SECTION 3.3

Remedial Action Objectives

RAOs describe the goals that proposed remedial actions are expected to accomplish, such as protecting human health and the environment by eliminating COPCs above action goals and/or eliminating exposures to human and ecological receptors. RAOs, can differ with each specific site, depending on site conditions, exposure scenarios, and receptors. The FFS developed specific RAOs, which are used in the ROD/RAP to guide the development of alternatives for each coastal salt marsh site.

This section describes the development of RAOs, identifies RAOs for the coastal salt marsh sites, and presents how the different agencies (DTSC, RWQCB, and Army) identify and implement their respective laws and standards for selection of remedies.

3.3.1 Definition of Remedial Action Objectives

RAOs were developed in the FFS to provide a basis for evaluating the ability of the remedial alternatives to comply with ARARs, and to protect human health and the environment in the coastal salt marsh. The RAOs are quantitative and qualitative expressions of goals for protecting human health and the environment. They are expressed in terms of contaminants and media of interest, possible receptors, and associated exposure pathways.

Contaminants considered in establishing RAOs for the coastal salt marsh sites were developed based on the FFS COPCs (CH2M HILL, 2003b). The conceptual model used in the FFS to establish RAOs is the same as the model used in the *Human Health and Ecological Risk Assessment* (USACE, 2001) for the coastal salt marsh (see Section 2.1.1). Current and future land use scenarios for the coastal salt marsh include recreational use (e.g., recreational fishing and shellfish collection). Because of the high certainty of the future ecological habitat of the marsh, the only ecological receptors expected to be present in the future are estuarine receptors.

3.3.2 Identification of Remedial Action Objectives

Protection of human health and the environment in the coastal salt marsh can be accomplished by reducing concentrations of FFS COPCs that are greater than action goals or by controlling or eliminating exposure of receptors to FFS COPCs that are greater than remediation goals.

The RAOs for the coastal salt marsh sites are to prevent or mitigate the exposure of ecological and human receptors to soil/sediment containing concentrations of FFS COPCs that are greater than their respective action goals. Table 3.1-1 provides the action goals established for the coastal salt marsh sites.

3.3.3 Remedy Selection Requirements and Process

State and federal agencies operate under different laws and regulations when selecting remedies for protection of human health and the environment. The State operates under the California Health and Safety Code, while the Army operates under CERCLA. This section describes how the different agencies identify and implement their respective laws and standards for selection of the remedies contained in this ROD/RAP.

3.3.3.1 State Remedy Selection Requirements and Process

The selection of the remedy by DTSC and the RWQCB is based on their authority to approve RAPs as set forth in Section 25356.1 of the California Health and Safety Code. The statutory requirements governing selection of the remedy are also contained in Health and Safety Code, Section 25356.1.5. In summary, any remedy selected in a RAP must be based on, and be no less stringent than, requirements of the NCP, regulations and applicable requirements contained in Division 7 of the Water Code, regulations promulgated thereunder, resolutions issued by SWRCB and the San Francisco Bay Regional Water Quality Control Plan, and applicable provisions of Chapter 6.8 of Division 20 of the Health and Safety Code.

DTSC and the RWQCB generally follow the model used by the NCP in developing information necessary for selecting a remedy. However, the decision selecting the final remedial goals and the remedy to be implemented ultimately constitute an independent exercise of discretion by DTSC and the RWQCB, subject to applicable state laws. Approval of a RAP by DTSC and the RWQCB under Health and Safety Code, Section 25356.1, must consider the following factors:

- Health and safety risks posed by conditions at the site, including scientific data and reports that may have a relationship to the site
- Effect of contamination or pollution levels on present, future, and probable beneficial uses of contaminated, polluted, or threatened resources
- Effect of alternative remedial action measures on the reasonable availability of groundwater resources for present, future, and probable beneficial uses
- Site-specific characteristics, including the potential for offsite migration of hazardous substances, the surface or subsurface soil, and the hydrogeologic conditions, as well as pre-existing background contamination levels
- Cost-effectiveness of alternative remedial action measures
- Potential environmental impacts of alternative remedial action measures

DTSC and the RWQCB have determined that the action goals selected in this ROD/RAP meet the applicable laws and requirements of the State. DTSC and the RWQCB have also determined that the remedies selected in this ROD/RAP are in compliance with the requirements of the California Health and Safety Code. In selecting the remedy, DTSC and the RWQCB have considered the available information for HAAF.

3.3.3.2. Army Remedy Selection Requirements and Process

Pursuant to Section 121(d)(1) of CERCLA, remedial actions must attain a degree of cleanup that protects both human health and the environment, and they must comply with ARARs. Additionally, remedial actions that leave hazardous substances, pollutants, or contaminants onsite must meet standards, requirements, limitations, or criteria that are applicable or relevant and appropriate. Although HAAF is not on the NPL of CERCLA sites, the remedial investigations and remedial actions conducted at the site are required to be consistent with the NCP. As such, this ARARs analysis was developed in a manner consistent with guidance and policy of CERCLA, as amended by SARA. The intent of this ARARs analysis is to identify those federal and more-stringent state regulations that must be considered when evaluating a remedial alternative.

Federal ARARs include requirements under any federal environmental law, while state ARARs include promulgated requirements under state environmental laws that are more stringent than federal ARARs. To be an ARAR, the requirement must meet either of these following requirements (EPA, 1988a):

- **Applicable** requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site.

Or:

- **Relevant and appropriate** requirements are those cleanup standards, standards of control, or other substantive environmental requirements, criteria, or limitations promulgated under federal or state law that, while not specifically "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the site that their use is well-suited to the particular site. A requirement must be both relevant and appropriate to be designated an ARAR.

ARARs are identified on a site-specific basis from information about site-specific chemicals, specific actions that are being considered, and specific features of the site location. For the Army to consider a state requirement to be an ARAR under CERCLA and the NCP, the requirement must be:

- Legally enforceable
- Generally applicable to all circumstances covered by the requirement, not just Superfund sites
- More stringent than the federal regulation

Substantive requirements pertain directly to actions or conditions in the environment. They include restrictions for exposure to certain types of hazardous substances (e.g., chemical-specific ARARs), restrictions on activities in certain locations (e.g., location specific ARARs), and technology-based requirements for actions (e.g., action specific ARARs). For any onsite remedial activity, the administrative portions of the environmental standards criteria or limitations are not ARARs because CERCLA Section

121(e) exempts these actions from permitting requirements. This permit exemption applies to all administrative requirements, whether or not they are styled as permits. Administrative requirements include the approval of or consultation with administrative bodies, issuance of permits, documentation, reporting, recordkeeping, and enforcement.

The three categories of ARARs are described as:

- Chemical-specific ARARs are numerical values that represent a health-based or risk-based standard, or the results of methodologies which, when applied to site-specific conditions, are used to establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment.
- Location-specific ARARs are restrictions on the conduct of activities solely because the site occurs in certain environmentally sensitive areas. Examples include wetlands, floodplains, endangered species habitat, or historically significant resources.
- Action-specific ARARs are technology-based or activity-based requirements or limitations on actions taken with respect to hazardous wastes.

A requirement may not meet the definition of an ARAR as defined above, but still may be useful in determining whether to take action at a site or to what degree action is necessary. This can be particularly true when there are no ARARs for a site, action, or contaminant. Such requirements are called TBC criteria. TBC criteria are nonpromulgated advisories or guidance issued by federal or state government that are not legally binding, but may provide useful information or recommended procedures for remedial action. Although TBCs do not have the status of ARARs, they are considered along with ARARs to establish the required level of cleanup for protection of human health or the environment.

Section 121 (d)(4) of CERCLA provides six specific circumstances in which potential ARARs may be waived. These waivers apply only to meeting ARARs with respect to remedial actions onsite. Other statutory requirements, such as remedies protective of human health and the environment, cannot be waived. Currently, it is not envisioned that any waivers will be requested for the coastal salt marsh sites; however, the circumstances in which potential ARARs could be waived are summarized below for the sake of completeness:

- Interim Measures: The remedial action selected is only part of a total remedial action that will attain such a level or standard of control when completed [Section 121 (d)(4)(A)].
- Greater Risk to Human Health and the Environment: Compliance with such a requirement at the facility will result in greater risk to human health and the environment than alternative options [Section 121 (d)(4)(B)].
- Technical Impracticability: Compliance with such a requirement is technically impractical from an engineering perspective [Section 121 (d)(4)(C)].
- Equivalent Standard of Performance: The remedial action selected will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, criteria, or limitation, through use of another method or approach [Section 121 (d)(4)(D)].

- Inconsistent Application of State Requirements: With respect to a state standard, requirement, criterion, or limitation, the state has not consistently applied the standard, requirement, criterion, or limitation in similar circumstances at other remedial actions [Section 121 (d)(4)(E)].
- Fund Balancing: The Hazardous Substance Response Fund (Fund) waiver may apply when the selection of a remedial action that attains such level or standard of control will not provide a balance between the need for protection of public health and welfare and the environment at the facility under consideration and the availability of amounts from the Fund to respond to other sites that present or may present a threat to public health or welfare or the environment, considering the relative immediacy of such threats [Section 121 (d)(4)(F)]. The Fund Balancing waiver does not apply because funding for Hamilton is provided by the BRAC Environmental Restoration Account.

The ARARs for this ROD/RAP were developed using the following guidelines and documents:

- *CERCLA Compliance with Other Laws Manual, Part I: Interim Final* (EPA, 1988b)
- *CERCLA Compliance with Other Laws Manual, Part II: Clean Air Act and Other Environmental Statutes and State Requirements* (EPA, 1989)
- *California State Water Resources Control Board ARARs Under CERCLA* (SWRCB, 1992)
- *Considering Wetlands at CERCLA Sites* (EPA, 1994)

3.3.3.3 Chemical-Specific ARARs and TBCs

Chemical-specific ARARs include those requirements that regulate the release to, or presence in, the environment of materials possessing certain chemical or physical characteristics or containing specified chemical compounds. These requirements generally set health- or risk-based concentration limits or discharge limitations for specific chemicals. When a specific chemical is subject to more than one discharge or exposure limit, the more stringent of the requirements is used. Potential chemical-specific ARARs were evaluated on the basis of contaminants and the media impacted. The potential requirements were reviewed and deemed not applicable, relevant, or appropriate to establishing cleanup goals. However, chemical-specific requirements may be applicable, relevant, or appropriate to actions to be taken at the site. Therefore, a discussion of chemical-specific ARARs that apply only to specific actions that may be taken to clean up the site is provided under action-specific ARARs.

Because there are no promulgated chemical-specific ARARs that can be applied as soil or sediment action goals, a variety of TBC criteria have been considered. The chemical-specific TBCs for the coastal salt marsh sites are presented in Table 3.3-1. The sources for the TBCs follow:

- ER-Ls from E. R. Long, D. D. MacDonald, S. L. Smith, and F. D. Calder, 1995, "Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments," *Environmental Management*, 19: 81-97.
- Report of Petroleum Hydrocarbon Bioassay and Point-of-Compliance Concentration Determinations; Saltwater Ecological Protection Zone; Presidio of San Francisco, California, December 1997.

3.3.3.4 Location-Specific ARARs

Location-specific ARARs are those requirements that relate to the geographical position or physical condition of the site. These requirements may limit the type of remedial action that can be implemented or may impose additional constraints on some remedial alternatives. Potential location-specific ARARs for the site are summarized in Table 3.3-2. The major location-specific ARARs that could affect remedial actions in the coastal salt marsh are discussed in more detail below.

Clean Water Act (Section 404)

Section 404 of the CWA, 33 U.S.C. §1344, requires a permit for the discharge of dredged or fill material into waters of the United States. Activities associated with investigation activities that might trigger Section 404 requirements include placement of fill into wetlands following excavation and confirmation sampling and construction of temporary roads in the wetland area. Runoff of excavated materials into the wetlands may also occur. The *Guidelines for Specification of Disposal of Sites for Dredged or Fill Material* [40 CFR Part 230, Section 404(b)(1)] define requirements that limit the discharge of dredged or fill material into the aquatic environment or aquatic ecosystems. These guidelines specify consideration of activities that have less adverse impacts. They prohibit discharges that would result in exceedance of surface water quality standards, exceedance of toxic effluent standards, and jeopardization of threatened or endangered species. Actions that can be taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem are specified in Subpart H of 40 CFR 230, and include:

- Confining the discharge's effects on aquatic biota
- Avoiding disruptions of periodic water inundation patterns
- Selection of disposal site and method of discharge
- Minimizing or preventing standing pools of water

In addition, under CWA, Section 401, every applicant for a federal permit or license for any activity that may result in a discharge to a water body, e.g., Section 404 Permit, must obtain State Water Quality Certification (Certification) that the proposed activity will comply with state water quality standards.

Executive Order on Protection of Wetlands

The Executive Order on Protection of Wetlands, Executive Order No. 11990, requires that federal agencies avoid, to the extent possible, adverse impacts associated with the destruction or loss of wetlands, and avoid support of new construction in wetlands if a practicable alternative exists. EPA's regulations to implement this Executive Order are set forth in 40 CFR §6.302(a). In addition, EPA has developed guidance entitled *Policy on Floodplains and Wetlands Assessments for CERCLA Actions* (EPA, 1985). Wetlands will be encountered and affected during field activities, and these requirements are applicable.

San Francisco Bay Water Quality Control Plan Basin Plan

Chapter 2 (page 2-6) of the Basin Plan provides a discussion of wetlands in San Francisco Bay and their beneficial uses. Waters of the State of California, as defined by the Porter-Cologne Act, are "any water, surface or underground, including saline waters, within the boundaries of the State." Wetlands water quality control is, therefore, clearly within the jurisdiction of the State and Regional Boards.

Chapter 4 (page 4-49) of the Basin Plan addresses wetlands protection and management and incorporates several state directives to protect wetlands. These directives include (1) the Governor's Executive Order W-59-93, which has a goal of ensuring "no overall net loss of wetlands," achieving a "long-term net gain in the quantity, quality and permanence of wetlands acreage and values;" (2) Senate Concurrent Resolution No. 28, which expresses the intent of the State legislature to preserve, restore, and enhance California's wetlands; and (3) California Water Code, Section 13142.5, which states that "Highest priority shall be given to improving or eliminating discharges that adversely affect...wetland, estuaries and other biologically sensitive sites." These directives are applicable because the remediation proposed in the coastal salt marsh will directly affect resources the State is responsible for protecting; and thus, temporal and potentially permanent impacts must be considered in the selection of the remedy and addressed in its implementation.

3.3.3.5 Action-Specific ARARs

California Toxics Rule

Under Section 303(c)(2)(B) of the CWA, states must adopt numeric criteria for the priority toxic pollutants listed under Section 307(a) if those pollutants could be reasonably expected to interfere with the designated uses of State's waters. In April 1991, California adopted numeric criteria for priority toxic pollutants in the State's Inland Surface Water Plans and Enclosed Bays and Estuaries Plans. In 1994, a California State court ordered California to rescind these water quality control plans (the Basin Plans remained in effect). California remained subject to the National Toxics Rule promulgated in 1992 for certain waters and pollutants.

In May 2000, EPA promulgated the California Toxics Rule to replace the criteria that were rescinded by the State court. The National Toxics Rule also remains in effect in California for certain water bodies and pollutants. The water quality criteria promulgated under the California Toxics Rule are considered relevant and appropriate to water bodies.

San Francisco Bay Water Quality Control Plan

The State of California, as authorized by EPA, established water quality objectives for the protection of groundwater and surface water under the Porter-Cologne Water Quality Control Act. These water quality objectives were established by the California RWQCB for each basin and are based on the beneficial use(s) of the waters. The Water Quality Control Plan (also known as the Basin Plan) for the San Francisco Bay establishes beneficial uses for groundwater and surface water, as well as water quality objectives (the "criteria" under the CWA) designed to protect those beneficial uses. The Basin Plan describes implementation plans and other control measures designed to ensure compliance with statewide plans and policies and provides comprehensive water quality planning (RWQCB, 1995).

The coastal salt marsh is a wetland area within San Pablo Bay. Table 2-10 of the Basin Plan lists and specifies beneficial uses for 34 significant wetland areas within the region, including those wetlands located in San Pablo Bay (RWQCB, 1995). The beneficial uses listed for San Pablo Bay wetland areas are as follows:

- Estuarine habitat
- Fish migration and spawning
- Ocean, commercial, and sport fishing

- Preservation of rare and endangered species
- Water contact and noncontact recreation
- Wildlife habitat

The narrative and numerical water quality objectives contained in the Basin Plan are considered applicable in order to protect the beneficial uses of the coastal salt marsh and San Pablo Bay, and are directly enforceable by the State under the Porter-Cologne Water Quality Control Act.

Hazardous Waste Characterization

The action-specific ARARs that affect soil and sediment characterization and disposal include the requirements for identification of hazardous waste found in Title 22 of the CCR, Division 4.5, Chapter 11. A waste is a hazardous waste under both RCRA and California law if it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in 22 CCR 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, and 66261.24(a)(1), or if it is listed as a hazardous waste in Article 4 of Chapter 11. In addition, under the California RCRA-authorized program, wastes can be classified as California-only hazardous wastes if they exceed the STLC or the TTLC values contained in 22 CCR 66261.24(a)(2).

The numerical values presented in 22 CCR 66261.24 (a)(1) and (a)(2) are not considered action goals but are compared to contaminant concentrations in excavated materials to determine how the material should be managed. In other words, the TCLP, TTLC, and STLC criteria are not compared to in situ contaminant concentrations in soil or sediment, but rather are compared to the soil or sediment after it has been excavated (i.e., after the waste has been "generated"). If wastes generated at HAAF are characterized as hazardous waste, the regulations that govern the treatment, storage, and disposal of hazardous waste will be applicable. These requirements are found at Division 4.5 of Title 22 of the CCR.

If contaminant concentrations in excavated materials are less than the TCLP, TTLC, or STLC, but still contain contaminants that could cause degradation of surface or groundwater, these materials may be considered a designated waste. A designated waste is defined in Section 13173 of the California Water Code as a nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives, or that could reasonably be expected to affect beneficial uses of the waters of the state, as contained in the appropriate state water quality control plan. The *Designated Level Methodology for Waste Classification and Cleanup Level Determination* (Central Valley RWQCB October 1986, Updated June 1989) provides a methodology for calculating levels for specific constituents of a waste that provides a site-specific indication of the water quality impairment potential of the waste. As a result, wastes that contain contaminants above these calculated levels would be characterized as designated wastes. Removal actions proposed at HAAF may include disposal of designated waste to an offsite landfill. Title 27 CCR 20210 requires that designated waste be discharged to Class I or Class II waste management units.

The action-specific ARARs for the coastal salt marsh sites are summarized in Table 3.3-3.

TABLE 3.3-1
Chemical-Specific TBC Criteria for Developing Action Goals

Contaminants	TBC Value (ppm)[b]
Metals	
Lead	46.7[a]
Silver	1.0
Semivolatile Organic Compounds (including PAHs)	
PAHs, total	4.022
Petroleum Hydrocarbons	
TPH-d/TPH-motor	144
TPH-g/JP-4	12
Pesticides/Dioxins and Furans	
Chlordanes, total[d]	0.00479
DDTs, total[c]	0.03
Dioxins (total TCDD TEQ)[d]	0.000021

[a] Effects range-low

[b] The sources of the action goals are:

- **Metals:** Background concentrations for metals were primarily used as action goals unless the background concentrations were less than available risk-based numbers. Site-specific ambient levels from Appendix A - U.S. Army, 2001, *Final Human Health and Ecological Risk Assessment*; Effects Range-Lows (ER-Ls) from Long, E.R, D.D. MacDonald, S.L. Smith, and F.D. Calder, 1995, "Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments," *Environmental Management*, 19:81-97; *San Francisco Bay RWQCB Staff Report: Ambient Concentrations of Toxic Chemicals in San Francisco Bay Sediments*, May 1998.
- **Petroleum hydrocarbons:** *Report of Petroleum Hydrocarbon Bioassay and Point-of-Compliance Concentration Determinations; Saltwater Ecological Protection Zone; Presidio of San Francisco, California,* Dated December 1997. The numbers in this report were developed for a similar site with similar ecological receptors.
- **PAHs:** ER-Ls from Long, E.R, D.D. MacDonald, S.L. Smith, and F.D. Calder, 1995, "Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments," Environmental Management, 19:81-97. The ER-Ls were used as action goals because the ER-Ls are accepted as being protective of ecological receptors.
- **Pesticides:** The DDT values were developed in the Coastal Salt Marsh Focused Feasibility Study (CH2M HILL, 2003).

[c] The total DDT concentration in the Inboard Area shall not exceed 1.0 ppm. Areas with total DDT concentrations greater than 1.0 ppm shall be excavated and disposed of offsite.

[d] **Pesticides, Herbicides, PCBs, and Dioxins:** Table 5-1 from the US Army, 2001, *Final Human Health and Ecological Risk Assessment* (marine invertebrate—amphipod and California clapper rail); practical quantitation limits (PQLs) from previous sampling events were used when no other ecologically-based numbers were available with achievable detection limits; U.S. EPA, 1993a, *Interim Report on Data and Methods for Assessment of 2,3,7,8-Tetrachlorodibenzo-p-dioxin Risks to Aquatic Life and Associated Wildlife.* (EPA/600/R-93/-055); for lindane and total chlordane, Screening Quick Reference Tables (SquiRTs), NOAA, updated September 1999 were used as the best available ecological number when no other references were available.

RART = Regulatory Agencies and Resources Trustees

TCDD = tetrachlorodibenzo-p-dioxin

TEQ = toxicity equivalence

TABLE 3.3-2
Location-Specific ARARs for the Coastal Salt Marsh Sites

Source	Citation	ARAR Status	Description of ARARs
California Toxics Rule	40 CFR 131.38	Relevant and Appropriate	Contains criteria for priority toxic pollutants in the State of California for inland surface waters and enclosed bays and estuaries, except in those waters subject to objectives in SFRWQCB's 1986 Basin Plan.
California Endangered Species Act	Title 14, CCR 670.1, 670.2, and 670.5	Applicable	Contains standards for the identification and protection of listed or proposed threatened or endangered plants or animals.
Federal Endangered Species Act	50 CFR 402	Applicable	Contains standards for the identification and protection of current or possible future-listed threatened or endangered plants or animals. Section 7 requires federal agencies to consult the U.S. Fish and Wildlife Service to ensure that actions do not jeopardize listed species or adversely modify their critical habitat. Section 9 prohibits taking of endangered species, while Section 10 permits incidental takes.
Federal Clean Water Act	40 CFR 230.3, Section 404—Definition of Wetlands	Applicable	Authorized the USACE to delineate wetlands.
	40 CFR 230.10(a) to 230.10(c)	Applicable	Restrictions on Discharge: If there is a practicable alternative that would have a lesser impact on the wetlands, fill materials should not be discharged at the wetland. Any discharge that occurs should not cause a violation of a state water quality objective or a significant degradation of water quality.
	USACE, Public Notice 92-7: Interim Testing Procedures for Evaluating Dredged Material Disposed of in San Francisco Bay	Relevant and Appropriate	Reassures that all wetland creation, uplands disposal, or dredging projects complete certain notifications and listings.
	Section 401, 33 U.S.C. 1341	Applicable	State Water Quality Certification—wetland destruction, alteration would require a 404 permit and this certification assures that the proposed activity will comply with state water quality standards.
Coastal Zone Management Act	16 USC 1456	Relevant and Appropriate	Establishes the authority of the BCDC to regulate construction and other activities within 100 feet inland from highest tidal action.
Rivers and Harbors Act	33 CFR 323.1, Parts 320, 325, and 328	Relevant and Appropriate	Gives the USACE permitting authority over the discharge of dredged materials into the waters of the United States. In addition, the USACE must permit any work within historically navigable waters, including behind levees.

TABLE 3.3-2
Location-Specific ARARs for the Coastal Salt Marsh Sites

Source	Citation	ARAR Status	Description of ARARs
California Fish and Game Code	Section 1900—California Native Plant Protection Act Sections 3503.5, 3511, 4700, and 5050	Applicable	Contains standards for the identification and protection of plants by the act. Identifies and protects certain birds, mammals, reptiles, and amphibians.
California Fish and Game Code	[illegible]	Relevant and Appropriate	Action must be taken to preserve native plants. There can be no releases and/or actions that would have a deleterious effect on species or habitat. This section prohibits the taking, importation, or sale of any endangered or threatened species.
California Fish and Game Code	Section 2090 – 2096	TBC	These code sections comprise Article 4 of Chapter 1.5 of the California Endangered Species Act. These sections make provisions concerning Department coordination and consultation with the state and federal agencies and with project applicants.
California Fish and Game Code	[illegible]	Relevant and Appropriate	It is unlawful to deposit, permit to pass into, or place where it can pass into the waters of the state any material listed in the code. Actions must be taken if toxic materials are placed where it can enter waters of the state. There can be no releases that would have a deleterious effect on species or habitat.
Fish and Game Code Addenda	Fish and Game Commission Wetlands Policy (adopted 1987)	TBC	Actions must be taken to ensure that "no net loss" of wetlands acreage or habitat value occurs. Actions must be taken to restore and enhance California's wetland acreage and habitat value.

TABLE 3.3-3
Action-Specific ARARs for the Coastal Salt Marsh Sites

Source	Standard, Requirement, Criterion, or Limitation	ARAR Status	Description of ARARs
Federal			
Federal Clean Water Act	40 CFR 122—EPA Administered Permit Programs: The National Pollution Discharge Elimination System; 40 CFR 122.26; 40 CFR 122.41(d); 40 CFR 122.41(e); 40 CFR 122.44(d)	Relevant and Appropriate	Requirements to ensure storm water discharges from remedial action activities do not contribute to a violation of surface water quality standards. All reasonable steps must be taken to minimize or prevent discharges which have a reasonable likelihood of causing adverse impacts on surface water quality (40 CFR 122.41[d]). Discharges into surface water must achieve federal and state water quality standards (40 CFR 122.44[d]).
State of California Hazardous Waste			
California Hazardous Waste Control Law	Title 22, Division 4.5 (Environmental Health Standards for Management of Hazardous Waste), Chapter 11 (Identification and Listing of Hazardous Waste); 22 CCR 66261.1 through 22 CCR 66261.126	Relevant and Appropriate[a]	Defines hazardous waste and includes procedures for identifying hazardous waste.
California Hazardous Waste Control Law	Title 22, Division 4.5 (Environmental Health Standards for Management of Hazardous Waste), Chapter 12 (Standards Applicable to Generators of Hazardous Waste), Article 3 (Pre-Transport Requirements); 22 CCR 66262.30 through 66262.34	Relevant and Appropriate[a]	These standards establish requirements for generators of hazardous waste located in California. Prior to transportation, containers would be packaged, labeled, marked, and placarded in accordance with RCRA and Department of Transportation requirements. Accumulation of hazardous wastes onsite for longer than 90 days would be subject to RCRA requirements for storage facilities. These requirements are applicable to hazardous waste that is stored temporarily onsite prior to offsite disposal.
California Hazardous Waste Control Law	Title 22, Division 4.5 (Environmental Health Standards for Management of Hazardous Waste), Chapter 14 (Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities), Article 9 (Use and Management of Containers); 22 CCR 66264.171 through 22 CCR 66264.178	Relevant and Appropriate[a]	Soil will need to be managed as a hazardous waste only if it is classified as a hazardous waste. The treatment, storage, and disposal requirements for hazardous wastes include: using containers to store the recovered product that are compatible with this material (22 CCR 66264.172); using containers that are in good condition (22 CCR 66264.171); segregating the waste from incompatible wastes (22 CCR 66264.177); inspecting the containers (22 CCR 66264.176); providing adequate secondary containment for the water stored (22 CCR 66264.175); closing containers during transfer (22 CCR 66264.173); and removing all hazardous material at closure (22 CCR 66264.178).

TABLE 3.3-3
Action-Specific ARARs for the Coastal Salt Marsh Sites

Source	Standard, Requirement, Criterion, or Limitation	ARAR Status	Description of ARARs
California Hazardous Waste Control Law	Title 22, Division 4.5 (Environmental Health Standards for Management of Hazardous Waste), Chapter 14 (Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities), Article 12 (Waste Piles); 22 CCR 66264.250 through 22 CCR 66264.259	Relevant and Appropriate[a]	Delineates requirements for the management of waste piles for hazardous waste. This regulation is applicable to sites where excavated materials are classified as hazardous wastes and managed in waste piles. These regulations include 22 CCR 66264.251—Design and Operating Requirements; 22 CCR 66264.254—Monitoring and Inspection; 22 CCR 66264.256—Special Requirements for Ignitable or Reactive Waste; 22 CCR 66264.257—Special Requirements for Incompatible Wastes; 22 CCR 66264.258—Closure and Post-Closure Care; and 22 CCR 66264.259—Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027. If hazardous waste will be managed in accordance with the standards stated in these sections of the regulation.
California Hazardous Waste Control Law	Title 22, Division 4.5 (Environmental Health Standards for Management of Hazardous Waste), Chapter 18 (Land Disposal Restrictions), Article 1 (General); 22 CCR 66268.1 through 22 CCR 66268.9	Relevant and Appropriate[a]	Provides the purpose, scope, and applicability of LDRs. The title of the sections of the regulations are: 22 CCR 66268.3—Dilution Prohibited as a Substitute for Treatment; 22 CCR 66268.7—Waste Analysis and Record Keeping; and 22 CCR 66268.9—Special Rules Regarding Wastes that Exhibit a Characteristic. If hazardous waste is land disposed within the meaning of the LDRs, the hazardous waste will be managed in accordance with the standards stated in applicable sections of the regulation. Only applicable if hazardous wastes are disposed of or treated in an area not designated as a CAMU or disposed of or treated beyond the area of contamination.
California Hazardous Waste Control Law	Title 22, Division 4.5 (Environmental Health Standards for Management of Hazardous Waste), Chapter 18 (Land Disposal Restrictions), Article 3 (Prohibitions on Land Disposal); 22 CCR 66268.30 through 22 CCR 66268.35	Relevant and Appropriate[a]	These standards are applicable to sites where excavated material is classified as hazardous waste and is disposed of or treated in an area not designated as a CAMU. If hazardous waste is land disposed within the meaning of the LDRs, the hazardous waste will be managed in accordance with the standards stated in these sections of the regulation.
California Hazardous Waste Control Law	Title 22, Division 4.5 (Environmental Health Standards for Management of Hazardous Waste), Chapter 18 (Land Disposal Restrictions), Article 5 (Prohibitions on Storage); 22 CCR 66268.50	Relevant and Appropriate[a]	This standard is applicable to sites where excavated material is classified as hazardous waste. The standard provides prohibitions on storage of restricted wastes. If hazardous waste is land disposed within the meaning of the LDRs, the hazardous waste will be managed in accordance with the standards stated in these sections of the regulation.

TABLE 3.3-3
Action-Specific ARARs for the Coastal Salt Marsh Sites

Source	Standard, Requirement, Criterion, or Limitation	ARAR Status	Description of ARARs
State of California Air			
California Clean Air Act	BAAQMD, Regulation 6 (Particulate Matter and Visible Emissions)	Applicable	This regulation limits visible emissions, particulate emissions by weight, and emissions from sulfuric acid plants and sulfur recovery units. This regulation is applicable to any remedial action activity which may discharge air contaminants as defined by the rule.
	BAAQMD, Regulation 7 (Odorous Substances)	Applicable	This regulation limits odorous emissions per complaints received from persons on properties where the emissions did not occur and places maximum concentration limits on certain organic emissions.
State of California Surface Water, Groundwater and Soil			
California Water Code	SWRCB Order 99-08-DWQ (General order for stormwater management at construction sites)	Applicable	Must identify the sources of sediment and other pollutants that affect the quality of storm water discharges and implement practices to reduce these discharges. Storm water discharges from construction sites must meet pollutant limits and standards. The narrative effluent standard includes the requirements to implement BMPs and/or appropriate pollution prevention control practices. Inspections of the construction site prior to anticipated storm events and after actual storm events need to be conducted to identify areas contributing to storm water discharge and evaluated for the effectiveness of best management practices and other control practices. Applies to construction sites five acres or greater in size. It also applies to smaller sites that are part of a larger common plan of development or sale. Administrative portions of this permit are not applicable in accordance with CERCLA.
Porter-Cologne Water Quality Control Act (California Water Code Sections 13240)	San Francisco Bay Basin (Region 2) Water Quality Control Plan	Applicable	Establishes water quality objectives, including narrative and numerical standards that protect the beneficial uses of surface waters and groundwaters in the region. Establishes beneficial uses of affected water bodies.
Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240)	SWRCB Resolution 68-16	Applicable	The resolution establishes requirements for activities involving discharges of contamination directly into surface waters or groundwater. According to the RWQCB, this resolution requires that high-quality surface and groundwater be maintained to the maximum extent possible.

TABLE 3.3-3
Action-Specific ARARs for the Coastal Salt Marsh Sites

Source	Standard, Requirement, Criterion, or Limitation	ARAR Status	Description of ARARs
Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240)	SWRCB Resolution 68-16	Applicable	The resolution establishes requirements for activities involving discharges of contamination directly into surface waters or groundwater. According to the RWQCB, this resolution requires that high-quality surface and groundwater be maintained to the maximum extent possible.
Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240)	SWRCB Resolution 88-63	Applicable	Specifies that, with certain exceptions, all ground and surface waters have the beneficial use of municipal or domestic water supply. Applies in determining beneficial uses for waters that may be affected by discharges of waste. SWRCB Resolution 88-63 applies to all sites that may be affected by discharges of waste to groundwater or surface water. The resolution specifies that, with certain exceptions, all groundwater and surface waters have beneficial use of municipal or domestic water supply. These exceptions include, among others, if: (1) the TDS exceed 3,000 mg/L or (2) the water source does not provide sufficient water to supply a single well capable of producing an average sustained yield of 200 gallons per day. In the case of HAAF, both these exceptions apply; therefore, groundwater below the site may not be considered suitable for municipal or domestic water supplies.
Porter-Cologne Water Quality Control Act (California Water Code Sections 13140 - 13147, 13172, 13260, 13263, 13267, 13304)	Title 27 (Environmental Protection), Division 2 (Solid Waste), Chapter 1, Article 1 (General) 27 CCR 20090(d)	Applicable	Actions taken by or at the direction of public agencies to clean up from unauthorized releases are exempt from Title 27, except that wastes removed from the immediate place of release and discharged to land must be managed in accordance with classification (Title 27 CCR, Section 20200) and siting requirements of Title 27. Wastes contained or left in place must comply with Title 27 to the extent feasible.
Porter-Cologne Water Quality Control Act (California Water Code Sections 13140 - 13147, 13172, 13260, 13263, 13267, 13304)	Title 27 (Waters), Division 2 (Solid Waste), Chapter 3 (Criteria for waste Management Units), Article 2 (Waste Classification and Management) 27 CCR, 20200, 20210, 20220, and 20230	Applicable	Waste Classification: Wastes must be classified as: hazardous waste, designated waste, nonhazardous solid waste, or inert waste. A hazardous waste can only be discharged to a Class I facility (unless a variance is applicable under Title 22 regulations). A designated waste can be discharged to a Class I or Class II facility. A nonhazardous solid waste can be discharged to a Class I, II, or III facility. Inert wastes do not need to be sent to a classified facility.

TABLE 3.3-3
Action-Specific ARARs for the Coastal Salt Marsh Sites

Source	Standard, Requirement, Criterion, or Limitation	ARAR Status	Description of ARARs
Other State of California Stat			
Resolution 92-145	Interim Final Sediment Screening Criteria and Testing Requirements for Wetland Creation and Upland Beneficial Reuse dated December 1992, Resolution No. 92-145 (referenced in the San Francisco Bay Region Water Quality Control Plan, approved in 1995).	TBC	In this Resolution, the RWQCB established screening criteria guidelines to be used to evaluate the appropriateness of using dredged material for beneficial purposes.
	Draft Staff Report titled Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines dated May 2000.	TBC	This document is an update of the December 1992 document described above. These guidelines fall into the category of TBC.

[a] The Army interprets these as relevant and appropriate; DTSC interprets them as applicable.