph (b)(70)(iv)(A)(4) of this section has not been deposited or transported off-site, and Tier 1 Chemical Monitoring establishes that dredged sediments deposited at the disposal site do not contain levels of chemical contaminants that are significantly elevated above the range of chemical contaminant levels in dredged sediments that the Regional Administrator and the District Engineer found to be suitable for disposal at the SF-DODS pursuant to 40 CFR part 227.

(ii) Tier 2 monitoring shall be employed when the results of Physical Monitoring indicate that a significant amount of dredged material as defined in paragraph (b)(70)(iv)(A)(4) of this section has been deposited off-site, and Tier 1 Chemical Monitoring is ***41258** insufficient to establish that dredged sediments deposited at the disposal site do not contain levels of chemical contaminants that are significantly elevated above the range of chemical contaminant levels in dredged sediments that the Regional Administrator and the District Engineer found to be suitable for disposal at the SF-DODS pursuant to 40 CFR part 227. The Regional Administrator may employ Tier 2 monitoring when available evidence indicates that a significant amount of dredged material as defined in paragraph (b)(70)(iv)(A)(4) of this section has been deposited near the SF-DODS site boundary.

(iii) Tier 3 monitoring shall be employed within and outside the dredged material footprint when Tier 2 Chemical Monitoring is insufficient to establish that dredged sediments deposited at the disposal site do not contain levels of chemical contaminants that are significantly elevated above the range of chemical contaminant levels in dredged sediments that the Regional Administrator and the District Engineer found to be suitable for disposal at the SF-DODS pursuant to 40 CFR part 227.

(3) Biological monitoring.

(i) Pelagic communities. Biological monitoring for pelagic communities shall remain limited to Tier 1 monitoring when Tier 1 monitoring establishes that disposal at the SF-DODS has not endangered the monitored pelagic communities. When Tier 1 monitoring is insufficient to make reasonable conclusions whether disposal at the site has endangered the monitored pelagic communities, then Tier 2 monitoring of pelagic communities shall be employed. When Tier 2 monitoring is insufficient to make reasonable conclusions whether disposal at the site has endangered the monitored pelagic communities, then Tier 3 monitoring of pelagic communities shall be employed.

(ii) Benthic communities. Biological monitoring for benthic communities shall remain limited to Tier 1 monitoring when physical monitoring establishes that a significant amount of dredged material has not been deposited outside of the site boundaries. If physical monitoring indicates that a significant amount of dredged material has been deposited or transported outside of the site boundaries, then Tier 2 analysis of benthic communities shall be performed. If Chemical Monitoring establishes that there is significant bioaccumulation of contaminants in organisms sampled from the within or outside the dredged material footprint, then Tier 3 Biological Monitoring of the disposal site shall be employed. Tier 3 Biological Monitoring may replace Tier 3 Chemical Monitoring if observed biological effects are established as surrogate indicators for bioaccumulation of chemical contaminants in

sampled organisms.

(4) Definition of significant dredged material accumulation. For purposes of this paragraph (b)(70)(iv)(A) of this section, dredged material accumulation on the ocean bottom to a thickness of five centimeters shall be considered to be a significant amount of dredged material. The Regional Administrator may determine that a lesser amount of accumulation is significant if available evidence indicates that a lesser amount of off-site accumulation could endanger marine resources.

(B) Modification, suspension or termination of site use.

(1) If the results of site monitoring or other information indicate that any of the following are occurring as a result of disposal at the SF-DODS, then the Regional Administrator shall modify, suspend, or terminate site use overall, or for individual projects as appropriate:

(i) Exceedance of Federal marine water quality criteria within the SF-DODS following initial mixing as defined in 40 CFR 227.29(a) or beyond the site boundary at any time;

(ii) Placement or movement of significant quantities of disposed material outside of site boundaries near or toward significant biological resource areas or marine sanctuaries;

(iii) Endangerment of the marine environment related to potentially significant adverse changes in the structure of the benthic community outside the disposal site boundary;

(iv) Endangerment to the health, welfare, or livelihood of persons or to the environment related to potentially significant adverse bioaccumulation in organisms collected from the disposal site or areas adjacent to the site boundary compared to the reference site;

(v) Endangerment to the health, welfare, or livelihood of persons related to potentially significant adverse impacts upon commercial or recreational fisheries resources near the site; or

(vi) Endangerment to the health, welfare, or livelihood of persons or to the environment related to any other potentially significant adverse environmental impacts.

(2) The Regional Administrator shall modify site use, rather than suspend or terminate site use, when site use modification will be sufficient to eliminate the adverse environmental impacts referred to in paragraphs (b)(70)(iv)(B)(1)(i) or (ii) of this section or the endangerment to human health, welfare or livelihood to the environment referred to in paragraphs (b)(70)(iv)(B)(1)(iii) through (vi) of this section. Notwithstanding the provisions of any permit or federal project authorization authorizing site use, the Regional Administrator shall order, following opportunity for public comment, any of the following modifications to site use that he or she deems necessary to eliminate the adverse environmental effect or endangerment to human health, welfare, or livelihood or to the environment:

(i) Change or additional restrictions upon the permissible times, rates and total volume of disposal of dredged material at the SF-DODS;

(ii) Change or additional restrictions upon the method of disposal or transportation of dredged materials for disposal; or

(iii) Change or additional limitations upon the type or quality of dredged materials according to chemical, physical, bioassay toxicity, or bioaccumulation characteristics.

(3) The Regional Administrator shall suspend site use when site use suspension is both necessary and sufficient to eliminate any adverse environmental effect or endangerment to human health, welfare, or livelihood or to the environment referred to in paragraph (b)(70)(iv)(B)(1) of this section. Notwithstanding the provisions of any permit or federal project authorization authorizing site use, the Regional Administrator shall order, following opportunity for public comment, site use suspension until an appropriate management action is identified or for a time period that will eliminate the adverse environmental effect or endangerment to human health, welfare, or livelihood or to the environment.

(4) Notwithstanding the provisions of any permit or federal project authorization authorizing site use, the Regional Administrator shall order, following opportunity for public comment, site use permanently terminated if this is the only means for eliminating the adverse environmental impacts referred to in paragraphs (b)(70)(iv)(B)(1)(i) or (ii) of this section or the endangerment to human health, welfare or livelihood to the environment referred to in paragraphs (b)(70)(iv)(B)(1)(iii) through (vi).

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