SITE MANAGEMENT AND MONITORING PLAN

FOR THE LA-2, LA-3, AND LA-5 OCEAN DREDGED MATERIAL DISPOSAL SITES

January, 2024

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The following Site Management and Monitoring Plan (SMMP) for the LA-2, LA-3, and LA-5 Ocean Dredged Material Disposal Sites (ODMDSs) has been revised to comply with Section 102(c)(3) of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 U.S.C. Section 1401, et seq.) as amended by Section 506 of the Water Resources Development Act (WRDA) Amendments of 1992 (Public Law 102-580) and has been approved by the following officials of the U.S. Environmental Protection Agency (EPA) Region 9 and the U.S. Army Corps of Engineers (USACE), Los Angeles District.

/s/ 7/31/24	/s/ 12/20/23
Name Date	Name Date
Martha Guzman	David J. Castanon
Regional Administrator	Chief, Regulatory Division
U.S. Environmental Protection Agency Region 9	U.S. Army Corps of Engineers Los Angeles District

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

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1 INTRODUCTION

The Marine Protection, Research, and Sanctuaries Act (MPRSA), also referred to as the Ocean Dumping Act, regulates the transportation and dumping of any material into ocean waters. Under the MPRSA, no permit or authorization may be issued for ocean dumping where such dumping will unreasonably degrade or endanger human health or the marine environment.

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

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

EPA shares the responsibilities of conducting management and monitoring activities at EPA-designated ODMDSs with USACE. Under MPRSA section 102(c), EPA, in conjunction with USACE, is responsible for developing a site management and monitoring plan (SMMP) for each designated ODMDS. The objective of each SMMP is to ensure that dredged material ocean disposal activities will not unreasonably degrade the marine environment or endanger human health or economic potentialities or other uses of the ocean. The SMMP provisions are an integral part of managing all disposal activities at an ocean disposal site. Preparation of this SMMP has been informed by the Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites (EPA and USACE, 1996).

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

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

The provisions in this SMMP apply for all dredged material disposal activities at the LA-2, LA-3, and LA-5 ODMDSs including monitoring and management activities by the Federal agencies. This SMMP also includes Site Use Conditions to include in future permits or authorizations issued for disposal at these sites (**Appendix B**). References in this SMMP to matters that “should be required” refer to implementation in a subsequent proceeding to authorize disposal of dredged material, whether in a permit, in a contract or other Federal project specification for the transportation and disposal of dredged material, or by USACE directly. Other than the regulatory text copied below, this SMMP does not itself impose binding requirements or obligations, though terms and conditions

from the SMMP (such as the Site Use Conditions provided in **Appendix B**) will be incorporated into other documents (e.g., permits and Federal project documents that authorize transportation and disposal of dredged material at the ODMDSs) that will then impose binding rights and obligations on persons responsible for the authorized transportation and disposal.

Matters that "should be required" are implemented through application of the Site Use Conditions language included in **Appendix B**, though the language may vary from the terms of the Appendix as necessary and appropriate. If the translation of terms by USACE warrants further clarification, EPA can ensure implementation of the provisions in **Appendix B** as necessary through the EPA's concurrence actions.

1.1 Roles and Responsibilities

EPA and USACE work together to implement the site monitoring program for the LA-2, LA-3, and LA-5 ODMDSs. Specific responsibilities of EPA and USACE are as follows:

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

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

USACE: USACE is responsible for evaluating dredged material suitability and compliance with the MPRSA criteria, conditions, and restrictions, issuing MPRSA section 103 permits and project authorizations, and, in conjunction with EPA, regulating site use and developing and implementing site monitoring programs (including compliance monitoring) through development and use of the SMMP.

USACE also has a contract remedy process to enforce conditions related to ocean disposal with a contractor for a Federal project. USACE contract remedies are separate and distinct from statutory remedies under the MPRSA.

2 SITE DESCRIPTION

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

2.1 SITE HISTORY AND DESIGNATION

EPA manages three ocean disposal sites off of Southern California: LA-2 off of the ports of Los Angeles and Long Beach, LA-3 off of Newport Beach, and LA-5 off of San Diego Bay (Figure 2-1). Although this SMMP covers all three LA ODMDSs, each site is managed independently, and all of the information required for each site by the 1996 SMMP guidance and the regulations is available within this document. Disposal at these sites is coordinated jointly by EPA Region 9 and the USACE Los Angeles District. The SMMP for the LA-2, LA-3, and LA-5 ODMDSs was most recently updated in 2011.

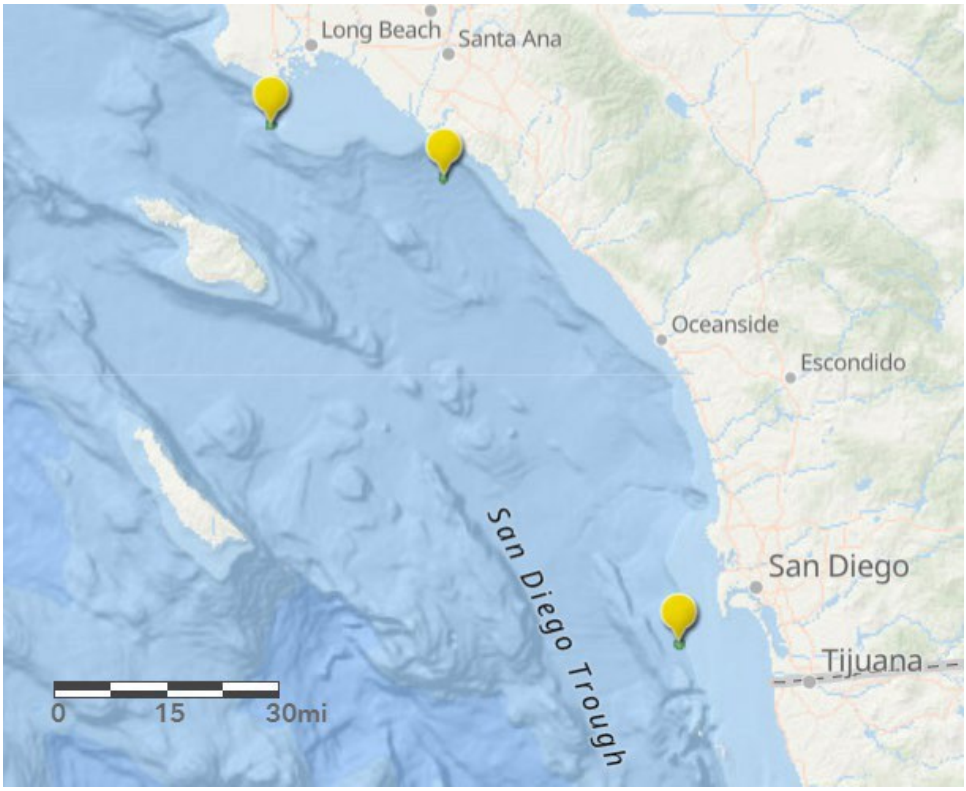

Figure 2-1. Location of the LA-2, LA-3, and LA-5 ODMDSs. Close-up maps are presented in subsequent sections.

The following are brief descriptions of the designations and site history for each ODMDS.

LA-2: The LA-2 ODMDS was first established as an interim disposal site from 1977 to 1988 (FR Vol. 56, No. 33, 1991). EPA permanently designated the LA-2 (Los Angeles/Long Beach) ODMDS in 1991 (FR Vol. 56, No. 33, 1991). The LA-2 ODMDS was established to provide an ocean disposal site for the disposal of suitable dredged material removed from the Ports of Los Angeles and Long Beach, as well as other nearby harbors or dredging sites (FR Vol. 56, No. 33, 1991).

LA-3: The historical (interim) LA–3 site had been used for disposing sediment dredged from harbors and flood channels within Orange County since 1976. Prior to 1992, the historical LA–3 was permitted by the USACE as an ocean disposal site for specific projects only. In 1992, EPA approved the historical LA-3 as an interim disposal site and subsequently extended this status through 2002 (FR Vol. 70, No. 175, 2005). EPA permanently designated the LA-3 (Newport Beach) ODMDS in 2005 (FR Vol. 70, No. 175, 2005), however the center of the permanent LA-3 ODMDS was shifted approximately 1.3 nmi (2.4 km) to the southeast of the historical (interim) LA-3 site (FR Vol. 70, No. 175, 2005). The LA-3 ODMDS was established to accommodate ongoing maintenance and capital improvement projects in the Los Angeles and Orange County regions (FR Vol. 70, No. 175, 2005).

LA-5: The LA-5 ODMDS was first established as an interim disposal site from 1977 to 1988 (EPA, 1991). EPA permanently designated the LA-5 (San Diego) ODMDS in 1991 (EPA, 1991). The LA-5 ODMDS was established for the disposal of suitable dredged material removed from the Port of San Diego and other nearby harbors or dredging sites (EPA, 1991).

2.1.1 Final Rule Text from 40 CFR 228.15

The official LA-2, LA-3, and LA-5 ODMDS designations are published at 40 CFR 228.15(l)(2), 40 CFR 228.15(l)(11), and 40 CFR 228.15(l)(1), respectively. Please refer to Table 2-1 for site coordinates (updated to WGS84) and surface disposal zone dimensions.

(2) Los Angeles/Long Beach, CA (LA-2).

(i) ***Location:*** 33° 37.10′ North Latitude by 118° 17.40′ West Longitude (NAD 1983), with a radius of 3,000 feet (910 meters).

(ii) ***Size:*** 0.77 square nautical miles.

(iii) ***Depth:*** 380 to 1060 feet (110 to 320 meters).

(iv) ***Primary use:*** Ocean dredged material disposal.

(v) ***Period of use:*** Continuing use, subject to submission of a revised Consistency Determination to the California Coastal Commission after 5 years of site management and monitoring.

(vi) ***Restrictions:*** Disposal shall be limited to dredged sediments that comply with EPA's Ocean Dumping Regulations.

(11) Newport Beach, CA, (LA-3) Ocean Dredged Material Disposal Site.

(i) ***Location:*** Center coordinates of the circle-shaped site are: 33° 31 ′00″ North Latitude by 117° 53′ 30″ West Longitude (NAD 1983), with a radius of 3,000 feet (915 meters).

(ii) ***Size:*** 0.77 square nautical miles.

(iii) ***Depth:*** 1,500 to 1,675 feet (460 to 510 meters).

(iv) ***Use Restricted to Disposal of:*** Dredged materials.

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

(vi) ***Restrictions:*** Disposal shall be limited to dredged materials that comply with EPA's Ocean Dumping Regulations.

(1) San Diego, CA (LA-5).

(i) ***Location:*** Center coordinates of the site are: 32° 36.83′ North Latitude and 117° 20.67′ West Latitude (NAD 1927), with a radius of 3,000 feet (910 meters).

(ii) ***Size:*** 0.77 square nautical miles.

(iii) ***Depth:*** 460 to 660 feet (145 to 200 meters).

(iv) ***Primary Use:*** Ocean dredged material disposal.

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

(vi) ***Restrictions:*** Disposal shall be limited to dredged materials that comply with EPA's Ocean Dumping Regulations and Corps Permitting Regulations.

2.2 SITE LOCATION

The LA-2 ODMDS is located approximately 6.8 miles (11 km) south-southwest of the Queens Gate entrance to the Los Angeles/Long Beach Harbor (Figure 2-2).

The LA-3 ODMDS is located approximately 5.3 miles (8.5 km) south-southwest of the entrance to Newport Harbor (Figure 2-3).

The LA-5 ODMDS is located approximately 8 miles (14 km) from the entrance of San Diego Bay (Figure 2-4).

Figure 2-2. Location of the LA-2 ODMDS (green) and center point (yellow) offshore of Long Beach, California.

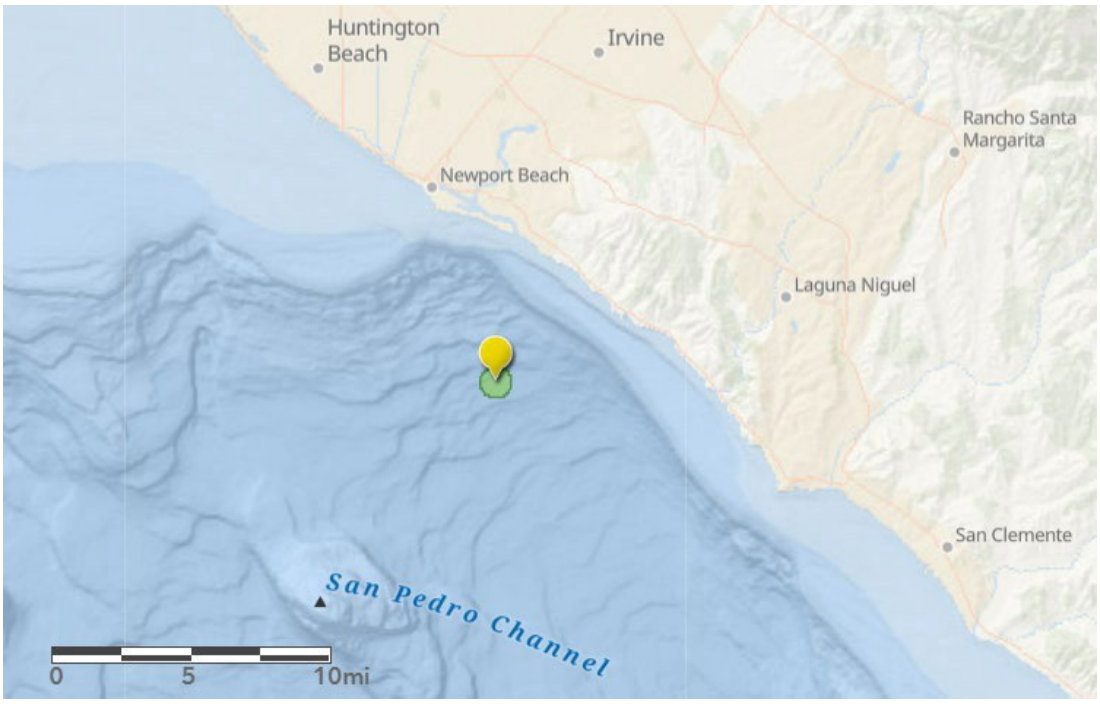

Figure 2-3. Location of the LA-3 ODMDS (green) and center point (yellow) offshore of Newport Beach, California.

Figure 2-4. Location of the LA-5 ODMDS (green) and center point (yellow) offshore of San Diego, California.

Table 2-1. Dimensions and center coordinates for the LA-2, LA-3, and LA-5 ODMDSs and their Surface Disposal Zones (SDZs). Updated coordinates in WGS84 are provided.

	Dimensions		Center Coordinates from CFR (Decimal Minutes)		Center Coordinates Updated to WGS84 (Decimal Degrees)	
Disposal Site	**Radius of the SDZ**	**Radius of Overall Site**	**Latitude**	**Longitude**	**Latitude**	**Longitude**
LA-2 (Los Angeles/ Long Beach)	1000 ft (305 ft)	3000 ft (915 m)	33° 37.10' N (NAD 83)	118° 17.40' W (NAD 83)	33.6183	-118.29
LA-3 (Newport Beach)	1000 ft (305 ft)	3000 ft (915 m)	33° 31' 00" N (NAD 83)	117° 53' 30" W (NAD 83)	33.5167	-117.8917
LA-5 (San Diego)	1000 ft (305 ft)	3000 ft (915 m)	32° 36.83' N (NAD 27)	117° 20.67' W (NAD 27)	32.6138	-117.3445

2.3 SITE USE

Disposal volumes have been variable at the LA-2, LA-3, and LA-5 ODMDSs since designation. Most of the total volume at these ODMDSs was disposed prior to 2000 (i.e., before disposal scow tracking and monitoring became required). Refer to Table 7-1 in **Appendix A** for disposal volumes per year since permanent designation. Potential future uses for the LA-2, LA-3, and LA-5 ODMDSs include port deepening projects to accommodate deep drafts and offshore renewable energy projects. Below are brief descriptions of dredged material source locations, annual site capacity, and disposal history for each ODMDS.

LA-2: The LA-2 ODMDS was designated for the disposal of suitable dredged material from the Ports of Los Angeles and Long Beach, as well as other nearby harbors or dredging sites (FR Vol. 56, No. 33, 1991). The maximum annual dredged material disposal quantity for the LA-2 site is 1,000,000 yd^3 (765,000 m^3) (FR Vol. 70, No. 175, 2005). Since its designation in 1991, a total of approximately 6,060,000 yd^3 of suitable dredged material has been disposed at the LA-2 ODMDS (Table 7-1). From 2000 to 2022, approximately 2,460,000 yd^3 of suitable dredged material was disposed at the LA-2 ODMDS, making it the most heavily used of the three LA ODMDSs in more recent years.

LA-3: The bulk of the dredged sediments disposed at the LA-3 ODMDS are generated from dredging of the Federal channel and marinas in Newport Bay, California. The maximum annual dredged material disposal quantity for LA-3 ODMDS is 2,500,000 yd^3 (FR Vol. 70, No. 175, 2005). Since its designation in 2005, a total of approximately 1,610,000 yd^3 of suitable dredged material has been disposed at the LA-3 ODMDS (Table 7-1). Since 2005, the LA-3 ODMDS has received material from the greatest number of projects, compared to the LA-2 and LA-5 ODMDSs within the same timeframe (USACE, 2022).

LA-5: The LA-5 ODMDS was designated for the disposal of suitable dredged material from the Port of San Diego and other nearby harbors or dredging sites (EPA, 1991). The total amount of material to be disposed at the LA-5 ODMDS was expected to average approximately 280,000 yd^3 per year (EPA, 1987b). The LA-5 Final Environmental Impact Statement (FEIS) for site designation evaluated potential site capacity and predicted no significant adverse environmental impacts below 700,000 yd^3 per year. Although the average amount of dredged material disposed between 1991 and 2022 was approximately 420,000 yd^3 per year, the average was 76,000 yd^3 per year more recently (between 2000 and 2022; Table 7-1). Since its designation in 1991, a total of approximately 13,500,000 yd^3 of suitable dredged material has been disposed at the LA-5 ODMDS. This ODMDS has received the greatest volume of material overall, with about two and eight times the total disposal volumes of the LA-2 and LA-3 ODMDSs, respectively.

2.4 PAST MONITORING ACTIVITIES

Baseline assessments and monitoring provide an important record of changes or impacts that have occurred during the use of the site. Bathymetric surveys may be conducted before and after each disposal event. Data collected during these surveys are used to inform future monitoring activities and site disposal activity. Monitoring activities completed at the LA-2, LA-3, and LA-5 ODMDSs are outlined in Table 2-2, Table 2-3, and Table 2-4, respectively.

The LA-2, LA-3, and LA-5 ODMDSs were not comprehensively monitored for long periods because the EPA monitoring vessel was predominantly located on the East Coast. However, the more recent ability to contract vessels has allowed EPA to monitor these ODMDSs more regularly. EPA most recently conducted surveys for the LA-2, LA-3, and LA-5 ODMDSs in 2020, 2015, and 2018, respectively. The results of these

surveys indicated that the pre-disposal sediment testing program has protected the ODMDSs and their surroundings from any adverse contaminant loading. The bulk of the dredged material disposed in the last decades appears to have been deposited properly within the site boundaries. Minor and localized physical impacts from dredged material disposal were detected, however there have been no apparent long-term adverse impacts resulting from dredged material disposal. Observed disposal mounds and elevated contaminant concentrations identified outside of the designated ODMDSs were likely the results of legacy short-dumps or mis-dumps prior to routine scow tracking, and recent monitoring indicates that the current management measures are effective at protecting the LA ODMDSs from long-term, adverse impacts.

Table 2-2. Monitoring surveys and other studies conducted in the vicinity of the LA-2 ODMDS.

Date	Survey/ study	Conducted by/ Reference	Purpose	Results
1982	Biological, chemical surveys	Interstate Electronics Corporation, 1982	Collect water column chemistry and trawl data	Data collected on demersal species composition as well as water column chemistry, for baseline surveys and future trend analysis.
1983-1984	Physical, biological, chemical surveys	Tetra Tech and MBC Applied Environmental Services, 1985; EPA, 1985	Collect baseline data for site designation, including sediment and water quality characteristics and species composition and tissue chemistry	Data collected on species dominance, abundance, and richness for benthic infauna, demersal fish, and epibenthic macroinvertebrates; sediment grain size and chemistry; water column profiles; tissue chemistry for baseline surveys and future trend analysis.
1993	Bathymetric, biological surveys	EPA and USACE	Collect data to evaluate past disposal activities	No mounding at the LA-2 ODMDS since the previous surveys. Obtained in-depth data on biological composition for the LA-2 ODMDS.
1998	Bathymetric survey	Gardner et al., 1998a, 1998b (USGS)	Collect data to evaluate past disposal activities	Obtained bathymetry and estimation of the area volume of allochthonous (foreign material) marine disposal mounds (MDMs), indicative of past disposal activities. Detected discrete MDMs within the LA-2 ODMDS, as well as in the surrounding areas, particularly east and west of the site.

Date	Survey/ study	Conducted by/ Reference	Purpose	Results
2000-2001	Physical, biological, chemical surveys	Los Angeles Sanitation Districts, 2000; Chambers Group, 2001;USACE, 2002	Collect data on species dominance, abundance, and richness for benthic invertebrates and pelagic species, as well as fish tissue samples, sediment chemistry, and sediment profile images (SPI)	Benthic species diversity and abundance was similar to 1983-1984 studies. Pelagic species abundance decreased from August 2000 to January 2001, while species richness was similar to the 1998 surveys. No evidence of bioaccumulation in epifauna or fishes. Differences detected in certain analytes between stations at reference sites, within the LA-2 ODMDS, and adjacent to the LA-2 ODMDS attributable to past dredge disposal operations. Recent deposition was generally properly deposited within the ODMDS boundaries.
2020	Physical, biological, chemical surveys	EPA Region 9	Collect SPI and plan view images (PV); sediment samples for grain size, chemistry, and benthic community analysis	The pre-disposal sediment testing program has protected the LA-2 ODMDS and its surroundings from any adverse contaminant loading. Bulk of the dredged material disposed in the last decade or more appears to have been deposited properly within the site boundaries. Minor and localized physical impacts from dredged material disposal were detected, but no significant adverse impacts are apparent to the benthic environment.

Table 2-3. Monitoring surveys and other studies conducted in the vicinity of the LA-3 ODMDS.

Date	Survey/ study	Conducted by/ Reference	Purpose	Results
1988-1989	Physical, biological, chemical surveys	MITECH 1990; EPA and USACE, 2005	Collect baseline data on species dominance, abundance, and richness for benthic invertebrates; sediment grain size and chemistry	Data collected on species dominance, abundance, and richness for benthic invertebrates and pelagic species, as well as water column chemistry, at the interim LA-3 site.
1998	Bathymetric survey	Gardner et al., 1998a, 1998b (USGS)	Collect data indicative of past disposal activities	Obtained bathymetry and estimation of the area volume of allochthonous (foreign material) marine disposal mounds (MDMs) at the interim LA-3 site. Detected discrete MDMs adjacent to, and southwest of, the interim LA-3 site.

Date	Survey/ study	Conducted by/ Reference	Purpose	Results
1999	Physical, biological surveys	Science Applications International Corporation, 2000	Collect SPI	Disposal material was easily detectable as distinct depositional layers. Observed presence of pioneering and higher order successional stage infaunal communities near the interim LA-3 site, with communities at the center of the site appearing to be early successional stages.
2000-2001	Physical, biological, chemical surveys	Chambers Group, 2001; USACE, 2002; EPA and USACE, 2005	Collect data on species dominance, abundance, and richness for benthic invertebrates and pelagic species; SPI; sediment grain size and chemistry	Evidence of recent and historical disposal both within and outside of the interim LA-3 site boundary. Marine species composition was typical of that seen on the slope Southern California Bight (SCB). Sediments within the interim site boundary had a larger proportion of sand and gravel and lower proportion of silt compared to surrounding and reference site stations. Concentrations of analytes were similar among the reference, recent disposal, historical disposal, and interim LA-3 boundary stations.
2015	Bathymetric survey	EPA Region 9	Collect bathymetric and backscatter data	The LA-3 ODMDS and discontinued interim site had coarser-grained sediments than the surrounding area. Potential short dumping identified at the discontinued site. Bathymetry used to inform subsequent sediment and camera survey.
2015	Physical, biological surveys	EPA Region 9	Collect SPI and PV; sediment samples for grain size, chemistry, and benthic community analysis	No long-term adverse impacts resulting from dredged material disposal at LA-3 ODMDS, the discontinued interim site, or in the area surrounding those sites. Minor and localized physical impacts from dredged material disposal were detected, but no significant adverse impacts are apparent to the benthic environment.

Table 2-4. Monitoring surveys and other studies conducted in the vicinity of the LA-5 ODMDS.

Date	Survey/ study	Conducted by/ Reference	Purpose	Results
1983-1984	Physical, biological, and chemical surveys	EPA, 1987b	Collect baseline data on sediment grain size and chemistry	Obtained data on sediment grain size and chemistry for future trend analysis.
2008	Physical and chemical survey	EPA Region 9	Collect data on the sediment grain size and chemistry of the LA-5 ODMDS	The LA-5 ODMDS survey was limited to the collection of eight sediment samples due to vessel issues. However, these chemistry results indicated that there were no adverse impacts from dredged material disposal operations through 2008.
2018	Bathymetric survey	EPA Region 9	Collect bathymetric and backscatter data to obtain measurements of the contours of the seafloor	No significant difference in substrate composition throughout the study area from disposal operations. Bathymetric and backscatter data used to inform sediment sampling stations for subsequent sediment survey.
2018	Physical, biological, and chemical surveys	EPA Region 9	Collect data on sediment grain size and chemistry; SPI and PV	Sediment grain size was similar throughout the survey area. Analytes outside the LA-5 ODMDS that exceeded the ERL were not attributable to the dredged material disposal activities. Benthic community structure inside and outside of the LA-5 ODMDS were generally similar. No long-term adverse impacts resulting from dredged material disposal at LA-5 ODMDS or in the area surrounding those sites.

2.5 SITE CHARACTERIZATION

2.5.1 Physical Characterization

LA-2: The LA-2 ODMDS is located near the top edge of the continental slope with a depth of approximately 110 to 340 m (360 to 1,115 ft) (EPA and USACE, 2005). The site is located just south of the San Pedro Valley submarine canyon. At a depth of about 125 m (410 ft), the continental shelf is relatively flat (0.8° regional slope), however the slope drops from the shelf (about 7°) and the steep southern wall of the San Pedro Sea Valley drops (>9°). The slope is cut by several channels incised from 4 to 24 m (13.1 to 78.7 ft) deep and up to 100 m (329 ft) wide (Gardner, 1998a).

The prevailing currents at the LA-2 ODMDS are primarily parallel to shore and flow along constant depth contours (EPA and USACE, 2005). Surface currents over the

outer shelf have an overall mean speed of about 15 cm/sec, with flow split almost equally between upcoast and downcoast. Near the bottom of the outer shelf, current directions are oriented approximately 30° clockwise from the alongshore alignment, with the overall mean velocity downcast at 0.4 cm/sec and offshore at 0.17 cm/sec. Surface currents over the continental slope are generally directed alongshore. Near the surface, the slope currents in the area have an average of 14.5 cm/sec. Alongshore flow is divided almost equally between upcoast and downcoast directions. Near-bottom slope currents are directed toward the San Pedro Sea Valley or the downcoast most of the time, with a mean velocity of 2.62 cm/sec.

The 1987 EIS for the LA-2 ODMDS indicates that samples of bottom sediments generally consisted of sandy-silt, with averages of 1% gravel, 59% sand, 28% silt, and 12% clay (EPA, 1987a). The reference site sediments averaged 1% gravel, 64% sand, 28% silt, and 8% clay. Sediments sampled in the LA-2 ODMDS and surrounding areas in 2000 were similarly composed primarily of silt and sand, lesser amounts of clay, and relatively small gravel fractions (EPA and USACE, 2005). Sediments sampled by EPA in 2020 inside the LA-2 ODMDS were also predominantly sand (average of 62.6%), followed by silt (24.6%), and clay (12.4%). Stations sampled outside of the LA-2 ODMDS presented the same pattern. These results indicate that grain size has remained relatively similar inside and outside of the LA-2 ODMDS from 1987 to 2020.

A 1998 seafloor-mapping survey recorded marine disposal mounds (MDMs) outside the LA-2 ODMDS than within, indicating potential short-dumping. However, the vertical relief of all detected mounds was less than 30 cm (Gardner et al., 1998a, 1998b). In the early 2000s, EPA and USACE began to require “black-box” satellite-based tracking of all disposal scows. Since then, there have been no extended patterns of short-dumps nor spills/leaks during ocean disposal trips. The 1999 SPI results indicate that if dredged material was present at the stations outside the boundaries in the prior bathymetric survey, the material had been reworked and recolonized (EPA and USACE, 2005).

LA-3: The LA-3 ODMDS is located on the slope of Newport Canyon centered at a depth of approximately 490 m (1,600 ft) (EPA and USACE, 2005). The bottom topography gently slopes from approximately 460 to 510 m (1,500 to 1,675 ft) across the ODMDS. The LA-3 ODMDS is situated over a relatively smooth continental slope incised by several canyons, where the regional slope gradient is approximately 2-3°. It is also

situated at the foot of a submarine canyon, and therefore this area would be expected to receive sedimentation from erosion and nearshore transport into the canyon.

The prevailing currents at the LA-3 ODMDS are primarily parallel to shore and flow along constant depth contours (EPA and USACE, 2005). Near the surface, the slope currents in the area are generally between 3.5 and 69.8 cm/sec in the summer, with flow predominantly downcast. In the winter, slope currents are generally between 5.5 and 14.3 cm/sec, with net flow toward shore. At greater depths, the slope currents are between 1.9 and 8.4 cm/sec in the summer, with net upcoast flow. In the winter, slope currents are generally between 2.6 and 7.2 cm/sec, with upcoast flow at 290 m (950 ft) and upcoast/inshore flow at 427 m (1,400 ft).

Sediments sampled within the LA-3 interim site boundary in 2000 had a larger proportion of sand and gravel, and a lower proportion of silt compared with sediments at stations surrounding the ODMDS and at the reference site (EPA and USACE, 2005). Compared to 1988, sediments sampled in 2000 within the LA-3 ODMDS were composed of substantially higher percentages of clay (14- 52% in 2000 vs. 2-5% in 1988). Likewise, the percentage of sand in sediments at LA-3 in 2000 (9-60%) was lower than that recorded in 1988 (27- 87%). Like the results of the FEIS, the sediments sampled by EPA in 2015 within the LA-3 ODMDS contained coarser grain sized sediments and substantially more sand and lower fines compared to ambient seafloor conditions, with averages of 0.4% gravel, 37% sand, 40% silt, and 23% clay. This grain size distribution within the ODMDS generally reflects the character of dredged material typically disposed, which often includes sand and some fines from land-side runoff that settles in harbors, berths, and navigation channels. In contrast, native sediments around the LA-3 site are uniformly finer grained sediments. These on-site physical changes are expected, and they are not considered to be a significant or adverse impact.

Bathymetric surveys at and around the LA-3 ODMDS in 1998 identified MDMs from past disposal operations, however the vertical relief of all mounts was less than 30 cm (Gardner et al., 1998a, 1998b). Discrete MDMs were detected adjacent to, and southeast of, the LA-3 ODMDS (Gardner et al., 1998b). Though dredged material was detected at several stations south of the disposal site in 2000, the infauna had recovered completely, and the sediments had been reworked (EPA and USACE, 2005).

LA-5: The LA-5 ODMDS is located on a ridged slope at a depth of 183 m (600 ft) (EPA, 1987b). Somewhat south of the LA-5 ODMDS is the steep submarine Coronado Canyon (EPA, 1987b).

The 1987 EIS examined ocean currents in the San Diego area of the Southern California Bight (SCB), which encompasses the areas around and within the LA-5 ODMDS. Current conditions vary in this area (EPA, 1987b). Off of Point Loma, the ocean currents are generally between 15 and 71 cm/sec, averaging 45 cm/sec at the surface and flowing south. At greater depths, the currents are between 3.1 and 12 cm/sec, averaging 7.3 cm/sec to the south.

The 1987 EIS for the LA-5 ODMDS indicates that bottom sediments were generally sandy-silt, with averages of 3% gravel, 52% sand, 33% silt, and 12% clay (EPA, 1987b). The reference site sediments had a similar distribution, with less than 1% gravel, 57% sand, 35% silt, and 8% clay. The 2018 survey conducted by EPA confirmed that sediment grain size remained similar in and around the LA-5 ODMDS. There were slight spatial differences within the LA-5 ODMDS, with the center of the LA-5 ODMDS (i.e., the sediment mound) classified as “sand with gravel” (65-75% sand, up to 20% gravel) and the area within the LA-5 ODMDS directly surrounding the sediment mound classified as “silty sand with clay” (45-55% sand, 35-45% silt, 5-10% clay, and less than 1% gravel). Overall, however, it did not appear that were was a large difference in substrate composition throughout the survey area. Although grain size has slightly changed at the LA-5 ODMDS from dredged material disposal, the distribution within the ODMDS generally reflects the character of dredged material typically disposed. These on-site physical changes are expected, and they are not considered to be a significant or adverse impact.

2.5.2 Chemical Characterization

LA-2: The 1987 EIS for the LA-2 ODMDS indicated that the disposal site’s trace metal values were often elevated compared to those at the reference site, however they were considerably lower than the levels found in the undiluted dredged materials from the Ports of Los Angeles and Long Beach (EPA, 1987a). At that time, concentrations of cadmium, chromium, lead, mercury, and zinc at the LA-2 ODMDS generally exceeded regional values as well as those found at the reference site. In contrast, surveys conducted in 2000 indicated that sediment metal levels at the LA-2 ODMDS were comparable to concentrations detected in other studies in the surrounding area and on the mainland shelf of the SCB (EPA and USACE, 2005). Metal concentrations within the

LA-2 site boundary appeared to have decreased since 1984 but were still slightly elevated in comparison to other sediments offshore of southern California (Chambers Group, 2001).

Results from the 2020 EPA monitoring survey indicated that, overall, the LA-2 ODMDS displayed less elevated contaminant concentrations than its surrounding areas. Except for zinc and lead, the average concentrations of chemical analytes inside the LA-2 ODMDS were all below ambient conditions. Even so, both average values for zinc and lead were well below NOAA's effects range low (ERL) screening level, below which impacts are unlikely to occur; zinc only slightly exceeded the ERL at one station inside the LA-2 ODMDS, while lead did not exceed at any stations inside the ODMDS. Therefore, the 2020 monitoring survey concluded that the pre-disposal sediment testing program appears to have protected the LA-2 ODMDS and its surrounding areas from adverse contaminant loading.

LA-3: The 2005 FEIS for the LA-3 ODMDS indicated that many constituents were similar among the sediments sampled at and around the interim disposal site, however, there were slightly higher mean concentrations of most metals at the site compared to its surrounding areas (EPA and USACE, 2005). In contrast, surveys conducted in 2000 indicated the distribution of sediment metals was similar among the reference, recent disposal, historical disposal, and interim LA-3 boundary sites (Chambers Group, 2001). Overall, sediment metal levels at and around the interim LA-3 ODMDS in 2000 were comparable to concentrations detected in other studies in the same area, with many differences likely attributed to relative grain sizes.

Results from the 2015 EPA monitoring survey indicated the LA-3 ODMDS contained low but variable concentrations of most chemical constituents. Five metals (arsenic, cadmium, copper, mercury, and nickel) were at concentrations above NOAA's ERL within the ODMDS, and areas surrounding the LA-3 ODMDS contained two metals (arsenic and nickel) at concentrations above ERL. Of these metals, only cadmium, lead, and zinc were slightly higher in average concentration within the LA-3 ODMDS compared to ambient seafloor conditions. Organic constituents were also low at the LA-3 ODMDS; only two constituents (DDTs and PCBs) exceeded NOAA ERL screening levels. There were no exceedances for NOAA's effects range median (ERM) values within or around the LA-3 ODMDS. Overall chemical analysis of stations both within and outside the LA-3 ODMDS indicate only low concentrations for chemicals of concern. Therefore, the 2015 monitoring survey concluded that the pre-disposal sediment testing

program appears to have protected the LA-3 ODMDS and its surrounding areas from adverse contaminant loading.

LA-5: The 1987 EIS for the LA-5 ODMDS indicated that, although the disposal site's trace metal values were often elevated compared to those at the reference site, they were considerably lower than the levels found in the dredged materials from the San Diego Bay (EPA, 1987b). At that time, concentrations of cadmium, chromium, copper, lead, and zinc at the LA-5 ODMDS generally exceeded regional values as well as those found at the reference site.

Results from the 2018 EPA monitoring survey indicated that concentrations of most chemicals of concern were low. While copper and PCBs in the LA-5 ODMDS exceeded NOAA's ERL values, the concentrations were just above or equal to the ERL. In contrast, some measurement stations outside the LA-5 ODMDS showed ERL exceedances for copper, mercury, nickel, DDTs, PAHs, and PCBs. Since the stations inside the LA-5 ODMDS did not have significant exceedances, and the concentrations were lower than the stations outside the site boundaries, the 2018 monitoring survey concluded that the pre-disposal sediment testing program appears to have protected the LA-3 ODMDS and its surrounding areas from adverse contaminant loading.

2.5.3 Biological Characterization

LA-2: According to the 1987 EIS, the benthic infauna within the LA-2 ODMDS were generally similar to those reported for other slope locations in the surrounding region (EPA, 1987a). In approximate order of abundance and diversity, the dominant groups were polychaetes, crustaceans, mollusks, and echinoderms. During this time, the values for species diversity and species richness were generally higher at the reference site compared to the LA-2 ODMDS, whereas the abundance of individuals within the LA-2 ODMDS was greater than the reference site.

The 2000 and 2001 benthic infauna surveys similarly showed that polychaetes were the dominant group in terms of species diversity, followed by crustaceans, mollusks, and echinoderms (EPA and USACE, 2005). In terms of species diversity, stations at the LA-2 study area exhibited a range from 2.69 at station adjacent to the disposal site, to 4.23 at a reference area station. Species richness ranged from 48 to 167 species, with both values recorded at stations adjacent to the disposal site. These findings reflect similar patterns to the surveys referenced in the 1987 EIS, except species richness appears to have increased near the disposal site.

In terms of epibenthic and pelagic invertebrates, the most abundant species at all sites surveys in 2000 and 2001 were urchins (EPA and USACE, 2005). A total of 934 individuals were recorded in the August 2000 survey, while 3,299 individuals were recorded in January 2001. Winter was characterized by higher abundance at the disposal site and locations adjacent to the disposal site; there was no seasonal difference at the reference site. Although species richness was lower at the LA-2 ODMDS compared to the reference stations, results remained similar to those seen in ambient conditions along Souther California Bight (SCB) surveys.

Results from the 2020 EPA monitoring survey indicated that the community structure within the LA-2 ODMDS was not significantly different from outside the ODMDS. A total of 422 unique invertebrate taxa were found in the 2020 survey. Species richness was similar between stations inside, adjacent to, and outside of the ODMDS, but was somewhat more elevated outside the LA-2 ODMDS. The LA-2 ODMDS displayed higher mean abundance and density than the areas outside the ODMDS, although the average organism density inside and outside the LA-2 ODMDS was variable. A similarity percentages (SIMPER) analysis highlighted the high diversity of organisms captured among sample stations within the same group (i.e., inside ODMDS or outside ODMDS) and between groups. A cluster analysis revealed that community structure present among stations was likely influenced by station depth, and this trend is supported by other reports on the Palos Verdes region (Hyland et al., 1991; Deiner et al., 1995). Overall, the 2020 survey concluded that the infaunal community within the LA-2 ODMDS is not likely adversely impacted in the long-term by dredged material disposal. Physical impacts to infaunal communities within the LA-2 ODMDS from sediment disposal are expected to be short-term and localized.

LA-3: According to the surveys conducted in 2000 and 2001, the interim LA-3 ODMDS exhibited the typical marine species composition seen on the SCB slope at the same depth (EPA and USACE, 2005). A total of 136 benthic infaunal species was collected from the LA-3 study area during these surveys, with polychaetes dominating the community, followed by crustaceans and mollusks. Species richness at the LA-3 study area ranged from 22 species (at stations within the interim site boundary and historic disposal areas) to 52 species (at a recent disposal area station). Species diversity at LA-3 ranged from 2.43 within the interim site boundary to 3.46 at a historic disposal area. Overall, it appeared there was greater benthic infaunal species richness and diversity at the recent disposal and historic disposal sites compared to the reference

site, possibly due to the nature of the organic matter and the recolonizing communities there.

In terms of epibenthic and pelagic invertebrates, the most abundant species at all sites surveys in 2000 and 2001 were urchins and sea stars (EPA and USACE, 2005). A total of 22,481 individuals were recorded in the August 2000 survey, while 14,900 individuals were recorded in January 2001. During the summer survey, abundance was greater at the interim disposal, recent disposal, and reference sites than in winter; only the historical disposal site had greater abundance in winter. This seasonality in urchin abundances was also observed in the 1988-1989 surveys (MITECH, 1990). Urchin abundance was also noticeably lower at the interim LA-3 site compared to the reference site (EPA and USACE, 2005). The 2000 and 2001 surveys showed that the LA-3 site had lower species richness compared to the reference stations. However, the results were similar to those seen in other deep-water surveys in the area, therefore it is possible that these differences were driven by depth gradients.

Results from the 2015 EPA monitoring survey indicated the mean abundance, density of organisms, and diversity were all slightly higher outside the ODMDS than inside the ODMDS. However, lower values within the ODMDS are generally expected given the short-term, physical impacts from dredged material disposal. Additionally, the overall abundances of different organism classes were not affected by the presence of dredged material at the LA-3 ODMDS. A total of 250 benthic taxa were found in the 2015 survey; polychaetes dominated the community, followed by crustaceans and then mollusks. This species distribution was consistent with the surveys conducted in 2000 and 2001. Mollusks were the most similar in abundance between the sample stations within the LA-3 ODMDS and the stations outside the ODMDS representing ambient seafloor conditions. Although annelids, crustaceans, and other benthic organism categories appeared in lower abundances inside the LA-3 ODMDS compared to ambient conditions, these findings are consistent with short-term impacts following disposal. Overall, the benthic community analyses showed localized physical impacts from dredged material disposal operations, however it appears that recolonization occurs after dredged material is deposited, and similar infaunal and epifaunal communities occupy both on-site and off-site areas. Given that the chemistry results indicate that the pre-disposal testing regime is effective at preventing chemical impacts to and around the ODMDS, the localized impacts to the benthic community inside the ODMDS are likely temporary physical impacts, and the benthic community is expected to recover.

LA-5: According to the 1987 EIS, the LA-5 ODMDS exhibited benthic infauna composition that was generally similar to those reported for other slope locations in the SCB (EPA, 1987b). In approximate order of abundance and diversity, the dominant groups were polychaetes, crustaceans, mollusks, and echinoderms. Compared to the reference site, infauna at the LA-5 ODMDS were less diverse but approximately equally abundant, and the most abundant species were more dominant numerically inside the LA-5 ODMDS.

Results from the 2018 EPA monitoring survey indicated that benthic community structure indices inside and outside of the LA-5 ODMDS were generally similar. A total of 265 benthic invertebrate taxa were found in the 2018 survey. Although organism density and taxa richness were lower within the LA-5 ODMDS, these differences were primarily driven by four stations outside the ODMDS that had exceptionally high density and richness. An analysis of similarity (ANOSIM) found no statistical difference between sampled areas and no statistically meaningful differences between any of the pairwise comparisons of groups (i.e., inside vs. outside the ODMDS). Therefore, the 2018 survey concluded that the disposal of dredged material at the LA-5 ODMDS does not appear to have any significant adverse impacts on the local community structure both inside and outside of the ODMDS.

2.5.4 Discussion of critical amenities

The dumping of materials into the ocean is only permitted at sites selected to minimize the interference of disposal activities with other activities in the marine environment, particularly avoiding areas of existing fisheries or shell fisheries, and regions of heavy commercial or recreational navigation.

Dredged material disposal activities have occurred at the LA sites since the late 1970s. Historical disposal at the LA–2 site, while located within the U.S. Coast Guard Traffic Separation Scheme, has also not interfered with these activities. Disposal at the LA-3 and LA-5 ODMDSs has not interfered with commercial or recreational navigation, commercial fishing, or sportfishing activities, particularly since the disposal sites are located outside the USCG Precautionary Area and major shipping lanes. The continued use of these sites would not change these conditions.

Transit routes to the LA sites may occasionally cross through California Marine Protected Areas. Transit routes also intersect with cetacean migration corridors and identified deep-sea coral observations. However, disposal vessels using the LA sites are typically required to track and report their transit routes and vessel draft to ensure

that no material will leak into sensitive areas during transit. The LA sites are also sufficiently removed from shore and fishery resources to allow water quality perturbations caused by dispersion of disposal material to be reduced to ambient conditions before reaching environmentally sensitive areas. No known shipwrecks or other cultural resources occur in the vicinity of the LA sites. Overall, the seabed at the LA sites is non-dispersive, and sediments at the sites are expected to settle and remain offshore, with no impact expected to onshore areas.

The LA sites are not located within active oil or natural gas leases, and continued disposal operations are not anticipated to adversely impact existing nearby oil and gas development facilities for the foreseeable future. However, the BOEM oil and gas planning areas intersect with all three LA sites, and areas identified by BOEM as having oil and gas resource potential intersect with LA-2 and LA-3, therefore there it is possible that future exploration activities may occur in the vicinity of the LA sites. The LA sites do not currently intersect with offshore wind turbines or areas of ocean wave resource potential. However, there is potential for offshore wind or other renewable energy development in the coming decades. Therefore, management measures for the LA sites may need to be adjusted in the future to account for further quantities of material from port expansions to accommodate maintenance of offshore structures.

3 SITE MANAGEMENT

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

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

SMMP sections 3.1 through 3.10 summarize the disposal operation conditions that will be considered for management of the LA-2, LA-3, and LA-5 ODMDSs as described in 40 CFR 228.15(l)1-2,11. Enforceable conditions for dredged material disposal operations at the LA-2, LA-3, and LA-5 ODMDSs are drawn from USACE-issued

permits and transportation and dumping authorization documents for Federal projects. The conditions intended to be enforceable (see **Appendix B** for expected Site Use Conditions) are identified in this SMMP as necessary under MPRSA section 103(a) or 103(e) and should be included as conditions in EPA's concurrence if the permit or authorization documents do not already require such conditions.

The Standard Site Use Conditions in **Appendix B** are intended to be applicable to dredging projects permitted by USACE (Federal and non-federal) as well as to USACE-authorized Federal dredging projects, regardless of whether Government owned and operated dredging equipment or contracted equipment is used. EPA may determine not to include one or more of the conditions identified in **Appendix B**. EPA may also specify or confirm additional project-specific Site Use Conditions in its concurrence.

The Site Use Conditions and reporting requirements become enforceable when and as included in the disposal site designation regulation, in MPRSA section 103 permits, and in transportation and disposal-related authorizations for Federal projects, including USACE Federal contract documents or other Federal project specification documents.

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

3.1 Ocean Dumping Criteria Compliance Process

USACE uses the ocean dumping criteria when evaluating permit requests for (and implementing Federal projects involving) the transportation of dredged material for the purpose of dumping it into ocean waters. All disposal of dredged material in the ocean must comply with the ocean dumping criteria, and EPA reviews the demonstrations of compliance when reviewing permits and project authorizations for written concurrence, which may include conditions that must be incorporated into the permit or project authorization documents.

In the case of Federal navigation projects, USACE implements substantive MPRSA requirements directly in USACE projects involving transportation and ocean disposal of dredged materials, including through USACE contractors. Federal projects, though not required to have a permit, must adhere to the same criteria, factors to be evaluated, procedures, and requirements that apply to permits, including the process for evaluation

of the project. Federal projects must receive EPA's concurrence prior to authorization of transportation and disposal of dredged materials, and authorizing documents must contain any conditions included in EPA's concurrence (see **Appendix B** for expected Site Use Conditions). EPA and USACE will coordinate early in the contracting process so the USACE can incorporate any EPA concurrence conditions into project authorization documents.

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

3.2 DREDGED MATERIAL CHARACTERIZATION

Prior to any disposal of dredged material at the LA-2, LA-3, and LA-5 ODMDSs, EPA and USACE must evaluate the project applying the ocean dumping criteria (40 CFR Part 227) and USACE must specifically authorize the disposal under MPRSA section 103. It is important that EPA and USACE agree on the sampling and analysis plan for each project *prior* to any sampling of proposed dredged material.

Guidance for a process to determine the suitability of dredged material proposed for disposal at the LA-2, LA-3, and LA-5 ODMDSs is described in the Ocean Testing Manual, sometimes referred to as the Green Book (EPA/USACE, 1991).

Steps include:

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

Additional reviews by stakeholders including the public, States, and other Federal Agencies would also be conducted through the USACE permitting or authorization processes.

Only material which USACE and EPA have determined to be suitable and in compliance with the Ocean Dumping Criteria (40 CFR Part 227) may be considered for transportation and disposal at the LA-2, LA-3, and LA-5 ODMDSs. No disposal activities may occur at the sites until EPA reviews the testing data results and transmits its written concurrence that the material is acceptable for disposal at the sites.

Additional information describing the types of material disposed at the sites (source location, sediment type, etc.) are discussed in Section 2.3 of this document.

3.3 Ensuring the Origin of Material During Dredging

Pre-Construction/Pre-Dredging Meeting: If requested by EPA or USACE, the permittee should organize a pre-construction meeting (which may be virtual) to include EPA, personnel from the permittee's organization, and personnel from the prime dredging Contractor and from any subcontractor involved in transporting the disposal vessels to the ODMDS. The purpose of the meeting is to ensure that Contractor(s) have received and understand EPA's ocean disposal Site Use Conditions attached to the project concurrence or authorization (see **Appendix B** for expected language).

***Dredging Operations Plan*:** A dredging operations plan (DOP) is a plan that outlines the methods and schedule for conducting dredging activities. The DOP should be sent to EPA for review and approval following EPA ocean disposal concurrence prior to commencement of dredging. After EPA approval of the DOP, any deviations from the original DOP should be sent to EPA for approval. The elements and timelines that are expected in the DOP are outlined in the complete set of Site Use Conditions in **Appendix B** and include SOPs and BMPs for ensuring only authorized material is dredged.

Preventing Disposal of Uncharacterized Material, Unsuitable Material, Trash, and Debris; Use of Grizzly: In order to exclude large trash and debris from being disposed at the sites, all excavated dredged material loads should be placed into scows through a steel mesh or chain "grizzly" with openings of no more than 12 inches by 12 inches. Material retained on the grizzly should be removed and disposed of separately at an appropriate location and should not be disposed of at the ocean disposal sites.

Dredging Footprint Documentation: To ensure that only authorized material is disposed at the ODMDS, the project is expected to have a system that documents the specific location from which dredged material transported for ocean disposal was

removed. The permittee should compile and submit the records to EPA on a monthly basis.

3.4 DREDGED MATERIAL TRANSPORTATION

Scow Certification Form: The permittee should submit a Scow Certification form to EPA and USACE for review and approval prior to the commencement of any ocean disposal operations to document items including estimated bin volume of material loaded, location from which the material was dredged, the marine weather forecast, and the details of the disposal location and timing. For each disposal trip, both the permittee and an independent quality control inspector should certify in writing that the vessel is not over-loaded, and otherwise meets the requirements of the Scow Certification form. The permittee should compile and submit these records to EPA on a monthly basis. The permittee (or prime dredging contractor) should also have an appropriate communications hierarchy and protocols in place to provide the quality control inspector with the authority to ensure that the Site Use Conditions pertinent to the scow are met and to prevent the scow from departing for a disposal trip if they are not fulfilled.

Preventing Leaking or Spilling: The permittee should ensure that dredged material is not leaked or spilled from disposal vessels while stationary or during transit to the LA-2, LA-3, and LA-5 sites. Transportation of dredged material to any of these sites should only be allowed when weather and sea state conditions will not interfere with safe transportation and will not create risk of spillage, leaking, or other loss of dredged material during transit. Disposal vessels should not be loaded beyond a level at which dredged material would be expected to be spilled in transit under anticipated sea state conditions (e.g., should be filled to less than 80%; more restrictive load limits may be implemented for a specific project). No disposal vessel trips should be initiated when the National Weather Service has issued a gale warning for local waters during the time period necessary to complete dumping operations, or when wave heights are 16 feet or greater.

3.5 DISPOSAL LOCATIONS AND TIMES

The regulation at 40 CFR 227.28 requires that the release of dredged material into the ODMDSs occur at least 330 feet (100 meters) inside ODMDS boundaries.

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

When discharging dredged material within the LA-2, LA-3, or LA-5 ODMDSs, no portion of the disposal vessel from which the materials are to be released should be further than 305 m (1,000 ft) from the center of the disposal sites unless specified by a project-specific Site Use Condition. The center coordinates of the ODMDSs (Table 2-1) are also the center coordinates of the SDZ. No more than one disposal vessel should be present within the SDZ at any time.

There are no restrictions on disposal times, however such restrictions may be implemented on a project-specific basis.

3.6 DISPOSAL VESSEL TRACKING

Disposal Vessel Instrumentation and Tracking: The primary tracking system for recording ocean disposal operations and ensuring that no material is released outside of the ODMDS SDZ should be disposal vessel-based. Each disposal vessel should have a primary navigation/tracking system functioning during the time of loading of dredged material onto the disposal vessel through the return transportation of the vessel from each disposal trip to the dredging site. No material should be loaded into the disposal vessel, and no trip should be initiated, without a functioning primary navigation/tracking system. This system should record information including vessel positioning, speed, heading, draft, and the location and timing of the disposal event. The permittee should compile and submit these records to EPA on a monthly basis.

Back-Up Navigation System: If the primary disposal vessel tracking system fails during transit, the navigation system on the pushing or towing vessel, meeting the minimum accuracy requirements listed above, may be used to complete that disposal trip by maneuvering the pushing or towing vessel so that, given the compass heading and any tow cable length to the scow, the estimated scow position would be within the SDZ. In such cases the pushing or towing vessel’s position, any tow cable length, and the compass heading to the disposal vessel should be recorded and reported on

the Scow Certification form.

If the draft sensor for the primary disposal vessel tracking system fails while the disposal vessel is stationary, loading of the disposal vessel should cease until capabilities are restored. If only the GPS tracking fails, then EPA and USACE should be informed of the coordinates at which the disposal vessel is stationed, and the draft should continue to be recorded and posted in accordance with the vessel disposal tracking data posting (described below). However, transit should not occur until full primary tracking capabilities are restored.

3.7 DISPOSAL REPORTING

Posting Disposal Vessel Tracking Data on the Internet: Within 24 hours of the completion of each disposal trip, data recorded from the primary disposal tracking system should be posted by a third-party contractor to an internet site accessible by EPA and USACE, and any other entity specified by EPA or USACE in project-specific permits or authorizations. The records should include the disposal vessel transit routes, locations of disposal, estimated bin volume, and vessel speed and draft from the time of loading until completion of transit from the ODMDS.

Record-Keeping, and Monthly Reporting: In addition to posting disposal vessel tracking data on the internet, the permittee should collect and maintain daily records, including the approved and fully completed Scow Certification forms and dredging footprint documentation. All daily records should be compiled at a minimum for each month during which ocean disposal operations occur, and provided in reports, certified accurate by the dredging contractor and the permittee, to both EPA and USACE by the 15th day of the following month. The monthly reports should also include a cover letter summarizing the specific dredging units dredged during the month, the total estimated volume of material dredged during the month, any problems complying with the Site Use Conditions, any significant deviations from the anticipated project-specific Site Use Conditions, the cause(s) of the problems, any steps taken to rectify the problems, and whether the problems occurred again during dredging of suitable units or on subsequent disposal trips.

Project Completion Report: Within 60 days following the completion of ocean disposal operations, the permittee should submit to EPA Region 9 and the USACE Los Angeles District a project completion report. The project completion report should contain a cover letter summarizing the number of disposal trips and the overall disposal volumes (bin volumes as well as in-situ), any issues with complying

with the Site Use Conditions, and comparison of the pre- and post-dredging bathymetry of the dredging footprint and surrounding areas to show the depths achieved within the project, and how they correspond to the project depth.

3.8 Compliance Issue Reporting

E-Mail Alerts: Any degree of apparent dumping outside the SDZ of the ODMDS, or any apparent substantial leakage/spillage or other loss of material while stationary or during transport to the ODMDS should be tracked by the third-party tracking system and automatically reported via email to EPA and USACE within 24 hours.

24-Hour Notification for Potential Leaks, Mis-Dumps, and Dredging of Unsuitable or Uncharacterized Material: Any anticipated, potential, or actual variances from compliance with the Site Use Conditions should be reported to EPA and USACE within 24 hours of discovering such a situation. EPA and USACE should also be notified within 24 hours if any conditions arise that indicate that dredged material previously deemed suitable for ocean disposal by EPA may have unanticipated levels of constituents.

3.9 Additional Project-Specific Conditions

Additional project-specific Site Use Conditions or modifications to the Standard Site Use Conditions specified in Sections 3.3 – 3.8 may be required by EPA and USACE if they determine these conditions are necessary to facilitate safe use or accurate monitoring of the disposal site, or to prevent potential harm to the environment. These can include any conditions that EPA or USACE determine to be necessary or appropriate to facilitate compliance with the requirements of the MPRSA, such as timing of operations or methods of transportation and disposal.

3.10 Alternative Site Use/Project Conditions

Alternatives to these Standard Site Use Conditions described in Sections 3.3 – 3.8 may be authorized in advance if the permittee demonstrates to the satisfaction of EPA and USACE that the alternative Conditions are: sufficient to accomplish the specific intended purpose of the original Site Use Condition; will not increase the risk of harm to the environment or the health or safety of persons; and will not impede monitoring of compliance with the MPRSA, the ocean disposal regulations, or the project's permit or authorization.

4 SITE MONITORING

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

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

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

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

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

The monitoring program for the LA-2, LA-3, and LA-5 ODMDSs is designed to address the following questions:

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

This would include considerations such as:

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

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

This would include considerations such as:

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

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

4.1 Compliance Monitoring During a Project: the Origin, Transportation, and Disposal of Dredged Materials

Monitoring the origin of material is necessary to confirm that only material that has been tested in accordance with the Ocean Testing Manual, and approved for ocean disposal by EPA and USACE, may be disposed at the LA-2, LA-3, and LA-5 ODMDSs. Monitoring the origin, transportation, and disposal of dredged materials is necessary to confirm that the activities comply with all permit or authorization conditions and site restrictions. Monitoring the location and movement of disposed material at the sites should be used to ensure that disposed material remains within the designated site boundaries and to confirm that future site use will not exceed site capacity. Given the depths of the LA-2, LA-3, and LA-5 ODMDSs, creation of navigational hazards due to mounding is not a concern. Typical survey areas for the LA-2, LA-3, and LA-5 ODMDSs are included in Appendix A (Figure 7-1; Figure 7-2; Figure 7-).The typical monitoring activities used to achieve each of these management goals are summarized in Sections **4.1.1** – 4.1.3 and Table 4-1 below.

4.1.1 Monitoring the Origin of Dredged Material

As described in Sections 3.1-3.10, once a dredging project is approved and permitted (or authorized in the case of federal projects) for ocean disposal at one of the LA-2, LA-3, or LA-5 ODMDSs, a variety of compliance monitoring measures are included in the Section 103 Permit (or Federal authorization). Please refer to **Appendix B** for the expected set of Site Use Conditions. Example requirements that are in place to monitor the origin of dredged material disposed at the LA-2, LA-3, and LA-5 ODMDSs would include, but not be limited to, submission by the permittee of:

- A DOP that outlines project specifications, including the sequence of dredging, equipment used, SOPs material to prevent over-dredging, etc.;
- Dredge footprint tracking reports, demonstrating only characterized and suitable material is dredged and disposed;
- Notifications within 24 hours for compliance issues (including for issues with material origin); and
- Reports, including monthly reports and a project completion report.

4.1.2 Monitoring Dredged Material Transportation and Disposal

As described in Sections 3.1-3.10, once a dredging project is approved and permitted (or authorized in the case of Federal projects) for ocean disposal at one of the LA-2, LA-3, or LA-5 ODMDSs, a variety of compliance monitoring measures are included in the Section 103 Permit (or Federal authorization). Please refer to **Appendix B** for the complete set of Site Use Conditions. Example requirements in place monitor the transportation and disposal of at the LA-2, LA-3, and LA-5 ODMDSs would include, but not be limited to:

- Forms certifying that the scow is not overloaded, the sea-state is acceptable for transport, and tracking systems are functional;
- Satellite tracking of all disposal vessels to ensure that disposal activities occur only where and as authorized;
- Sensors on all disposal vessels to ensure no significant leakage or spilling of dredged material occurs during loading or transit to the ODMDS, especially during transit through the nearshore zone where corals, seagrasses, and sensitive animals are most likely to be present;
- Tracking and sensor information reported online within 24 hours for each disposal trip (see Figure 7-4 for a visual example of tracking reported)
- Notifications within 24 hours for compliance issues (including of leaks or mis-dumps); and
- Reports, including monthly reports and a project completion report.

4.1.3 Monitoring Site Capacity

The LA-2, LA-3, and LA-5 ODMDSs are in deep water where the accumulation of dredged material is never anticipated to become a navigational hazard. No unacceptable adverse impacts from previous disposal have been identified through site monitoring conducted to date, and significant adverse effects are not expected in the future based on current sediment quality acceptability and compliance monitoring. Therefore, it is anticipated that use of the LA-2, LA-3, and LA-5 ODMDSs can continue indefinitely, according to the annual maximum disposal limits outlined in the FEISs: The maximum annual dredged material disposal quantity for the LA-2 site is 1,000,000 yd^3 (765,000 m^3) (FR Vol. 70, No. 175, 2005); the maximum annual dredged material disposal quantity for LA-3 ODMDS is 2,500,000 yd^3 (FR Vol. 70, No. 175, 2005); the

LA-5 FEIS for site designation evaluated potential site capacity and predicted no significant adverse environmental impacts below 700,000 yd^3 per year (EPA, 1987b).

It is possible that future dredging projects may generate material volumes exceeding the annual capacities for any of the LA ODMDSs. For example, deep draft dredging projects may generate millions of cubic yards of dredged material. In such cases, EPA may deem it necessary to employ further management measures to reduce potential impacts to the ODMDSs and may require further monitoring to ensure that any short-term impacts do not extend beyond the ODMDSs.

Table 4-1. Summary of activities to monitor the origin, transportation, disposal, and fate of disposed material and thresholds for action at the LA-2, LA-3, and LA-5 ODMDSs.

Management Goal	Monitoring Activity	Responsible Entity	Purpose	Frequency	Threshold for Action	If Threshold Not Exceeded	If Threshold Exceeded
Only authorized material is dredged and disposed of at the LA-2, LA-3, and LA-5 ODMDSs.	DOP, dredge footprint report, monthly reports, project completion report, e-mail alerts and 24-hour notification for any leaks, misdumps, issues with material origin .	Site User	Ensure there are no adverse impacts to the marine environment from disposal of unauthorized material at the LA-2, LA-3, and LA-5 ODMDSs.	DOP provided prior to project initiation; monthly reports and dredge footprint tracking provided monthly; project completion report provided 60 days following the project completion date to EPA.	Records required by the 103 concurrence conditions are not submitted or are incomplete.	Continue compliance monitoring.	Site use may be restricted until requirements outlined in the 103 concurrence conditions are met.
					Review of records indicates dredging of unsuitable or uncharacterized material.	Continue compliance monitoring.	Permittee should: • Notify EPA R9 & USACE. 24-hour notice should be given to EPA R9 & USACE; • Investigate why non-compliance occurred; and • Rectify the issue before a subsequent disposal trip. EPA & USACE to enact corrective actions or take appropriate enforcement action.
No material is leaked or mis-dumped outside of the SDZ of the LA-2, LA-3, and LA-5 ODMDSs.	Scow certification forms, satellite tracking of disposal vessel location, speed, and draft, monthly reports, project completion report, e-mail alerts and 24-hour notification for any leaks, misdumps, issues with material origin .	Site User	Ensure that there are no adverse impacts to the marine environment from disposal of material outside of the SDZ of the LA-2, LA-3, and LA-5 ODMDSs.	Satellite tracking reports uploaded online daily; monthly reports and scow certification forms provided monthly; project completion report provided 60 days following the project completion date to EPA.	Records required by the 103 concurrence conditions are not submitted or are incomplete.	Continue compliance monitoring.	Site use may be restricted until requirements outlined in the 103 concurrence conditions are met.
					Review of records indicates disposal outside ODMDS boundary, excessive leakage on route to disposal, or other mis-dumping.	Continue compliance monitoring.	Permittee should: • Notify EPA R9 & USACE. 24-hour notice should be given to EPA R9 & USACE; • Investigate why non-compliance occurred; and • Rectify the issue before a subsequent disposal trip. EPA & USACE to enact corrective actions or take appropriate enforcement action.

4.2 MONITORING ENVIRONMENTAL EFFECTS OF DISPOSED MATERIAL

Monitoring of impacts to the physical, chemical, and biological environment is necessary to ensure that the transport and disposal of dredged material does not result in unreasonable degradation to the marine environment or endanger human health, welfare, or economic potentialities.

The environmental effects monitoring plan for the LA-2, LA-3, and LA-5 ODMDSs summarized in Table 4-3 below is structured as a tiered monitoring approach; unacceptable conditions discovered during a lower tier assessment should trigger additional testing or other management action.

USACE and EPA periodically assess environmental conditions of the entire site and surrounding area and consider other environmental data that may have been collected by other entities in the area; this information is then used to assess overall site conditions and to conduct trend assessments. It is important that no external activities (e.g., spills, disposal under a different permit or authorization, etc.) affect the areas surrounding each ODMDS, as these areas are used to assess the impact of dredged material on the ODMDSs and surrounding environment. Typical survey areas for the LA-2, LA-3, and LA-5 ODMDSs are included in **Appendix A** (Figure 7-1; Figure 7-2; Figure 7-).

Enhanced environmental effects monitoring should be triggered if disposed material is found to have unexpectedly left the sites or is observed in unexpected locations during the transportation, disposal, and monitoring activities described in Section 4.1 or the fate monitoring activities described in this section. Any monitoring at the sites that identifies an issue of potential concern should trigger additional monitoring or management actions.

4.2.1 Dredged Material Footprint (Tier 1)

Monitoring the fate of disposed materials during periodic site monitoring involves mapping the physical footprint of dredged material deposition within and surrounding the ODMDS boundaries. The “footprint map” has several valuable purposes, including:

- ***Confirming that deposition of dredged material is occurring as predicted*:** Material disposed properly within the SDZ is expected to deposit primarily within the ODMDS boundary. Significant deposits outside the ODMDS boundary may indicate mis-dumping, or that oceanographic conditions at the ODMDS are different than expected. Mis-dumping would predominantly be identified by disposal vessel tracking and addressed as a project-specific enforcement matter. However, if oceanographic conditions

are causing dredged material to deposit in an unexpected area, site management action may be needed.

- ***Identifying locations for potential subsequent chemical and biological sampling*:** Tier II monitoring involves comparing the chemical and biological characteristics of sediment samples collected within the dredged material footprint to those collected outside the footprint. Therefore, footprint mapping is conducted prior to Tier II sample collection, in order to inform appropriate sample locations.
- ***Long-term physical trend assessment**:* Footprint maps compiled over multiple site monitoring surveys can be compared to help assess ODMDS performance over time. Such maps can help identify the need for potential long-term management actions well before unacceptable impacts may occur. Examples of management actions may include expanding ODMDS boundaries or moving the location of the SDZ.

Different tools and approaches may be used to conduct successful footprint mapping surveys. For the relatively deep water in which the LA-2, LA-3, and LA-5 ODMDSs are located, some tools are more useful for identifying dredged material deposits, while other tools are more useful for identifying other kinds of features on the seafloor such as reef outcroppings, etc. The choice of appropriate method(s) will be based on the focus of the individual survey and the degree of information already available from previous mapping surveys, if any. Footprint mapping surveys may include one or more of the following:

Sediment Profile Imaging (SPI) surveys. This method is the most commonly used to map the thickness of dredged material across the LA-2, LA-3, and LA-5 ODMDSs. It combines both plan view and cross- sectional photographs of the surface sediments. Unlike the footprint mapping survey tools described below, the high-resolution cross-sectional SPI photographs can distinguish dredged material layers as thin as a few millimeters, and up to about 20 centimeters. It can also often distinguish recently deposited material from previous years' deposits. Therefore, it is an appropriate tool for identifying the extent of the dredged material footprint. In addition to mapping dredged material presence and absence at a sampling station, SPI images can also provide a preliminary assessment of benthic community and benthic habitat quality, by identifying parameters such as the depth of the biologically mixed zone and the relative stage of benthic organism recolonization of the sediment.

Multibeam bathymetric surveys. In recent years multibeam surveys have been employed successfully at several ODMDSs in Region 9. High-resolution multibeam bathymetric surveys are useful for mapping bottom features such as reef outcrops and for identifying dredged material deposits based on backscatter. Multibeam surveys also provide detailed depth information about the seafloor and are generally more accurate as to geographic location of identified features than side-scan surveys because the instruments are mounted directly to the survey vessel's hull and the collected data is synchronized with the ship's GPS system. However, at the depth range of the LA-2, LA-3, and LA-5 ODMDSs, multibeam-collected depth information, while accurate to a meter or less, would not be as useful for detecting thinner dredged material deposits at the edges of the dredged material footprint.

4.2.2 Environmental Effects Monitoring (Tier II)

Evaluating environmental effects is the next priority after establishing the dredged material footprint. This monitoring objective generally involves retrieving sediment samples from numerous locations in and around the ODMDS and analyzing the samples in the laboratory for physical and chemical parameters, as well as for benthic community analysis if funds allow or if warranted, as described below. Using information from the footprint mapping survey, care is taken to collect samples representative of both dredged material that has deposited at the ODMDS ("onsite" or "footprint" samples), and native sediment unaffected by dredged material ("offsite" samples) for comparison.

Various physical and chemical analyses may be appropriate depending on the ODMDS, its history, and the management issues to be addressed. However, sediment samples for both dredged material evaluation and site monitoring are typically analyzed for physical parameters such as grain size, conventional chemical parameters such as organic carbon content, and a suite of potential pollutants including heavy metals, organotins, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, and dioxin-like compounds (Table 7-2). The analysis may also capture additional emerging contaminants of concern.

The results of physical and chemical analyses of onsite and offsite sediments, including any reference site sediments, are evaluated to determine whether:

- ***ODMDS ("Onsite" or "footprint") sediment chemistry levels are more elevated than expected in comparison to the pre- disposal testing chemistry profile of sediments approved for ocean disposal:*** The chemistry results from ODMDS or "footprint" samples helps confirm whether

the pre- disposal testing program is adequately regulating the quality of material permitted to be disposed at the ODMDS. If results indicate that the chemistry appears to be significantly higher than expected, then adjustments to dredged material evaluation procedures may potentially be considered, including higher resolution sampling and analysis. Additionally, directed, specific contaminant monitoring or further testing through Tier III may be necessary to define the extent of management action required.

- ***"Offsite," nearby sediments are significantly more contaminated than baseline conditions or previously monitored conditions:*** The chemistry results from "offsite" samples indicates whether contaminants in dredged material disposed at the ODMDS are having potential impacts outside the ODMDS boundary. In such a case, analysis of benthic community samples may be triggered. Potential changes to site management measures may also be evaluated, including adjustments to the SDZ.

In practice, EPA often collects and preserves benthic community samples during sediment physical and chemistry sampling. However, processing and analysis of benthic community samples may not necessarily occur unless triggered as described above. If triggered, benthic community monitoring involves comparison of the benthic infaunal community inside versus outside the ODMDS. Since some differences are normal and expected – caused by localized physical disturbance from dredged material deposition, textural differences between the native sediments and the dredged material, depth, or other environmental parameters - analysis of benthic community samples is not always triggered unless the monitoring of the dredged material fate or of the sediment physical and chemical analysis indicates that there may be significant or long-term impacts to the environment outside of the ODMDS.

4.2.3 Advanced Environmental Effects Monitoring (Tier III)

Advanced environmental effects monitoring is triggered if sediment quality and benthic community appear to be significantly degraded within the ODMDS, or if there appear to be significant impacts outside the ODMDS. This tier of monitoring consists of collecting sediment grabs from locations where impacts have been detected through the prior tiers of testing, as well as in reference areas. Sediments will then be used to conduct acute toxicology bioassays and tissue bioaccumulation testing in the laboratory, according to the procedures and organisms outlined in the OTM (1991).

4.2.4 Reference Sites

To assess potential environmental impacts from dredged material disposal, reference site sediments are be used as a point for comparison for chemicals of concern, acute toxicity of the dredged material, the magnitude of bioaccumulation, and potential ecological impacts at the disposal sites.

EPA has selected the locations listed in Table 4-2 as reference sites for LA-2, LA-3, and LA-5 ODMDSs.

Table 4-2. Reference site coordinates for the LA-2, LA-3, and LA-5 ODMDSs as identified in the EIS's and updated to WGS84 (EPA, 1987a; EPA, 1987b; EPA and USACE, 2005).

	Reference Site Coordinates (Degrees Minutes Seconds)		Reference Site Coordinates (Decimal Degrees) (WGS84)	
Disposal Site	**Latitude**	**Longitude**	**Latitude**	**Longitude**
LA-2 (Los Angeles/ Long Beach)	33° 34' 08" N (NAD 83)	118° 11' 43" W (NAD 83)	33.5689	-118.1953
LA-3 (Newport Beach)	33° 31' 41.88" N (NAD 83)	117° 51' 14.82" W (NAD 83)	33.5283	-117.8541
LA-5 (San Diego)	32° 34' 44" N (NAD 27)	117° 19' 17" W (NAD 27)	32.5789	-117.3214

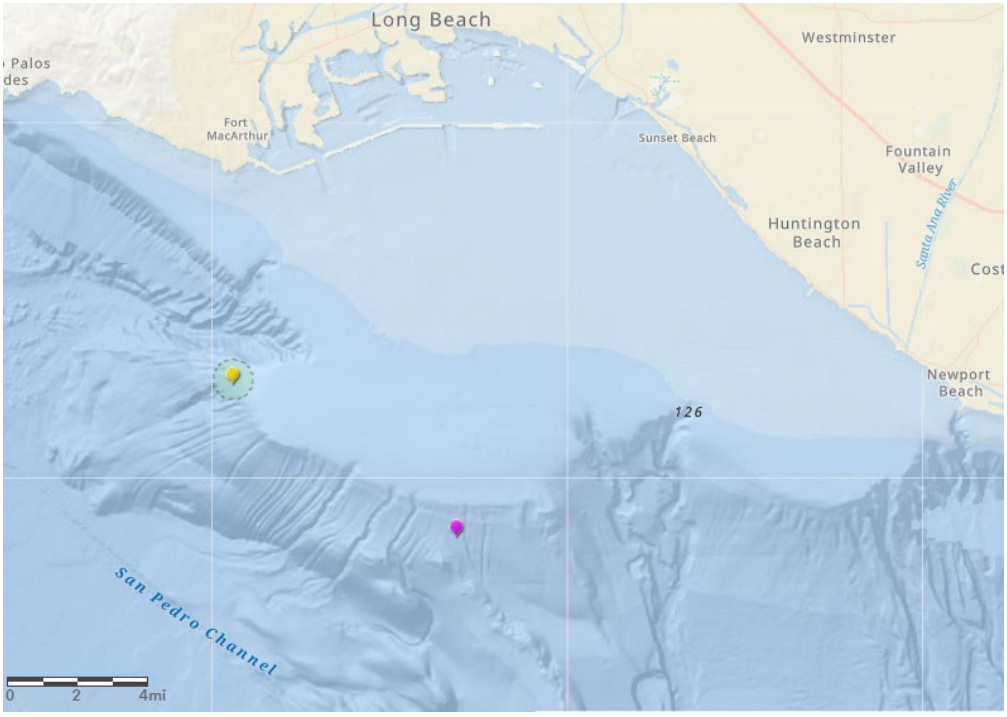

Figure 4-1. Location of the LA-2 ODMDS (green circle with yellow pin) and its reference site (purple pin).

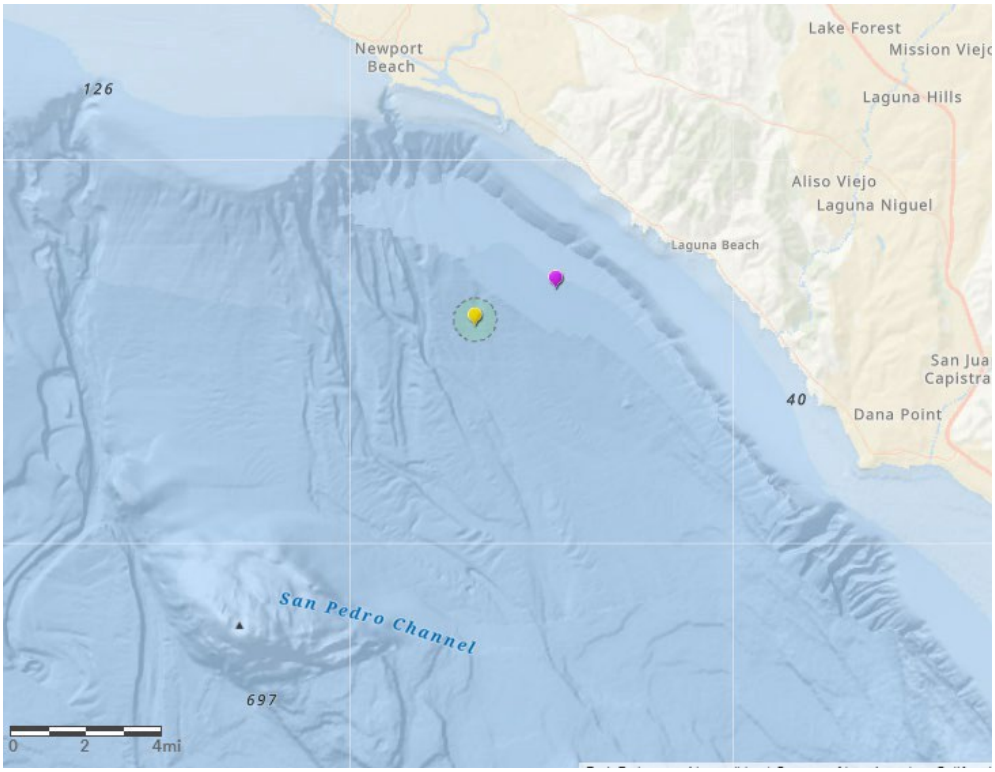

Figure 4-2. Location of the LA-3 ODMDS (green circle with yellow pin) and its reference site (purple pin).

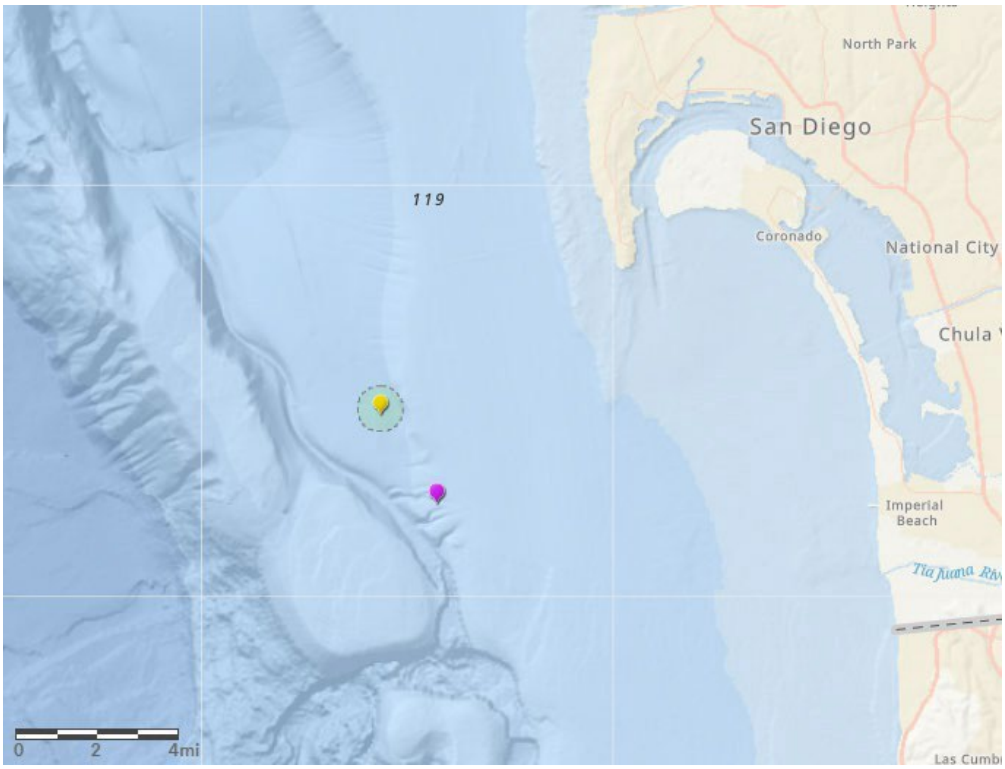

Figure 4-3. Location of the LA-5 ODMDS (green circle with yellow pin) and its reference site (purple pin).

Table 4-3. Environmental impacts monitoring activities and thresholds for action at the LA-2, LA-3, and LA-5 ODMDSs.

Frequency	Responsible entity	Monitoring Activity	Purpose	Threshold(s) for Action	If Threshold Not Exceeded	If Threshold Exceeded
Tier I: Dredged Material Footprint and Habitat Mapping						
Approximately every 10 years	EPA	Sediment mapping (generally SPI; multi-beam surveys may be conducted if needed or if funds allow). Preliminary assessment of benthic community and habitat quality.	Determine extent of dredged material. Evaluate health of the benthic community and habitat through SPI parameters.	Presence of >5cm of non-historic dredged material outside of ODMDS boundaries. Indication of significant or long-term impacts to the benthic community and habitat outside of the ODMDS boundaries.	Continue monitoring on prescribed schedule.	• Conduct Tier II Monitoring. • Review and potentially alter site management measures.
Tier II: Environmental Effects Monitoring						
Implement if disposal footprint extends beyond the site boundaries, or as funding allows.	EPA	Sediment grain size and chemistry (sediment grabs). Collect and analyze benthic community samples as funds allow.	Determine if sediment chemical contaminants are significantly elevated within, and outside of, site boundaries. Evaluate benthic community parameters.	Contaminants are found to be elevated in dredged sediments. Progressive, non-seasonal, long-term changes in sediment quality. Indication of significant or long-term impacts to the benthic community outside of the ODMDS boundaries.	Discontinue specific event monitoring.	• Conduct directed, specific contaminant monitoring to define extent of management action required. • Perform biological testing on ODMDS samples (Tier III). • Review and potentially alter dredged material evaluation procedures. • Review and potentially alter site management measures.
Tier III: Advanced Environmental Effects Monitoring						
Implement if sediment quality and benthic community appear to be significantly degraded within the ODMDS, or if potential impacts outside the ODMDS, or if funding allows.	EPA	Acute toxicology bioassays and tissue bioaccumulation testing (sediment grabs).	Determine whether there are adverse changes in the benthic community outside of the ODMDS as the result of disposal operations.	Adverse changes observed to the benthic community outside of the site that may endanger the marine environment.	Discontinue specific event monitoring.	• Review and potentially alter dredged material evaluation procedures. • Review and potentially alter site management measures. • Consider restricting site use or potentially discontinuing/de-designating the site.

5 MODIFICATION OF THIS SMMP

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

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

6 REFERENCES

Chambers Group, 2001. Data Analysis of the Sediment and Biological Baseline Survey at LA-3 and LA-2 for Dredged Material Ocean Disposal Site Designation, November 2001. Draft report. Prepared for U.S. Army Corps of Engineers, Los Angeles District.

Federal Register, 1991. Ocean Dumping; Designation of Site, February 2005. Rules and Regulations, Vol. 56, No. 33.

Federal Register, 2005. Ocean Dumping: LA-3 Ocean Dredged Material Disposal Site Designation, September 2005. Rules and Regulations, Vol. 70, No. 175.

Gardner, J.V., P. Dartnell, and M.E. Torresan, 1998a. LA-2 Ocean Dredged Material Disposal Site and Surrounding Area, Long Beach, California: Bathymetry, Backscatter, and Volumes of Disposal Materials. United States Department of the Interior, U.S. Geological Survey, Admin. Report, July 1998.

Gardner, J.V., P. Dartnell, and M.E. Torresan, 1998b. LA-3 Ocean Dredged Material Disposal Site and Surrounding Area, Newport Beach, California: Bathymetry, Backscatter, and Volumes of Disposal Materials. United States Department of the Interior, U.S. Geological Survey, Admin. Report, October 1998.

Gardner, J., 1999. Multibeam Survey of LA-3 Ocean Dredged Material Disposal Site. December 13, through December 18, 1999, Newport Beach, California. Administrative Report to US Army Corps of Engineers, January. 2000. U.S. Geological Survey, Menlo Park, CA 94025.

Interstate Electronics Corporation, 1982. Appendices to Los Angeles/Long Beach, California, Ocean Dredged Material Disposal Site Designation. Interstate Electronics Corporation. Oceanic Engineering Operations-Anaheim, California. Prepared for U.S. EPA.

Los Angeles County Sanitation Districts, 2000. Annual Report 2000: Palos Verdes Ocean Monitoring.

MITECH, 1990. Draft Environmental Impact Statement for LA-3 Dredged Material Ocean Disposal Site Designation. January 1990. MITECH, Santa Ana, CA. Prepared for the U.S. Army Corps of Engineers.

National Oceanic and Atmospheric Administration, 2008. Sediment Quick Reference Tables (SQuiRT), NOAA OR&R Report 08-1, Office of Response and Restoration Division, Seattle, WA.

Science Applications International Corporation, 2000. Strategic Process Study: Newport Canyon Sediments, Tier 1 Assessment. Draft Final Report, Feb. 2000. Prepared for Orange County Sanitation District.

Tetra Tech and MBC Applied Environmental Sciences, 1985. Environmental Assessment for Final Designation of LA 2 Ocean Dredge Material Disposal Site. Prepared for U.S. Army Corps of Engineers, Los Angeles District.

U.S. Army Corps of Engineers, 2002. Final Report. Summer Sediment and Biological Baseline Survey within LA-3 and LA-2 Study Areas for Dredged Material Ocean Disposal Site Designation, January 2002.

U.S. Army Corps of Engineers, 2022. Ocean Dredged Material Disposal Site Database. Obtained from https://odd.el.erdc.dren.mil/ on July 19, 2023.

U.S. Environmental Protection Agency, 1987a. Environmental Impact Statement for Los Angeles/Long Beach (LA-2) Ocean Dredged Material Disposal Site: Site Designation, October 1987.

U.S. Environmental Protection Agency, 1987b. Environmental Impact Statement for San Diego (LA-5) Ocean Dredged Material Disposal Site: Site Designation, October 1987.

U.S. Environmental Protection Agency, 1991. Ocean Dumping; Designation of Site, Final Rule for San Diego (LA-5), January 1991.

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

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

U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 2005. Final Environmental Impact Statement for Site Designation of the LA-3 Ocean Dredged Material Disposal Site off Newport Bay, Orange County, California, July 2005. Prepared by the U.S. Environmental Protection Agency, Region 9 and the U.S. Army Corps of Engineers, Los Angeles District.

U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 2011. Site Management and Monitoring Plan for Three Southern California Ocean Dredged Material Disposal Sites: LA-2, LA-3, and LA-5, January 2011. Prepared by the U.S. Environmental Protection Agency, Region 9 and the U.S. Army Corps of Engineers, Los Angeles District.

7 APPENDIX A – SITE DESCRIPTION

Table 7-1. Disposal volumes (yd3) at the LA-2, LA-3, and LA-5 ODMDSs from 1976 to 2021, as reported in the USACE Ocean Disposal Database (USACE, 2022).

Year	LA-2	LA-3	LA-5	Total (All ODMDSs)
1991	30,000	0	38,900	68,900
1992	115,000	0	13,600	128,600
1993	604,400	0	265,200	869,600
1994	0	0	0	0
1995	0	0	294,700	294,700
1996	28,800	0	106,100	134,900
1997	0	0	1,913,735	1,913,735
1998	206,800	0	7,522,200	7,729,000
1999	2,611,100	0	1,582,700	4,193,800
2000	51,200	0	109,300	160,500
2001	42,400	0	102,900	145,300
2002	0	0	503,500	503,500
2003	0	0	0	0
2004	0	0	0	0
2005	0	3,000	0	3,000
2006	0	89,700	55,000	144,700
2007	0	0	26,000	26,000
2008	0	265,000	50,754	315,754
2009	280,500	176,200	0	456,700
2010	20,178	416,000	0	436,178
2011	0	0	0	0
2012	27,790	490,350	0	518,140
2013	0	63,919	0	63,919
2014	77,000	0	50,754	127,754
2015	613,000	2,796	0	615,796
2016	0	8,579	611,038	619,617
2017	13,162	1,800	22,727	37,689
2018	10,375	30,287	0	40,662
2019	119,100	5,042	19,259	143,401
2020	673,250	1,637	160,000	834,887
2021	503,605	57,000	0	560,605
2022	31,000	0	41,000	72,000
Total (Overall)	6,058,660	1,611,310	13,489,367	21,159,337
Average/year (Overall)	189,333	50,353	421,543	661,229
Total (2000-2022)	2,462,560	1,611,310	1,752,232	5,826,102
Average/year (2000-2022)	107,068	70,057	76,184	253,309

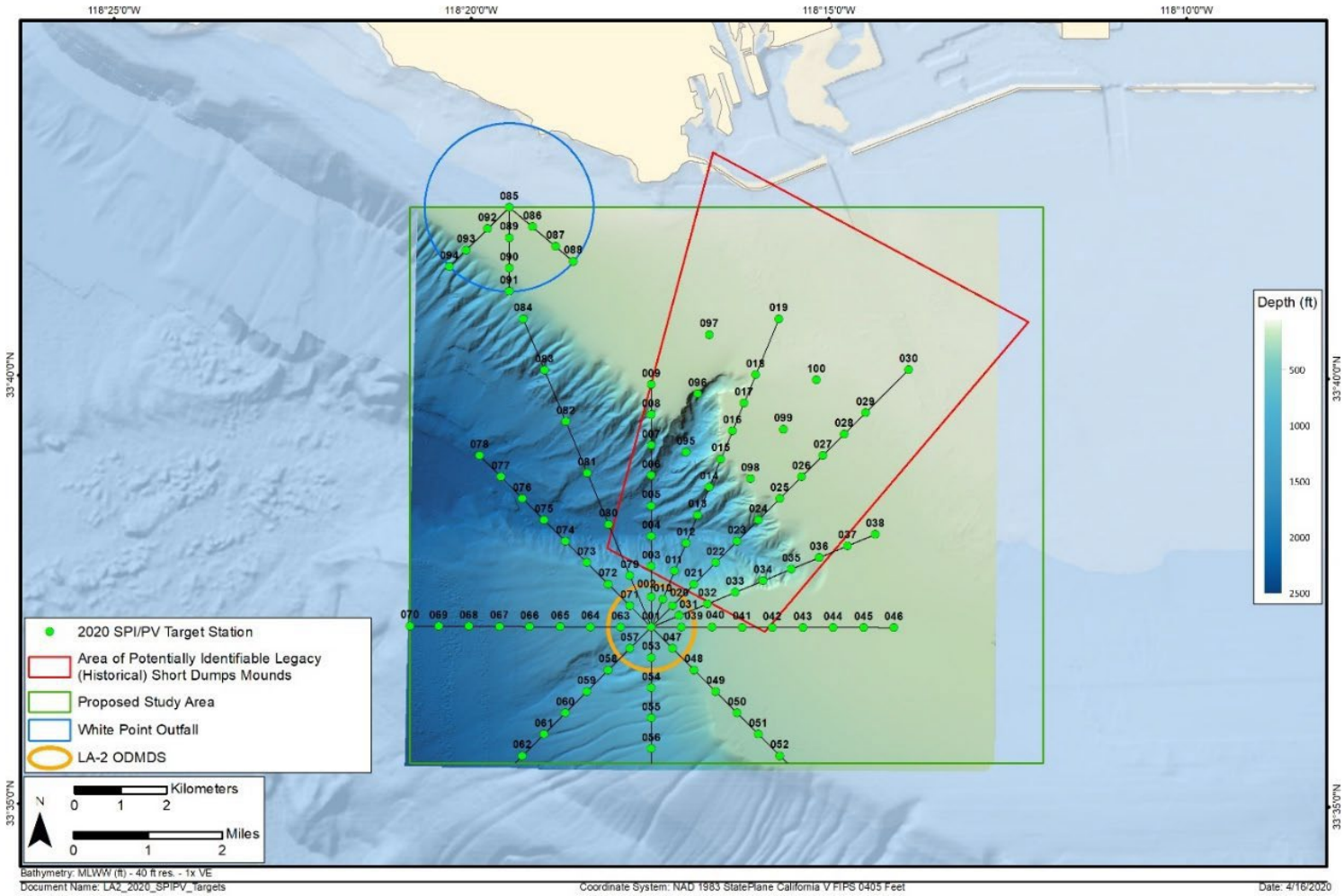

Figure 7-1. Typical LA-2 ODMDS survey area (stations from the 2020 survey).

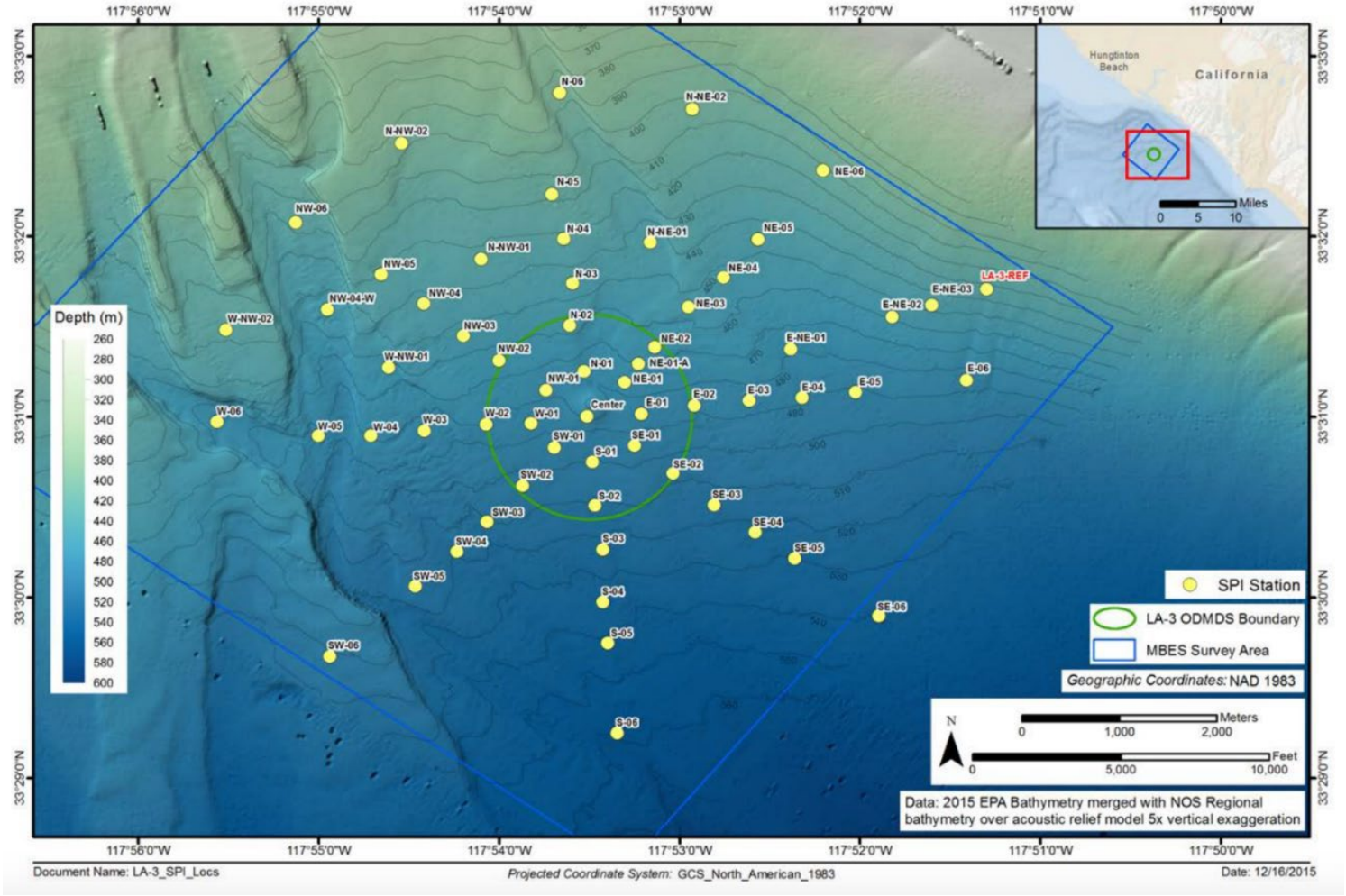

Figure 7-2. Typical LA-3 ODMDS survey area (stations from the 2015 survey)

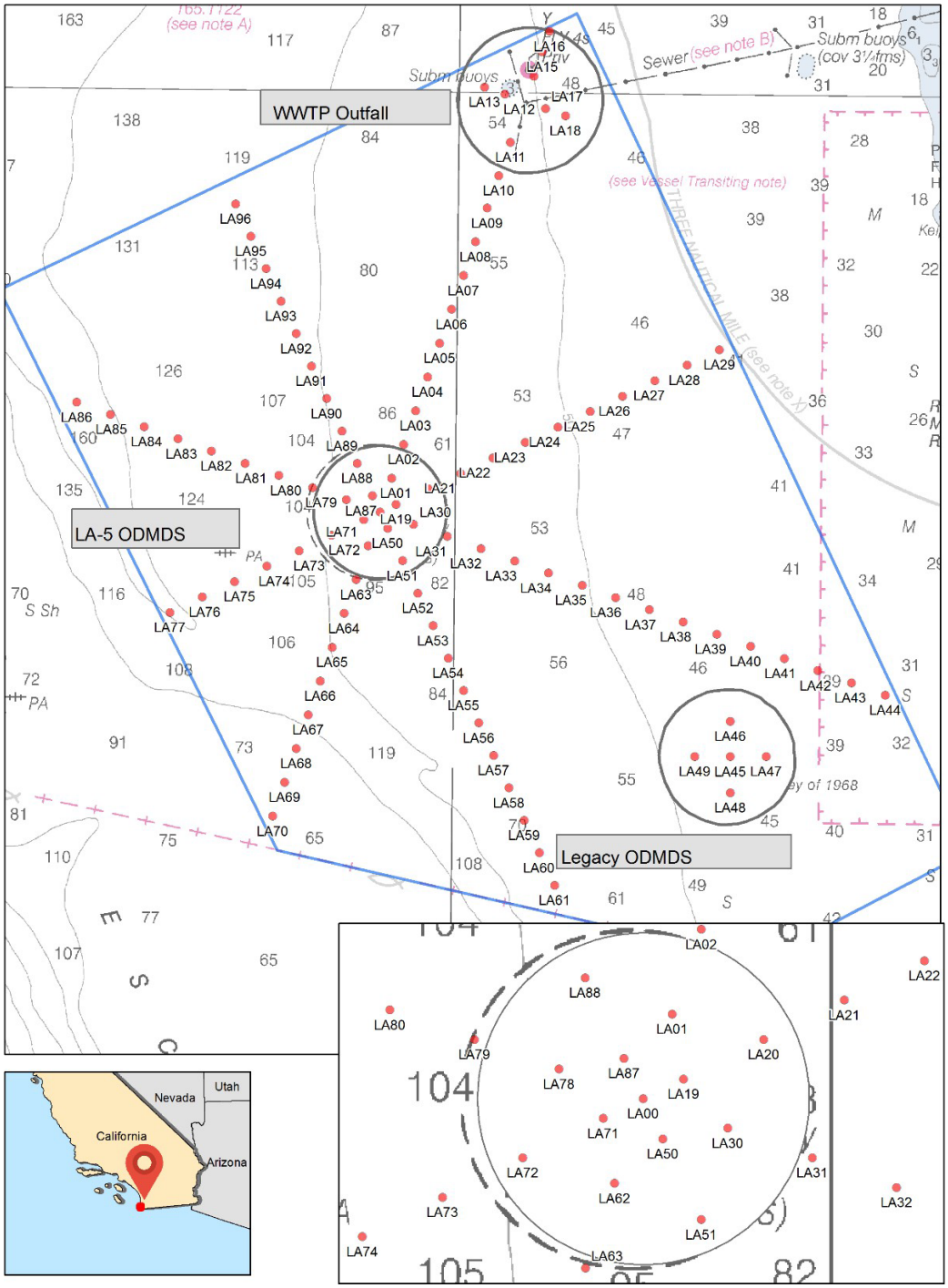

Figure 7-3. Typical LA-5 ODMDS survey area (stations from the 2018 survey).

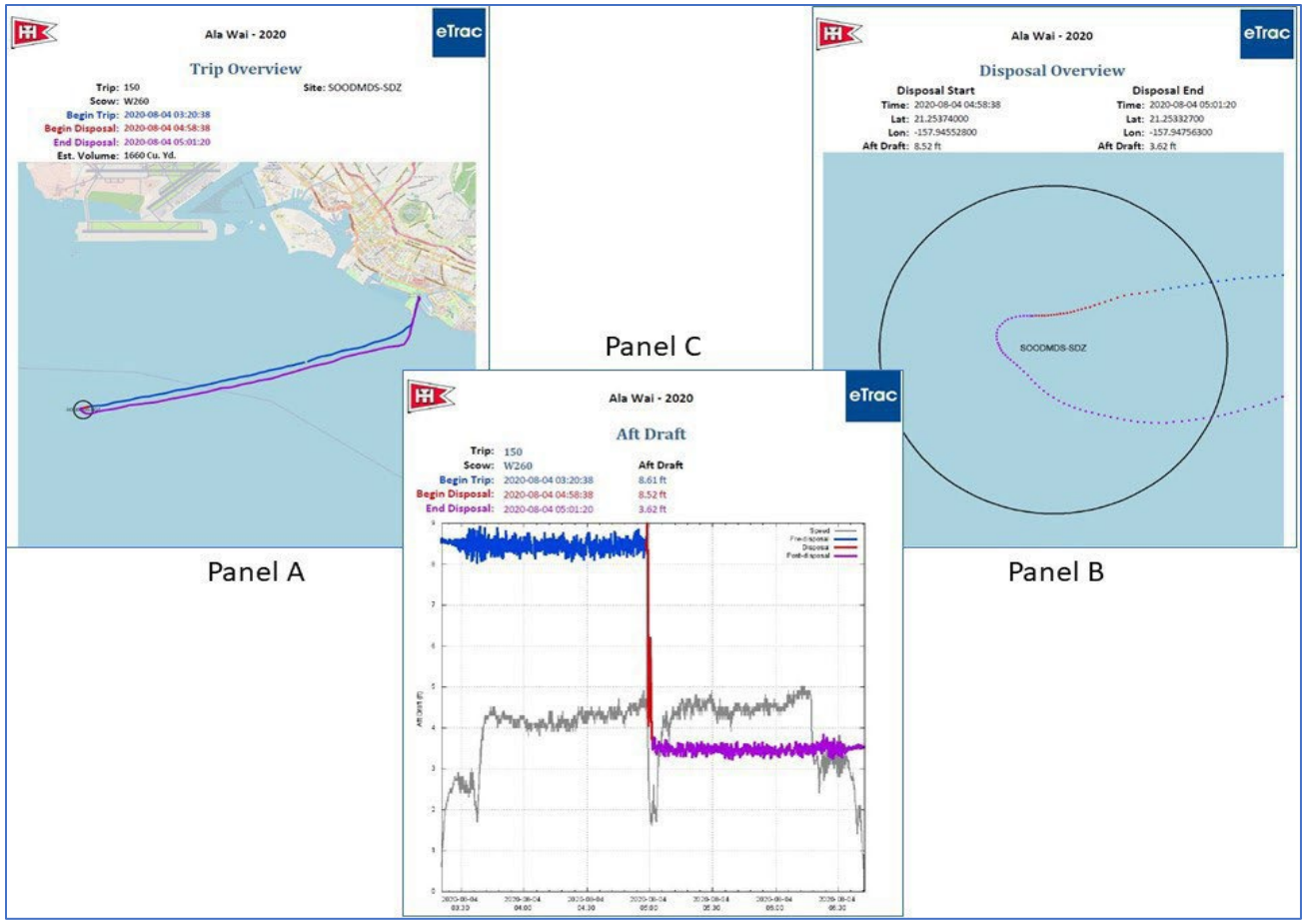

Figure 7-4. Example of a tracking report for an individual disposal trip. Panel A shows the vessel's route to and from the disposal site, with the blue line indicating the vessel is loaded and purple indicating it is empty following disposal. Panel B is a closeup of the disposal site's SDZ, showing the disposal (in red) occurring fully within the zone. Panel C shows the vessel's draft and speed throughout the trip, confirming no substantial loss of material from the vessel during transport.

Table 7-2. Typical parameters analyzed for site monitoring surveys. Limits are reported as the Target Reporting Limit (TRL; dry weight).

Groupings	Analytes	Analytical Method	TRL (Sediment)	TRL (Tissue)	Units
Conventionals	Grain Size	Plumb (1981)	NA		%
	Atterberg limits	ASTM D4318			
	Ammonia	350.1M	0.5		mg/kg
	TOC	USEPA 9060A	0.2		%
	Moisture	160.3	NA		%
	TSS	SM 2540 D	5		mg/L
	TVS	SM 2540E	NA		%
	TPH	SW-846	NA		mg/kg
	TRPH	1664M	25		mg/kg
Metals	Arsenic	USEPA 6020	1	1	mg/kg
	Cadmium	USEPA 6020	0.5	0.5	mg/kg
	Chromium	USEPA 6020	2	2	mg/kg
	Copper	USEPA 6020	3	3	mg/kg
	Lead	USEPA 6020	3	3	mg/kg
	Mercury	USEPA 7471A	0.5	0.5	mg/kg
	Nickel	USEPA 6020	5	5	mg/kg
	Selenium	USEPA 6020	0.1	0.1	mg/kg
	Silver	USEPA 6020	0.2	0.2	mg/kg
	Zinc	USEPA 6020	3	3	mg/kg
Organotins	Dibutyltin	Krone 1989	1	1	µg/kg
	Monobutyltin	Krone 1989	1	1	µg/kg
	Tetrabutyltin	Krone 1989	1	1	µg/kg
	Tributyltin	Krone 1989	1	1	µg/kg
PAHs	1-Methylnapthalene	EPA 8270C SIM	20	20	µg/kg
	1,6,7-Trimethlynapthalene	EPA 8270C SIM	20	20	µg/kg
	2,6-Dimethylnapthalene	EPA 8270C SIM	20	20	µg/kg
	2-Methylnapthalene	EPA 8270C SIM	20	20	µg/kg
	Acenaphthene	EPA 8270C SIM	20	20	µg/kg
	Acenaphthylene	EPA 8270C SIM	20	20	µg/kg
	Anthracene	EPA 8270C SIM	20	20	µg/kg
	Benzo(a)anthracene	EPA 8270C SIM	20	20	µg/kg
	Benzo(a)pyrene	EPA 8270C SIM	20	20	µg/kg
	Benzo(e)pyrene	EPA 8270C SIM	20	20	µg/kg

Groupings	Analytes	Analytical Method	TRL (Sediment)	TRL (Tissue)	Units
	Benzo (b) Fluoranthene	EPA 8270C SIM	20	20	µg/kg
	Benzo (g,h,i) Perylene	EPA 8270C SIM	20	20	µg/kg
	Benzo (k) Fluoranthene	EPA 8270C SIM	20	20	µg/kg
	Biphenyl	EPA 8270C SIM	20	20	µg/kg
	Chrysene	EPA 8270C SIM	20	20	µg/kg
	Dibenz (a,h) Anthracene	EPA 8270C SIM	20	20	µg/kg
	Fluoranthene	EPA 8270C SIM	20	20	µg/kg
	Fluorene	EPA 8270C SIM	20	20	µg/kg
	Indeno (1,2,3- c,d) Pyrene	EPA 8270C SIM	20	20	µg/kg
	Naphthalene	EPA 8270C SIM	20	20	µg/kg
	Phenanthrene	EPA 8270C SIM	20	20	µg/kg
	Pyrene	EPA 8270C SIM	20	20	µg/kg
	Total PAHs	EPA 8270C SIM			µg/kg
PCBs	PCB 018	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 028	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 037	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 044	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 049	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 052	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 066	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 070	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 074	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 077	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 081	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 087	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 099	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 101	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 105	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 110	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 114	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 118	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 119	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 123	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 126	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 128	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 138	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 149	USEPA 8082A ECD	0.5	0.5	µg/kg

Groupings	Analytes	Analytical Method	TRL (Sediment)	TRL (Tissue)	Units
	PCB 151	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 153	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 156	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 157	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 158	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 167	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 168	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 169	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 170	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 177	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 180	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 183	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 187	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 189	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 194	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 201	USEPA 8082A ECD	0.5	0.5	µg/kg
	PCB 206	USEPA 8082A ECD	0.5	0.5	µg/kg
	Total PCBs	USEPA 8082A ECD			µg/kg
Pesticides	2,4'-DDD	US EPA 8081A	2	2	µg/kg
	2,4'-DDE	US EPA 8081A	2	2	µg/kg
	2,4'-DDT	US EPA 8081A	2	2	µg/kg
	4,4'-DDD	US EPA 8081A	2	2	µg/kg
	4,4'-DDE	US EPA 8081A	2	2	µg/kg
	4,4-DDT	US EPA 8081A	2	2	µg/kg
	Total DDTs	US EPA 8081A			µg/kg
	Aldrin	US EPA 8081A	2	2	µg/kg
	Alpha-BHC	US EPA 8081A	2	2	µg/kg
	Beta-BHC	US EPA 8081A	2	2	µg/kg
	Chlordane-alpha (cis)	US EPA 8081A	2	2	µg/kg
	Chlordane-gamma (trans)	US EPA 8081A	2	2	µg/kg
	Cis-nonachlor	US EPA 8081A	2	2	µg/kg
	Trans-nonachlor	US EPA 8081A	2	2	µg/kg
	Oxychlordane	US EPA 8081A	2	2	µg/kg
	Total Chlordane	US EPA 8081A			µg/kg
	Chlordane Technical	US EPA 8081A	10	10	µg/kg
	Delta-BHC	US EPA 8081A	2	2	µg/kg
	Dieldrin	US EPA 8081A	2	2	µg/kg

Groupings	Analytes	Analytical Method	TRL (Sediment)	TRL (Tissue)	Units
	Endosulfan I	US EPA 8081A	2	2	µg/kg
	Endosulfan II	US EPA 8081A	2	2	µg/kg
	Endosulfan Sulfate	US EPA 8081A	2	2	µg/kg
	Endrin	US EPA 8081A	2	2	µg/kg
	Endrin Aldehyde	US EPA 8081A	2	2	µg/kg
	Endrin Ketone	US EPA 8081A	2	2	µg/kg
	Gamma-BHC	US EPA 8081A	2	2	µg/kg
	Heptachlor	US EPA 8081A	2	2	µg/kg
	Heptachlor Epoxide	US EPA 8081A	2	2	µg/kg
	Methoxychlor	US EPA 8081A	2	2	µg/kg
	Toxaphene	US EPA 8081A	10	10	µg/kg
Phthalates	Bis(2-Ethylhexyl) Phthalate	EPA 8270C SIM	20	20	µg/kg
	Butylbenzyl Phthalate	EPA 8270C SIM	20	20	µg/kg
	Diethyl Phthalate	EPA 8270C SIM	20	20	µg/kg
	Dimethyl Phthalate	EPA 8270C SIM	20	20	µg/kg
	Di-n-butyl Phthalate	EPA 8270C SIM	20	20	µg/kg
	Di-n-octyl Phthalate	EPA 8270C SIM	20	20	µg/kg
Phenols	2-Methylphenol	EPA 8270C SIM	20	20	µg/kg
	2-Nitrophenol	EPA 8270C SIM	20	20	µg/kg
	2,4,5-Trichlorophenol	EPA 8270C SIM	20	20	µg/kg
	2,4,6-Trichlorophenol	EPA 8270C SIM	20	20	µg/kg
	2,4-Dichlorophenol	EPA 8270C SIM	20	20	µg/kg
	2,4-Dimethylphenol	EPA 8270C SIM	20	20	µg/kg
	2,4-Dinitrophenol	EPA 8270C SIM	20	20	µg/kg
	2-Chlorphenol	EPA 8270C SIM	20	20	µg/kg
	3,4-Methylphenol	EPA 8270C SIM	20	20	µg/kg
	4,6-Dinitro-2-Methylphenol	EPA 8270C SIM	20	20	µg/kg
	4-Chloro-3- Methylphenol	EPA 8270C SIM	20	20	µg/kg
	Bisphenol A	EPA 8270C SIM	20	20	µg/kg
	Pentachlorophenol	EPA 8270C SIM	20	20	µg/kg
	Total phenols	EPA 8270C SIM	20	20	µg/kg
Pyrethroids	Allethrin (Bioallethrin)	GC/MS/MS	1	1	µg/kg
	Bifenthrin	GC/MS/MS	1	1	µg/kg
	Cyfluthrin-beta (Baythroid)	GC/MS/MS	1	1	µg/kg
	Cyhalothrin-Lamba	GC/MS/MS	1	1	µg/kg
	Cypermethrin	GC/MS/MS	1	1	µg/kg
	Deltamethrin (Decamethrin)	GC/MS/MS	1	1	µg/kg

Groupings	Analytes	Analytical Method	TRL (Sediment)	TRL (Tissue)	Units
	Esfenvalerate	GC/MS/MS	1	1	µg/kg
	Fenpropathrin (Danitol)	GC/MS/MS	1	1	µg/kg
	Fenvalerate (sanmarton)	GC/MS/MS	1	1	µg/kg
	Fluvalinate	GC/MS/MS	1	1	µg/kg
	Permethrin (cis and trans)	GC/MS/MS	1	1	µg/kg
	Resmethrin (Bioresmethrin)	GC/MS/MS	1	1	µg/kg
	Resmethrin	GC/MS/MS	1	1	µg/kg
	Sumithrin (Phenothrin)	GC/MS/MS	1	1	µg/kg
	Tetramethrin	GC/MS/MS	1	1	µg/kg
	Tralomethrin	GC/MS/MS	1	1	µg/kg

8 APPENDIX B – SITE USE CONDITIONS

Site Use Conditions For MPRSA Section 103 Permits/Authorizations and Federal Dredging Projects: LA-2, LA-3, and LA-5

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

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

8.1 DEFINITIONS

"Permit" as used herein means ocean dumping permits issued by USACE under Section 103 of the MPRSA, and USACE contracts or other authorizations for USACE dredging projects (see MPRSA section 103(e) and 40 CFR § 220.2(h)). The ocean disposal Site Use Conditions included in EPA's project-specific concurrences must be reflected in, or attached to, the permit or authorization for every project as provided in Section 103(c) of the MPRSA and 40 CFR § 220.4(c).

"Permittee" is the entity with overall responsibility for the project, such as USACE itself for USACE Federal (civil works) projects or another public or private entity named in a permit or authorization issued by USACE. The permittee is responsible for overall compliance with all of EPA's ocean disposal Site Use Conditions, including reporting requirements.

"Contractor" as used herein means any entity engaged to carry out the permitted work. Contractors are also responsible for complying with all relevant ocean disposal Site Use Conditions including, if USACE and EPA agree in advance, reporting requirements. Contractors may include the prime dredging contractor, as well as any third-party inspector, or contractor otherwise involved in any tracking, recording, and reporting according to the Site Use Conditions below.

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

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

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

"Suitable Material" means dredged material that has been adequately characterized and determined by EPA to be physically compatible with the disposal site, to be non-toxic, and to contain no more than "trace" levels of constituents (see 40 CFR § 227.6).

"**Suitable Unit**" means a dredging unit of defined dimensions and geographic boundaries that contains only material deemed suitable by EPA through pre-disposal evaluation (see above definition for suitable material). This could be a polygon characterized by a composite sample and/or individual cores.

"Surface Disposal Zone" or "SDZ" is the 305 m (1,000 foot) radius circle at the center of the overall disposal site (see **Table 1** below), within which the disposal vessel must discharge all of the dredged material.

8.2 STANDARD CONDITIONS

1. ***Pre-construction Meeting with EPA, Permittee, and Contractor:*** If requested by EPA or USACE, the permittee must organize a pre-construction meeting (which may be virtual) to include EPA, personnel from the permittee's organization, and personnel from the prime dredging Contractor and from any subcontractor involved in transporting the disposal vessels to the ODMDS. The purpose of the meeting is to ensure that Contractor(s) have received and understand EPA's ocean disposal Site Use Conditions.

2. ***Dredging Operations Plan***: A dredging operations plan (DOP) is a plan that outlines the methods and schedule for conducting dredging activities. The DOP must be sent via email to the appropriate contact at EPA Region 9 for review and approval following EPA ocean disposal concurrence, but at least fifteen (15) calendar days prior to commencement of dredging. After EPA approval of the DOP, any deviations from the original DOP must be sent to EPA for approval at least seven (7) calendar days prior to implementing any changes. The DOP must, at a minimum, include the following elements:

a. Maps of dredging footprint, including all areas characterized in the SAP, both suitable and unsuitable units clearly labeled as such;
b. When unsuitable units are present, include:
    i) The sequence of dredging of each unit, if there are unsuitable units that must be avoided or handled for alternative disposal in proximity to suitable units approved for ocean disposal;
    ii) Configurations and protocols of dredging and disposal vessels to be used in the dredging operation, including anchoring or mooring maps, if there is unsuitable material within 50 m of the footprint;
c. Specifications of the dredging equipment to be used;
d. Standard Operating Procedures (SOPs) for preventing dredging deeper in vertical extent or outside approved dredging boundaries, taking into consideration the specific equipment to be used;
e. Best management practices to be employed, as relevant to the specific dredging location, dredging equipment and vessel, and transit to the ODMDS, including any buffers between sensitive resources, backflow control, etc.;
f. The list of Points of Contact (POCs) for the dredging project within USACE, the permittee's organization, and any relevant contractors. This list should include project management, compliance tracking, environmental coordination, contract management, etc.;
g. The remainder of the EPA Site Use Conditions listed below.

3. ***Prohibition on Leaking or Spilling:*** The permittee shall ensure that dredged material is not leaked or spilled from disposal vessels while stationary or during transit to the LA-2, LA-3, and LA-5 sites. Transportation of dredged material to any of these sites shall only be allowed when weather and sea state conditions will not interfere with safe transportation and will not create risk of spillage, leaking, or other loss of dredged material during transit. Disposal vessels must not be loaded beyond a level at which dredged material would be expected to be spilled in transit under anticipated sea state conditions (i.e., should be filled to less than 80%; more restrictive load limits may be implemented for a specific project and will be indicated in Section C). No disposal vessel trips shall be initiated when the National Weather Service has issued a gale warning for local waters during the time period necessary to complete dumping operations, or when wave heights are 16 feet or greater.

4. ***Prohibition on Disposal of Uncharacterized material, Unsuitable Material, Trash and Debris; use of Grizzly:*** Only dredged material determined in advance by EPA and USACE to be suitable for ocean disposal may be discharged at the LA-2, LA-3, and LA-5 sites. Uncharacterized dredged material, vessels, trash, and other debris are prohibited from being discharged at these sites. In order to exclude large trash and debris (including rocks) from being disposed at the sites, all excavated dredged material loads must be placed into scows through a steel mesh or chain “grizzly” with openings of no more than 12 inches by 12 inches. Material retained on the grizzly must be removed and disposed of separately at an appropriate location and may not be disposed of at the ocean disposal sites. EPA and USACE may, on a case-by-case basis, waive the requirement to use a grizzly if they determine that trash and debris is unlikely to be present in the area to be dredged.

5. ***Dredging Footprint Documentation:*** To ensure that only approved, suitable material is disposed at the ODMDS, the project shall have a system that documents the specific location from which dredged material transported for ocean disposal was removed. The system shall be calibrated for accuracy per industry standards, and indicate and record the following information associated with each dredge bucket drop:

a. position of the bucket on the seafloor (i.e., the ‘bucket print’), for each bucket deployment, superimposed on the dredging unit delineation, to a minimum accuracy of 1 m (3 ft) in World Geodetic System 1984 (WGS84); and
b. time and date associated with each bucket drop.

This data shall be compiled on a daily basis throughout the dredging operation and submitted to the appropriate contact at EPA Region 9 as part of the monthly reports (as described in Condition 12), including the data from the GPS-based primary dredging equipment tracking system showing the location of the dredging equipment superimposed on a map of the suitable dredged material footprint, and the times and dates associated with the location data.

The dredge footprint documentation system must also include a real-time display, visible to the dredge operator, showing the position of the dredging equipment relative to the boundaries of the suitable dredged material footprint.

If dredging and ocean disposal of material from outside of, or below, the footprint of approved, suitable material occurs by more than 1m (i.e., any unsuitable or uncharacterized material), both EPA Region 9 and the USACE Los Angeles District must be notified within 24 hours (as described in Condition 13).

6. ***Scow Certification Form****:* The permittee shall submit a Scow Certification form to both the appropriate EPA contact at EPA Region 9 and the appropriate USACE Project Manager for review and approval prior to the commencement of any ocean disposal operations. The Scow Certification will be used to document, at a minimum:

a. the estimated bin volume of material dredged and loaded into each disposal vessel (to be completed prior to transport for disposal);
b. the location from which the material in each barge was dredged (i.e., the specific dredge unit identifier) (to be completed prior to transport for disposal);
c. the marine weather forecast and sea-state conditions (i.e., appropriate NOAA buoys) anticipated during the transit period (to be completed prior to transport for disposal);
d. the time that each disposal vessel departs for, arrives at, and returns from the ODMDS (to be completed immediately following disposal operations); and
e. the exact coordinates and time of each disposal event (to be completed during or immediately following each disposal event).

For each disposal trip, both the permittee (or prime dredging contractor) and an independent quality control inspector ("*independent"* means an individual not directly reporting to the project manager) must certify in writing that the vessel is not over-loaded, and otherwise meets the requirements of the Scow Certification form this Condition. The permittee (or prime dredging contractor) and the independent quality control inspector shall complete the relevant portions of the Scow Certification according to the timing outlined in parts 6(a)-(e).

The permittee (or prime dredging contractor) shall have an appropriate communications hierarchy and protocols in place to provide the quality control inspector with the authority to ensure that the Site Use Conditions pertinent to the scow, including the loading and sea state conditions (Condition 3), are met and to prevent the scow from departing for a disposal trip if they are not fulfilled. The permittee (or prime dredging contractor) shall submit the completed Scow Certification form to EPA and USACE in accordance with the monthly reporting outlined in Condition 12.

7. ***Surface Disposal Zone (SDZ):*** When discharging dredged material within the LA-2, LA-3, and LA-5 sites, no portion of the disposal vessel from which the materials are to be released (*e.g.,* hopper dredge or barge) shall be further than 305 m (1,000 ft) from the center of the disposal sites (unless specified by a project-specific Site Use Condition. The center coordinates of the ODMDSs (**Table 1**) are also the center coordinates of the SDZ. No more than one disposal vessel may be present within the SDZ at any time.

Table 1. Dimensions and center coordinates for the LA-2, LA-3, and LA-5 ODMDSs and their surface disposal zones (SDZ).

	Dimensions		**Center Coordinates (Degrees Minutes Seconds*)**	
Disposal Site	**Radius of the SDZ**	**Radius of Overall Site**	**Latitude**	**Longitude**
LA-2 (Los Angeles/ Long Beach)	1000 ft (305 ft)	3000 ft (915 m)	33° 37' 6" N (NAD 83)	118° 17' 24" W (NAD 83)
LA-3 (Newport Beach)	1000 ft (305 ft)	3000 ft (915 m)	33° 31' 00" N (NAD 83)	117° 53' 30" W (NAD 83)
LA-5 (San Diego)	1000 ft (305 ft)	3000 ft (915 m)	32° 36' 49.8" N (NAD27)	117° 20' 40.2" W (NAD27)

** If other coordinate formats are required for disposal operating systems, please contact EPA Region 9 to confirm the converted coordinates.*

8. ***Disposal Vessel Instrumentation and Tracking:*** The primary tracking system for recording ocean disposal operations and ensuring that no material is released outside of the ODMDS SDZ shall be disposal vessel-based. Each disposal vessel shall have a primary navigation/tracking system functioning during the time of loading of dredged material onto the disposal vessel through the return transportation of the vessel from each disposal trip to the dredging site. This system shall be calibrated for accuracy at a minimum at the beginning of each ocean disposal project, and automatically indicate and record the following information throughout transportation to, disposal at, and return from LA-2, LA-3, and LA-5 sites:

a. position of the disposal vessel, to a minimum accuracy of 3 m (10 ft) in WGS84 during transport to, disposal at, and return from the ODMDS;
b. speed and heading of the disposal vessel during transport to, disposal at, and return from the ODMDS;
c. fore and aft draft of the disposal vessel (sensors as near vessel centerline as possible) from the time that loading begins, to the time of return of the disposal vessel to the dredging site following disposal at the ODMDS;
d. fore and aft bin height (top of dredged material load in the bin or hopper) (sensors as near vessel centerline as possible) from the time that loading begins, to the time of return of the disposal vessel to the dredging site following disposal at the ODMDS; and
e. time and location of each disposal event (e.g., the discharge phase).

This system must record these data at a maximum 1-minute interval while outside the disposal site boundary, and at a maximum 15-second interval while inside the disposal site boundary and the SDZ. The primary system must also include a real-time display, located in the wheelhouse or otherwise visible to the helmsman, showing the position of the disposal vessel relative to the boundaries of the ODMDS and its SDZ, superimposed on the appropriate National Ocean Service (NOS) chart so that the operator can confirm proper position of the disposal vessel within the SDZ before discharging the dredged material.

9. ***Back-up Navigation System****:* If the primary disposal vessel tracking system fails during transit, the navigation system on the pushing or towing vessel, meeting the minimum accuracy requirements listed above, may be used to complete that disposal trip by maneuvering the pushing or towing vessel so that, given the compass heading and any tow cable length to the scow ("lay back"), the estimated scow position would be within the SDZ. In such cases the pushing or towing vessel's position, any tow cable length, and the compass heading to the disposal vessel must be recorded and reported on the Scow Certification form.

If the draft sensor for the primary disposal vessel tracking system fails while the disposal vessel is stationary, loading of the disposal vessel must cease until capabilities are restored. If only the GPS tracking fails, then EPA and USACE must be informed of the coordinates at which the disposal vessel is stationed, and the draft must continue to be recorded and posted in accordance with Condition 10 below. However, transit should not occur until full primary tracking (GPS and draft) capabilities are restored (per Condition 8).

10. ***Posting Disposal Vessel Tracking Data on the Internet:*** Within 24 hours of the completion of each disposal trip, data recorded from the primary disposal tracking system must be posted by a third-party contractor to an Internet site accessible by EPA Region 9, the USACE LA District, and any other entity specified by EPA or USACE in project-specific permits or authorizations. The internet site must be searchable by disposal trip number and date, and at a minimum for each disposal trip, it must provide a visual display of:

a. the disposal vessel transit route to/from the sites;
b. the beginning and ending locations of the disposal event; and
c. the disposal vessel speed and draft from loading, throughout the transit

The requirement for posting this information on the internet is independent from the reporting requirements listed in Conditions 11-14 below.

11. ***E-Mail Alerts****:* The third-party system must also generate and distribute "e-mail alerts" regarding any degree of apparent dumping outside the Surface Disposal Zone of the LA-2, LA-3, and LA-5 sites ("mis-dumping"), and regarding any apparent substantial leakage/spillage or other loss of material while stationary or during transport to these sites. Substantial leakage/spillage or other loss shall be defined as an apparent loss of draft of one foot or more between the time that

loading of the disposal vessel with dredged material begins and the time the disposal phase (discharge) begins.

E-mail alerts must be sent within 24 hours of the dredging contractor or permittee becoming aware of the apparent issue to the appropriate EPA contact at EPA Region 9, to the appropriate USACE Project Manager, and the USACE LA District (See Section 8.5).

12. ***Record-Keeping, and Monthly Reporting:*** In addition to the requirements in Condition 10, for posting data on the Internet, the permittee shall collect and maintain daily records. These records shall include the approved Scow Certification forms. The permittee shall also collect and maintain dredging footprint documentation for the entirety of any dredging activity, including electronic data from the GPS-based primary dredging equipment tracking system showing the location of the dredging equipment superimposed on a map of the suitable dredged material footprint, and the times and dates associated with the location data.

Additionally, the permittee shall collect and maintain, for each disposal vessel, from the beginning of loading to the return to the dredging site following disposal, electronic data from the GPS-based primary disposal tracking system (or the backup navigation tracking system when appropriate) showing vessel location and associated time stamp, disposal vessel draft readings, disposal coordinates, and the time and position of the disposal vessel when dumping was commenced and completed.

All daily records shall be compiled at a minimum for each month during which ocean disposal operations occur, and provided in reports via email, certified accurate by the dredging contractor and the permittee, to both the appropriate EPA contact at EPA Region 9 and the appropriate USACE Project Manager by the 15th day of the following month. Each monthly report shall include the Scow Certification forms, disposal vessel electronic tracking (or back-up system data), disposal vessel draft, dredging footprint documentation, any appropriate weather/sea-state data, and documentation relevant to any system failures or violations of any of the Site Use Conditions via pdf (or other format deemed acceptable by EPA and USACE).

The monthly reports shall also include a cover letter summarizing the specific dredging units dredged during the month, the total estimated volume of material dredged during the month (estimated bin volume), any problems complying with the Site Use Conditions, any significant deviations from the anticipated project-specific Site Use Conditions (e.g., presence of oily sheen, smell, other indications of contamination, changes in dredging equipment, etc.), the cause(s) of the problems, any steps taken to rectify the problems, and whether the problems occurred during dredging of suitable units or on subsequent disposal trips.

13. ***24-Hour Notification Requirement for Potential Leaks, Mis-Dumps, and Dredging of Unsuitable or Uncharacterized Material:*** The permittee shall report via email any anticipated, potential, or actual variances from compliance with these Standard Conditions, and any additional project specific Special Conditions, to both the appropriate EPA contact at EPA

Region 9 and the appropriate USACE Project Manager within 24 hours of discovering such a situation. For any variances from compliance, the permittee shall report to EPA the geographic coordinates (in WGS 84) of the incident (including, for example, where a potential leak, mis-dump, or mis-dredge may have occurred). Additionally, the permittee shall report to EPA Region 9 and the USACE LA District within 24 hours if any conditions arise that indicate that dredged material previously deemed suitable for ocean disposal by EPA may have unanticipated levels of constituents (e.g., as indicated by the presence of an oily sheen, significant debris, etc.). A message from an operational “e-mail alert” system, as described in Condition 11, will be considered as fulfilling this 24-hour notification requirement for mis-dumps or potential leaks, however the permittee must ensure that EPA also receives, within two (2) business days, any necessary location information per this Condition.

In addition, the permittee shall prepare and submit a detailed report of any such compliance problems on a weekly basis by noon Monday PST, to EPA Region 9 and the USACE LA District. These reports shall describe the cause(s) of the problems, any steps taken to rectify the problems, and whether the problems occurred on subsequent dredging events or disposal trips.

14. ***Project Completion Report:*** Within 60 calendar days following the completion of ocean disposal operations, the permittee shall submit via email to both the appropriate EPA contact at EPA Region 9 and the appropriate USACE Project Manager a project completion report. The project completion report shall, at a minimum, contain:

a. A cover letter summarizing:
    i. The total number of disposal trips and the overall volume of material (estimated bin volume as well as *in-situ* volume calculated from a post-dredge survey) disposed at the specified site for the project (i.e., LA-2, LA-3, and LA-5) The comparison of the total volume dredged with the volume anticipated in the SAP;
    ii. Whether any of this dredged material was excavated from outside the areas authorized for ocean disposal or was dredged deeper than authorized by the permit or authorization.
b. The comparison of the pre- and post-bathymetry of the dredging footprint and surrounding areas to show the depths achieved within the project footprint (and any areas that may have been disturbed outside the footprint), and how they correspond to the project depth. The bathymetry must have sufficiently defined colors to allow for rapid assessments of areas along 1-foot intervals; and
c. The compilation of the monthly reports required under Condition 12.

8.3 Additional Project-Specific Conditions

Additional project-specific Site Use Conditions or modifications to the Standard Site Use Conditions specified above may be required by EPA and USACE if they determine these conditions are necessary to facilitate safe use or accurate monitoring of the disposal site, or to prevent potential harm to the environment. These can include any conditions that EPA or USACE determine to be necessary or appropriate to facilitate compliance with the requirements of the MPRSA, such as timing of operations or methods of transportation and disposal.

8.4 Alternative Site Use/Project Conditions

Alternatives to these Standard Site Use Conditions may be authorized in advance if the permittee demonstrates to the satisfaction of EPA and USACE that the alternative Conditions are: sufficient to accomplish the specific intended purpose of the original Site Use Condition; will not increase the risk of harm to the environment or the health or safety of persons; and will not impede monitoring of compliance with the MPRSA, the ocean disposal regulations, or the project's permit or authorization.

8.5 Compliance with Disposal Site Use Requirements

Enforcement action for a violation or non-compliance with any Site Use Condition may be initiated by EPA and/or USACE as appropriate. Examples include but are not limited to: disposal of unsuitable or uncharacterized material; disposal outside the designated boundaries of the site due to mis-dumping or spillage; disposal at a time or in a manner not specifically authorized; failure to maintain or provide required records. If a compliance or enforcement action is initiated, consequences may include interruption or cessation of disposal operations, monetary penalties, or additional monitoring activities to be carried out by the permittee.