CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2005-0034

WASTE DISCHARGE REQUIREMENTS AND WATER QUALITY CERTIFICATION FOR:

UNITED STATES ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT; CALIFORNIA STATE COASTAL CONSERVANCY

HAMILTON WETLAND RESTORATION PROJECT NOVATO, MARIN COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Water Board or the Board, finds that:

Purpose of Order

1. This Order serves as Waste Discharge Requirements and Water Quality Certification under Section 401 of the Federal Clean Water Act for the placement and discharge of sediments for use in a wetland restoration project. This Order also provides monitoring and reporting requirements, including effluent limits, for the offloading and placement of dredged material, the discharge of return-flow or "decant" water, and the restoration of the wetlands. This Order also supercedes Provision 5.b of Order 96-113, pertaining to mitigation for wetland impacts at the site due to the placement of a landfill cap on an adjacent property.

Dischargers

2. As the current owner of the property, the California State Coastal Conservancy (SCC), an agency of the State of California, is hereinafter referred to as a Discharger. The SCC is the local sponsor of the wetland restoration project and shares in the cost of the construction of the wetlands.

3. As the operator of the site, the United States Army Corps of Engineers, San Francisco District (Corps) is hereinafter referred to as a Discharger. The Corps is responsible for the planning, design and construction of the project.

4. Collectively, the Corps and the SCC are referred to in this Order as the Discharger.

Certification Application and Report of Waste Discharge

5. On March 16, 2005, the Corps and the SCC jointly submitted an application for a Section 401 Water Quality Certification and a Report of Waste Discharge for the proposed placement of sediment dredged from San Francisco Bay at the site of the Hamilton Wetland Restoration Project (interchangeably, HWRP or project).

Site Description and Location

6. The site of the HWRP is the former Hamilton Army Airfield (HAAF), located in Novato, Marin County (refer to Figure 1). The HWRP was authorized by the United States Congress in Section 101(b) of the Water Resources Development Act of 1999. The project is located on 630 acres of diked and subsided bayfront property and is located adjacent to San Pablo Bay, in the northern portion of San Francisco Bay (refer to Figure 2). A portion of the proposed project includes a one-acre channel cut through existing tidal marshes. Former agricultural lands and salt marshes bound the property to the north and south. A 319-acre parcel to the north of the site is owned by the California State Lands Commission (SLC parcel) and was previously owned and operated by the Army as a rifle range and an antennae field with associated support buildings. The U.S. Navy currently owns an 18-acre parcel (Navy Ballfields parcel) to the south of the site. These two parcels are part of the current congressionally authorized Hamilton Wetland Restoration Project but were not included in the Discharger's application because site remediation activities are not completed and the State of California is not currently the owner of the Navy Ballfields parcel. In addition, there is a parcel of land north of the project, known as the Bel Marin Keys Unit V that is not part of the HWRP. The SCC and Corps prepared a General Reevaluation Report in July 2002 evaluating the expansion of the HWRP to include this parcel. The proposed expansion would increase the total acreage of the HWRP to 2,598 acres, and is anticipated to be part of the HWRP upon congressional approval of a future Water Resources Development Act.

Site History

7. The site, previously known as Marin Meadows, was used as ranch and farm land since it was part of a Mexican Land Grant. In 1932, the U.S. Army Air Corps constructed Hamilton Army Airfield. Military operations began in December 1932, first as a base for bombers, later as a base for transport and fighter aircraft and then for Army and Army Reserve operations and training. In 1988, the property was declared surplus property under the Base Realignment and Closure Act (BRAC). In 2003, title to the property was transferred from the Army to the California Coastal Conservancy for use in wetland creation, with the requirement that the Army complete site cleanup actions. Since the transfer in 2003, the Army has been conducting cleanup activities as required under Board Order R2-2003-0076, and anticipates completing its removal actions by October 2005.

Current Regulatory Status

8. Board Order R2-2003-0076 established Site Cleanup Requirements for this site to ensure completion of all actions required under a Remedial Action Plan/Record Of Decision (RAP/ROD) signed by the U.S. Army, the Department of Toxic Substances Control and the Water Board. At the time of transfer of the property to the Coastal Conservancy, the Water Board became the lead State Agency for the property. Board Order R2-2003-0076 and the RAP/ROD required removal of contaminated sediments in the existing coastal salt marsh at Hamilton, resulting in impacts to about seven acres of wetlands. The creation of wetlands as a part of this project mitigates for these impacts.

9. In the 1990's, a 12-acre wetland site was constructed on the property as required under Board Order 92-029 and subsequent Order 96-113, to mitigate for impacts to wetlands due to construction of a landfill cap on Landfill 26, adjacent to the HWRP property. This Order supercedes Provision 5.b of Order 96-113, requiring that a Closure Certification Report include documentation of the implementation of the approved wetland mitigation plan (Formerly Provision 8 of Board Order 92-029).

10. The Corps, as the federal lead agency for the project, initiated formal consultation with the United States Fish and Wildlife Service (Service) and is continuing informal consultation with National Oceanic and Atmospheric Administration (NOAA) Fisheries and the California Department of Fish and Game.

11. The San Francisco Bay Conservation and Development Commission (BCDC), a State regulatory agency, is responsible for issuing a permit and a Consistency Determination (CD) to the State Coastal Conservancy and the Corps, respectively. The CD evaluates the consistency of the federal project with the Coastal Zone Management Act. BCDC also has an active role in the planning and design of the project. One element of BCDC's permit/CD will address public access via the Bay Trail.

Project Description

12. The Discharger proposes to construct the HWRP using dredged material from various Bay Area dredging projects (See Figure 3 for plan view of project). The HWRP has several planned elements: tidal wetland, seasonal wetlands, including upland ponds, upland grassland, tidal ponds, tidal pannes, a wildlife corridor, intertidal channel and mudflat area. There are an existing 124.5 acres of wetlands onsite and 543 acres of grasslands, uplands or developed lands (refer to Table 1). A total of 547 acres are planned for restoration as wetlands. Of the existing 124.5 acres of wetlands, 40 acres will be directly impacted by the project and 85 acres in the existing coastal salt marsh may be impacted. Three acres of the existing coastal salt marsh will be excavated for the levee breach.

13. The project would contribute to the restoration of priority habitats for San Pablo Bay (Goals Project, 1999 – references provided as an attachment to this Order), including tidal marshes, tidal sloughs, subtidal channel and seasonal wetlands. The restoration of

these habitats on the project site would provide ecological benefits for many target species, including California Clapper Rail, California Black rail, Chinook salmon, steelhead, Salt Marsh Harvest Mouse, San Pablo song sparrow, Salt Marsh Common Yellowthroat, shorebirds, wading birds and waterfowl, and others.

14. Specific project objectives detailed in the Discharger's permit application include:

    a. To design and engineer a restoration project that stresses simplicity and has little need for active management following placement of dredged material and breaching to allow tidal inundation.
    b. To demonstrate beneficial reuse of dredged material.
    c. To recognize existing site opportunities and constraints, including the runway and remediation of contaminated areas, as integral components of design.
    d. To ensure no net loss of wetland habitat functions.
    e. To create and maintain wetland habitats to sustain viable wildlife populations, particularly for Bay Area special-status species.
    f. To include buffer areas along the upland perimeter of the project area, particularly adjacent to residential areas, so that wildlife will not be impacted by adjacent land uses.
    g. To be compatible with adjacent land uses and wildlife habitats.
    h. To provide for public access that is compatible with protection of resource values and regional and local public access policies.

HWRP Design Overview

15. **<u>Seasonal Wetland Design and Layout</u>**

    Seasonal wetlands will be created in two locations on the HWRP site. Figures of the two seasonal wetland areas, the panhandle seasonal wetland and the southern seasonal wetland are provided as Figures 4 and 5, respectively. The target habitat will be unvegetated to sparsely vegetated seasonally-ponded wetlands suitable as shorebird habitat, along with vegetated transitional wetland/upland habitat. Water to the seasonal wetland areas will come from precipitation, surface water runoff and tidal inundation on extreme spring high tides. The salt from the infrequent tidal inundation as well as the periodicity and duration of inundation will serve to limit the introduction of invasive plant species. Some ponds will be placed at higher elevations and will not be inundated.

    Board Order R2-2003-0076 required excavation of DDT and PAH-contaminated soils from the planned tidal area to an area where three feet of stable cover could be maintained. These soils have been moved to the planned panhandle seasonal wetland and will be buried beneath 4-6 feet of cover material, 2 feet of which will be compacted fine-grained material. The gentle topographical slope, compacted nature of the soil material and limited conditions for rapid draw down of water levels combine to protect the soils interior to the seasonal wetland complex from channel cutting. Incursion of tidal channels into the seasonal wetland site is prevented by the containment berm (described in finding 16 below) and the storm water/tidal channel berm.

A stormwater/tidal channel will be engineered to flow through the panhandle seasonal wetland. A berm, separating the seasonal wetland from the stormwater/tidal channel will be constructed from compacted muds and sands excavated in the construction of the stormwater/tidal channel. This berm will be 40 feet wide with a crest elevation of 8.5 feet North American Geodetic Vertical Datum of 1988 (NAVD).

A wildlife corridor is a design element of the HWRP and encompasses 34 acres along the length of the existing City of Novato's (NHP) levee. Figure 6 is a cross section of the design for the wildlife corridor. The 300-foot wide gently sloping wildlife corridor will be supported by a toe berm also referred to as the wildlife berm. The wildlife corridor itself is considered transitional habitat and is expected to provide refuge for endangered species. The wildlife berm will provide a level of protection to the wildlife corridor from wave and channel cutting. Further protection from waves will be provided by the accreting salt marsh plain. At the time of levee breach, the project anticipates that the fill in the tidal marsh will have initially consolidated to about 4.7 feet NAVD 88. The slope of the wildlife corridor is planned to be gradual, approximately 125:1. The wildlife berm will be graded to this same slope, from the marsh plain up to the City of Novato's levee. The grading will occur prior to levee breach. Portions of, or all of, the wildlife corridor may be planted. The planned design requires surcharging the NHP levee by the hydraulic placement of dredged materials onto the side slope of the levee for construction of the upland wildlife corridor and southern seasonal wetland areas. The Discharger is currently conducting a geotechnical evaluation of the planned design for the wildlife corridor.

The bulk of the fill for the panhandle seasonal wetland and the wildlife corridor is expected to be sand from the Port of Oakland 50-Foot Project, described in Finding 18. This sandy material will be topped with approximately two additional feet of finer sediments more suitable to vegetation. Approximately 2.1 million cubic yards of dredged material will be placed to create the seasonal wetland areas and wildlife corridor. Mechanical rehandling of the material will be necessary to form the desired ponds, islands and drainage system features, which will be part of the seasonal wetland design.

16. **Tidal Wetland Design and Layout**

An estimated 5 million cubic yards of dredged material will be placed in the planned tidal wetland area, which is currently diked, subsided baylands. The outboard levee will be breached to tidal action after a period of consolidation, approximately one year. The tidal wetland areas will be filled to elevations that will consolidate to +2.65 to +4.65 feet NAVD, primarily with fine-grained maintenance dredging material. These fill elevations are planned to be 1 to 1.5 feet below marsh plain elevations to allow sediments borne on the tide to naturally accrete, completing the filling of the site. Proper development of the tidal marsh requires that the fill elevation be low enough to allow additional sedimentation and the development of tidal channels on the site after breaching.

Intertidal berms will be built within the tidal area to reduce levee erosion by decreasing internal wave heights, reducing wave runup and promote sedimentation by limiting internal wave energy (Figure 8). A gap of at least 250 feet will be established between the intertidal berms and the site perimeter to limit predator access. Intertidal berm number 8 is an exception to the 250 ft gap because this small berm is considered necessary to prevent

a channel from forming in this area. Intertidal berms will be constructed to settle to an elevation similar to the final tidal marsh plain. Coyote Brush (Baccharis species) will be planted at their crests to aid in reducing wave energy. They will not be visible in the marsh plain when it is fully developed.

A containment berm will be built between the panhandle seasonal wetland and the tidal wetland to control tidal inflows. This containment berm will be constructed to achieve a design crest elevation of 8.5 feet NAVD after subsidence over a 30-50 year consolidation period. Initially the levees will be built higher than this design elevation. The containment berm is anticipated to be erosion resistant and to control the rate of spring (extreme high) tide flow rates over the levee crest. The 10-year and 100-year flood elevations are 8.8 and 9.8 feet NAVD, respectively.

A channel will be constructed in the containment berm prior to levee breach. An adjustable weir in this channel will allow the needed spring tidal flows into and out of the seasonal wetland area while controlling the potential for erosion. As water levels fall on outgoing tides, discharge will be controlled via the weir precluding erosional damage to the containment berm and allowing for variable ponding in the seasonal wetlands for vegetation and habitat control. A road suitable for maintenance vehicles and equipment will be maintained on the crest of this berm providing access for site management and maintenance.

HWRP Construction Overview

17. The construction of both seasonal and tidal wetlands as planned by the HWRP requires placement of up to 7.1 million cubic yards of dredged material from San Francisco Bay. The Discharger will employ an off-loader and barge facility (off-loader) located in San Pablo Bay approximately five miles off-shore of the HWRP, where the Bay is sufficiently deep for navigation (refer to Figure 8). The sediments will be transported to the off-loader in barge scows escorted by tugboats. Each scow will carry between 3,000 to 8,000 cubic yards of sediment. Hopper dredges may be used in addition to barge scows to transport sediments. Water from San Pablo Bay will be pumped to the off-loader, mixed with the sediment from the barge scows, and the resulting slurry will then be pumped through 35,000 feet of pipeline to the HWRP site. A portion of the pipeline was constructed in 2002 across an existing 1700 feet of coastal salt marsh. Flexible pipelines and pumps will be utilized to move sediment across the site and place sediment into containment cells also referred to as primary placement cells. Millions of gallons of water are required to pump the dredged material through the pipeline. The excess water will then become return-flow or "decant" water. The discharge of the decant water will occur via an existing stormwater outfall pipe located adjacent to the outboard levee.

Once sediment placement is complete, the water management system (e.g., weirs, water control structures) will be dismantled and the existing outboard levee will be breached to allow full tidal exchange with San Pablo Bay. The Corps will monitor the project for 13 years post-breach and conduct any required maintenance after which the SCC will continue to monitor the development of the wetlands and maintain the site.

Sources of Dredged Material

18. Dredged material for the wetland restoration project is anticipated to come from the Oakland Harbor Navigation Improvement (Port of Oakland 50-Foot Project) as well as other sources. The Port of Oakland 50-Foot Project is a congressionally authorized (Water Resources Development Act of 1999) dredging project to deepen channels of the Oakland Harbor and port-maintained births to a depth of 50 feet below mean lower low water. The Port of Oakland material is primarily Merritt sands, loose, well-sorted fine to medium-grained sand with silt. Other sources of dredged material include San Francisco Bay federal maintenance projects such as the Oakland Harbor, Richmond Harbor, Pinole Shoal Channel, Redwood City Harbor, and Petaluma River Across the Flats Channel; and non-federal permitted projects such as the Bel Marin Keys Community Services District, Larskpur, Chevron, and others.

Dredged Material Testing

19. All dredging in the Bay Area is regulated by the agencies that make up the Dredged Material Management Office (DMMO). The project will adhere to testing requirements set forth by the DMMO. Sediments must be analyzed for contaminants prior to approval of each dredging project. The Discharger and Water Board will review sediment testing data from pending dredging projects to evaluate their conformity with the Dredged Material Acceptance Criteria (DMAC) given in this Order's Specification B.4. The Water Board intends to make sediment recommendations available to the public via the DMMO. The Port of Oakland material was evaluated in 1998 in anticipation of its use for constructing wetlands and it was found to be suitable (Letter from Corps to Port of Oakland, dated December 9, 1998). It will not be reevaluated for its suitability as part of this Order.

Water Quality Concerns

20. Dredged material approved for beneficial reuse at the project from the various sources identified in Finding 18, has been or will be characterized during the pre-dredge testing phase and must be shown to meet DMAC to be suitable for placement in the biologically active zone (the layer of sediment where most organisms live and/or feed). Impacts to water quality resulting from dredged material placement at the site are expected to be mostly related to the potential for suspended solids in the decant water causing excess turbidity in the vicinity of the discharge point.

    The pollutants of concern in the dredge slurry are expected to be bound to suspended sediment particles. Effluent limitations for total suspended solids (TSS) and/or turbidity can be used as surrogate parameters for the quality of the decant water. To achieve desired effluent water quality, the mean residence time in the final settling basin must be greater than the time required for solids to settle out of suspension. The Self-Monitoring Program attached to this Order requires monitoring the dredged material decant water continuously for TSS and periodic monitoring for other water quality parameters, prior to and during discharge into San Pablo Bay.

21. **Mercury methylation:** Mercury occurs naturally in the San Francisco Bay environment and has been introduced as a contaminant in various chemical forms from a variety of anthropogenic sources. Ambient levels of sediments in San Francisco Bay are elevated in total mercury above naturally occurring background levels. Although mercury often resides in forms that are not hazardous, it can be transformed through natural processes into toxic methylmercury. Natural accretion processes in salt marshes continually supply fresh layers of sediment that release mercury in a form that can become biologically available for mercury-methylating bacteria. The resulting concentration of methylmercury is dependent on numerous variables: salinity, pH, vegetation, sulfur, dissolved organic carbon, redox potential, and seasonal variations in each of the identified variables.

    Placement of dredged material at Hamilton for restoration purposes has the potential to increase the availability of mercury for methylation. However, it is not clear at this time whether the act of placement causes more methylation than the natural methylation processes. In addition to dredged material placement, natural sedimentation occurring from sediments brought in on the tides from nearby Novato Creek or San Pablo Bay may also provide a source of mercury that may be methylated in the HWRP. Although models are being developed to address these issues, it is not currently possible to estimate the methylmercury concentrations, bioaccumulation, and biomagnification in the food chain. The potential for increased methylmercury production is identified as a significant unavoidable impact of the project (HWRP SEIR 2002). The project will develop an overall wetland monitoring and adaptive management plan (MAMP), an element of which will address concerns about the potential for methymercury to impact beneficial uses. The MAMP is required in Provision E.7 of this Order.

22. **Mosquito abatement:** Of the wetland habitats in the project areas, only brackish marsh and seasonal wetlands are considered to have the potential to produce problem numbers of mosquitoes. The HWRP is in the jurisdiction of the Marin Sonoma Mosquito Abatement District (District). The project is coordinating with the District during the design, implementation and operation phases of the project to mitigate for any increases in potential mosquito breeding habitat at the site (HWRP EIR 1998).

Construction Sequencing

23. The full restoration of tidal wetlands is estimated to take 30 years. Initial site construction is estimated to take 6-8 years to complete and would end with the breaching of the outboard levee. Site construction tasks are provided in the Table below.

Project Tasks through Levee Breach in 2014.

Completed Tasks
A. Installation of the outboard marsh pipeline
B. Demolition of majority of abandoned buildings on the Army and Navy parcels.
C. Construction of the Bulge Levee and Pacheco Pond Levee.

D. Removal of soils with low level of PAHs and DDT from the tidal wetland area to the planned seasonal wetland in the panhandle area. This work was required under Board Order R2-2003-0076 and the 2003 RAP/ROD and was completed in February 2005.
Planned 2005 Tasks
E. Construction of the N-1 Levee and Containment Berm – Receive Port of Oakland and Bel Marin Keys Community Services District dredged material.
F. Construction of the Intertidal Berms, Wildlife Corridor Berm and Settling Basin #1.
G. Sampling and characterizing the outboard levee.
Planned 2006 – 2013 Tasks
H. Construction of the South Levee in the tidal wetland area. Demolition work to remove some revetments and part of the main runway.
I. Relocating the Novato Sanitary District (NSD) dechlorination facility. NSD will construct the replacement facility in May 2006.
J. Construction of the N-2 levee and all remaining site features in the planned tidal wetland area. Placement of dredged material in the tidal area.
K. Completion of the seasonal wetland in the panhandle area, including placement of dredged material.
L. Construction of the seasonal wetland in the Navy parcel, including placement of dredged material.
Planned 2014 Tasks
M. Lowering the outboard levee, cutting a channel through the outboard marsh and breaching the outboard levee for the primary channel. This work also includes the removal of the pump houses.

24. Sediment placement is planned to start with placement of sandy materials from the Port of Oakland 50-Foot Project in the seasonal wetland area. The Bel Marin Keys Community Services District may request placement of dredged materials from Novato Creek and/or the North Lagoon in 2005-2006 as well. The HWRP site is large enough to start dredged material placement before the end of all site preparation. There are approximately two to three years of overlap in which dredged material will be placed in the northern area of the site while the southern area of the site will be prepared for the subsequent placement of additional dredged material.

25. The channel breach is the last step in the construction and will consist of the following steps: (1) excavating a channel in the outboard marsh leading up to the breach, (2) lowering the outboard levee and (3) excavating the breach. The outboard levee will be breached at the location shown in Figure 7. Levee Breach may occur within 8 years, despite less placement of dredged material than the 7.1 million cubic yards planned, with the Executive Officer's approval as required in Specification B.3 of this Order. Breaching would occur in order to ensure that marsh establishment is not delayed. When it is breached, most of the outboard levee on the airfield would be lowered to an elevation similar to the elevation of the marsh plain adjacent to the levee.

26. After the breach of the levee it is anticipated that the following would occur:
    a. Natural sediment accretion to mean high water level (year 7 through year 11)
    b. Development of mean high water marsh plain (year 12 through year 21), and
    c. Development of mean higher high water marsh plain (year 17 through year 31).

Off-Loader and Barge Facility Details

27. The current off-loader system design includes the off-loader, main off-loader barge and 6 adjacent mooring and fleeting barges. One or two booster pump barges will be required to pump material onto the site. The off-loader system with 2 booster pump barges will be placed in water depths of approximately –28 feet MLLW. The off-loader and barge facility will be anchored by steel piles or dolphins (pile clusters). The first 2,000 feet of pipeline adjacent to the off-loader will be floating. Portions of the rest of the planned pipeline will be anchored to prevent floating or movement that might occur when the pipeline is not in use. Anchoring will be accomplished using weighted collars or similar anchorage method. The off-loader would be powered by electricity from shore, or by onboard diesel powered equipment, or a combination of both, and could be in operation for as long as 8 years.

Impacts to Navigation, Fisheries and Water Quality from Off-Loader

28. The off-loader and barge facility is located north of the main San Pablo Bay Straits ship channel where there should not be any impacts to large deep draft vessels using the main ship channel. Smaller draft commercial and recreational vessels have ample room to navigate around the off-loader. The floating portion of the pipeline will be lighted as will the off-loader facility to prevent navigation accidents.

    The off-loader will likely be built on piles that are driven into bay mud. Pile-driving equipment may produce localized noise that may affect listed fish species and marine mammals in areas immediately adjacent to San Pablo Bay. Construction of the off-loader may result in mortality of individual fish and harassment of individual marine mammals present in the immediate vicinity of pile-driving activity (HWRP SEIR 2002). The Discharger will consult with NOAA Fisheries regarding the planned pile driving and implement the appropriate mitigation measures to reduce impacts by either decreasing the level of underwater sound or decreasing the number of fish exposed to the sound.

In order to prevent entrainment and impingement of fish and other aquatic organisms at the off-loader, the intake pump placed in San Pablo Bay will have a mesh size of 3/32 inches and an approach velocity of 0.33 feet per second.

Implementation of the project would not result in a measurable change in tidal fluctuation or salinity of waters in San Pablo Bay (HWRP EIR 1998).

Decant Water Discharge Description

29. The decant water discharge point is located adjacent to the levee at the existing pump station outfall location. Currently, stormwater from the inboard residential and runway areas is pumped over the levee into San Pablo Bay. Figure 7 shows the location of the discharge point. The discharge will be via a single 30-inch diameter pipe.

Decant Water Discharge Water Volumes

30. For 2005 to 2006, it is expected that 0.75 to 2.5 million cubic yards (MCY) of fine sand and fine-grained dredged material from the Port of Oakland 50-Foot project will be placed at the HWRP. Additionally 250,000 to 350,000 cubic yards of fine-grained dredged sediments from the Bel Marin Keys Community Service District may be delivered to the site in fall 2005 and early 2006. It is anticipated that fine-grained dredged material from navigation projects will be brought to Hamilton in subsequent years; on average about 1 to 2 million cubic yards of sediments that are dredged from San Francisco Bay for navigational purposes each year would be available to Hamilton.

For each 1.0 MCY of dredged material imported into the project, 3 to 20 MCY of process water will be required to slurry and transport the material via pipeline based on a solids ratio of 5% to 20%; sand requires a greater process water volume than fine-grained materials. The process water to create the slurry will be imported from San Pablo Bay at the location of the off-loader. This water will be decanted and released in a nearly continuous process. It is estimated that the rate of discharge will be about 20 cubic feet per second (cfs) (HWRP EIR 1998 and HWRP 2005 Permit Application) or about 20 million gallons per day, but no more than a maximum discharge rate of 50 cfs or 33 million gallons per day.

Decant Water Discharge Management

31. The off-loading of dredged material involves mixing the material with Bay water to form a mixture that could be as high as 95 percent water and 5 percent solids to allow pumping of the slurry mixture onto the site. In practice, the dredged material slurry will likely vary from 5% to 25% solids and 95% to 75% bay water. The dredged material slurry will be pumped through a pipeline in San Pablo Bay to a connecting 30-inch existing steel pipeline across the Hamilton Coastal Salt Marsh and onto the former airfield via a flexible plastic pipeline. The water will be contained in primary settling ponds using containment cells and will then be discharged into secondary settling ponds to clarify the water prior to discharge to San Pablo Bay (refer to Figure 7). One of the planned secondary settling ponds, currently referred to as Nina's Pond, was a borrow pit for the Hamilton Landfill 26 cap. This Order's Self Monitoring and Reporting Program requires

the Discharger to monitor at any secondary settling basin weir, or if none, at the weir of a containment cell and at the receiving water. A portion of the area planned for tidal marsh restoration may be used as one large containment cell that drains to a secondary settling pond close to the point of discharge for the decant water.

The discharge rate is anticipated to be on average about 20 million gallons per day with a maximum rate of 33 millions gallons per day. Temporary portable pumps will also be utilized whenever necessary to pump excess water from the perimeter drainage ditch or for recirculating water to use for soil conditioning of the imported dredged material. The dredged material will need to be kept wet to prevent drying and cracking. The adjustable discharge weirs from the containment cells and the secondary settling ponds will be designed to release only the upper portion of the water column to maximize fine particle settlement. The adjustable weirs will control the water elevation of the cells or secondary ponds prior to discharge.

Non-decant Water Management

32. Stormwater drains from 600 acres of adjacent property: the Landfill 26 and Reservoir Hill areas, housing subdivisions and other former HAAF property. Stormwater from the housing subdivisions is lifted onto the site via two pump stations. Total surface water flows were calculated at about 390 acre-feet per year or 128 million gallons per year (HWRP EIR 1998). Mean annual rainfall at the site is approximately 26 inches. This amount of surface water is small compared to the amount of water expected from the dredged material slurry. The Discharger will manage these stormwater flows during construction of the project, and the project is being designed to handle these flows after the wetlands are created. Post-construction, the water will be conveyed via swales to the tidal wetland. In addition, a pump station to be operated by the City of Novato will be built to drain the runoff from Landfill 26 and adjacent areas.

Local Flood Conditions

33. The flood control and drainage facilities in the airfield parcel previously affected the hydrologic characteristics of surrounding properties, including the New Hamilton Partnership development, the St. Vincent's and Las Gallinas Sanitary District properties, Bel Marin Keys Unit V, Landfill 26, Ignacio Reservoir, and the SLC parcel. Currently the airfield receives drainage only from New Hamilton Partnership development, Landfill 26, and the SLC parcel. Protection of these lands from inundation by San Pablo Bay requires interim site drainage activities and construction of a system of new perimeter levees.

The project will continue to operate the existing drainage pumps and/or supply other drainage pumps until all the perimeter levees are constructed. The project is also designing the seasonal wetland areas to continue to receive all the current drainage waters and pass them into the tidal wetland areas.

Applicable plans, policies and regulations

34. Basin Plan: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on January 21, 2004. This updated and consolidated plan represents the Board's master water quality control planning document. The State Water Resources Control Board and the Office of Administrative Law approved the revised Basin Plan on July 22, 2004, and October 4, 2004, respectively, and the U.S. Environmental Protection Agency, Region IX approved it on January 5, 2005. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. The Basin Plan also identifies discharge prohibitions intended to protect beneficial uses.

35. California Toxics Rule: On May 18, 2000, the U.S. EPA published the *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (Federal Register, Volume 65, Number 97, 18 May 2000). These standards are generally referred to as the CTR. The CTR specified water quality criteria (WQC) for numerous pollutants, of which some are applicable to the discharges covered by this Order.

36. Beneficial Uses: The potential beneficial uses of groundwater underlying and adjacent to the site include:

    - Industrial process water supply
    - Industrial service water supply
    - Agricultural water supply
    - Municipal and Domestic Supply
      (Deeper aquifers only; shallow zones are brackish)

    The existing and potential beneficial uses of San Pablo Bay and its tributaries include:

    - Industrial process supply or service supply
    - Water contact and non-contact recreation
    - Wildlife habitat
    - Fish migration and spawning
    - Navigation
    - Estuarine habitat
    - Shellfish harvesting
    - Preservation of rare and endangered species
    - Ocean, commercial and sport fishing

37. State Wetland Policy: This project is consistent with the Basin Plan Wetland Fill Policy that establishes that there is to be no net loss of wetland acreage and no net loss of wetland value when the project and any proposed mitigation are evaluated together, and that mitigation for wetland fill projects is to be located in the same area of the Region.

38. This project is also consistent with the goals of the following components of State Wetlands Policy: California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) includes ensuring "no overall loss" and achieving a "...long-term net gain in the quantity, quality, and permanence of wetland acreage and values...." Senate Concurrent Resolution No. 28 states that "it is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." Section 13142.5 of the CWC requires that the "[h]ighest priority shall be given to improving or eliminating discharges that adversely affect...wetlands, estuaries, and other biologically sensitive areas."

39. Comprehensive Conservation and Management Plan: The HWRP is consistent with the objectives of the (CCMP, 1993) for the San Francisco Estuary, including, creation of wetland resources and the reuse of dredged material for projects such as wetlands creation/restoration, and upland building material, where environmentally acceptable.

40. Long Term Management Strategy for dredged material disposal (LTMS): The HWRP is consistent with the goals of LTMS. The LTMS programmatic EIS was signed in July 1999 committing the Corps to implement beneficial reuse options in order to decrease in-Bay disposal of dredged material. The LTMS agencies (Corps, Water Board, USEPA, BCDC) signed the LTMS Management Plan in January 2002, which identified the HAAF site as one that was found to be highly feasible for beneficial reuse of dredged material.

41. San Francisco Bay Area Wetlands Ecosystem Goals Project: The HWRP is consistent with the recommendations of the 1999 Goals Report for restoration of a wide, continuous band of tidal marsh along the bay front between Black Point and Gallinas Creek ... and to ensure a natural transition to uplands throughout and provide an upland buffer outside the baylands boundary.

California Environmental Quality Act (CEQA)

42. The California Environmental Quality Act (CEQA) requires all projects approved by State agencies to be in full compliance with CEQA. The SCC, as lead agency, prepared and certified a Final Environmental Impact Report/Environmental Impact Statement (HWRP EIR) for this project in December 1998, a July 2002 Supplemental Environmental Impact Report/Environmental Impact Statement (HWRP SEIR) and a May, 2003 Supplemental Environmental Impact Report/Environmental Impact Statement (BRAC SEIR) required for the final remedial actions associated with the property transfer. The Water Board considered the environmental impacts of the project as shown in the HWRP EIR, BRAC SEIR and HWRP SEIR. The HWRP SEIR identified two significant unavoidable impacts that could not be mitigated for: 1) The potential for increased methylmercury production is identified as a significant unavoidable impact of the project (HWRP SEIR 2002); 2) Construction of the off-loader may result in mortality of individual fish and harassment of individual marine mammals due to pile-driving activity. The Water Board agrees that these significant impacts are unavoidable but has determined that the benefits of the project outweigh these unavoidable adverse environmental effects and are thus considered acceptable. As the responsible agency, the Water Board has the authority and responsibility to require additional mitigation

measures within its powers to impose. The Water Board finds that the Discharger shall consult with NOAA Fisheries to lessen the significant unavoidable impact of pile driving for the off-loader facility. Other than these two impacts, all other significant impacts identified under CEQA have been mitigated to less than significant levels.

Additional Findings

43. The following standard conditions apply to this Order:

    a. Every certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to CWC §13330 and 23 CCR §3867.

    b. Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR §3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

    c. Certification is conditioned upon total payment of any fee required pursuant to 23 CCR §3833 and owed by the Discharger.

44. An annual fee for Waste Discharge Requirements pursuant to Section 13260 of the California Water Code is required.

Notification and Public Notice

45. The Water Board notified the Discharger and interested agencies and persons of its intent to issue waste discharge requirements and provided them with an opportunity to submit their written views and recommendations.

46. The Board, in a public meeting, heard and considered all comments pertaining to the proposed waste discharge requirements for the project.

It Is Hereby Ordered pursuant to the provisions of Division 7 of the California Water Code and regulations, and guidelines adopted thereunder, that the Discharger, its agents, successors, and assigns shall comply with the following:

A. PROHIBITIONS

1. It is prohibited to discharge decant water at a location or in a manner different from that described in the findings of this Order.

2. Discharges of water, materials, or wastes other than decant and return flow-water, which are not otherwise authorized by this Order, are prohibited.

3. The direct discharge of wastes to surface waters or surface water drainage courses is prohibited, except as authorized in this Order.

4. The activities subject to these requirements shall not cause a condition of pollution or nuisance as defined in Sections 13050 (l) and (m), respectively, of the California Water Code.

B. SPECIFICATIONS

1. Appropriate soil erosion control measures shall be undertaken and maintained to prevent discharge of sediment to surface waters or surface water drainage courses. Appropriate erosion control measures shall be taken to stabilize and prevent erosion from the outsides of perimeter containment berms. Dredged material shall be fully contained to prevent any wind transport, surface runoff or erosion into waters of the state. At no point within the containment areas shall there be erosion of underlying contaminated site soils requiring cover under the RAP/ROD nor shall the elevation of sediment exceed that of the containment berms.

2. The integrity of the dredged material transport pipeline shall be maintained from the intake at the dredged material offloading facility in San Pablo Bay to the point of discharge at the project site. At no point other than the designated discharge point shall water or sediment be allowed to leak from or be intentionally released from the pipeline. The Discharger shall notify the Water Board immediately of any failure occurring in the dredged material transport pipeline.

3. Levee breach shall not occur until approval by the Executive Officer of the technical report required under Task 7 of Board Order No. R2-2003-0076. The Technical report shall be submitted at least 60 days prior to the planned levee breach.

4. Dredged Material Acceptance Criteria: Data characterizing the quality of sediments proposed for placement at the project site shall be submitted for Water Board review and approval prior to placement. This review shall be coordinated through the multi-agency DMMO, of which the Water Board is a member. Sediment characterization shall follow the protocols specified in:
   a. The DMMO guidance document, "Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region" (U.S. Army Corps of Engineers Public Notice 01-01, or most current version) with the exception that the water column bioassay simulating in-bay unconfined aquatic disposal shall be replaced with the modified effluent elutriate test, as described in Appendix B of the Inland Testing Manual, for both water column toxicity and chemistry (DMMO suite of metals only); and,

   b. Water Board May 2000 staff report, "Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines," or most current revised version.

   Modifications to these procedures may be approved on a case-by-case basis. The dredged material acceptance criteria (DMAC) for wetland surface (cover) reuse shown in the following table shall be used to screen prospective dredging projects for placement of material at the HWRP site. If any pollutant chemical

concentration in the pre-dredge sediment samples exceeds the screening values, the Discharger may submit a technical report to the Executive Officer, at least 60 days prior to proposed placement of dredged material, demonstrating the Discharger's ability to comply with all other requirements of this order and demonstrating that the material is unlikely to impact beneficial uses.

HWRP Dredged Material Acceptance Criteria

Constituent	**Wetland Surface (Cover) Material**
Metals:	**mg/kg**
Arsenic	15.3
Cadmium	1.2
Chromium	112
Copper	68.1
Lead	43.2
Mercury	0.43
Nickel	112
Selenium	0.64
Silver	0.58
Zinc	158
Organochlorine Pesticides & PCBs:	**µg/kg**
DDTs, sum	7.0
Chlordanes, sum	2.3
Dieldrin	0.72
PCBs, sum	22.7
Polycyclic Aromatic Hydrocarbons:	**µg/kg**
PAHs, Total	3,390

5. In accordance with Section 13260 of the California Water Code, the Discharger shall file with the Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the dredged material placement areas or the ownership of the site. Any proposed material change in the operation shall be reported to the Executive Officer at least 7 days in advance of implementation of any such proposal.

6. The responsible representative of the Discharger shall immediately notify the Board by telephone whenever an adverse condition occurs as a result of this discharge. An adverse condition includes, but is not limited to, a violation or threatened violation of the conditions of this Order, significant spill of petroleum products or toxic chemicals, or danger to control facilities that could affect compliance. Pursuant to Section 13267(b) of the California Water Code, a written notification of the adverse condition shall be submitted to the Board within five days of the occurrence. The written notification shall identify the adverse condition, describe the actions necessary to modify the condition, and specify a timetable subject to the modification of the Board, for the remedial actions.

7. The Discharger shall consult with NOAA Fisheries regarding the planned pile driving at the off-loader facility and implement the appropriate mitigation measures to lessen the impacts to fish.

C. EFFLUENT LIMITATIONS

1. Dredged material effluent (decant water) discharged from any point within the beneficial reuse or restoration site shall not exceed the following limits:

Parameter	Limitation	Source
pH	6.5 – 8.5	Basin Plan
Dissolved Sulfide	0.1 mg/L	Basin Plan
Total Suspended Solids (TSS)	Less than 100 mg/L (90% of the time) Less than 50 mg/L (50% of the time)	Based on Regional Monitoring Program measurements of San Pablo Bay background for TSS collected between 1993 and 2001 at the closest sampling station.

D. RECEIVING WATER LIMITATIONS

1. The placement of sediments and/or decant water shall not cause the following conditions to exist in waters of the State at any place:

    a. Floating, suspended or deposited macroscopic particulate matter or foam;

    b. Visible floating, suspended, or deposited oil or other products of petroleum origin;

    c. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses; and

    d. Alteration of temperature, turbidity, or apparent color beyond present natural background levels.

e. No toxic or other deleterious substances shall be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

2. The placement of dredge material or discharge of decant water shall not cause the following limits to be exceeded in waters of the State at any point:

a. Dissolved Oxygen:	5.0 mg/l minimum. When natural factors cause lesser concentrations, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b. Dissolved Sulfide:	0.1 mg/l maximum.
c. pH:	A variation of natural ambient pH by more than 0.5 pH units.
d. Un-ionized Ammonia:	0.025 mg/L as N, annual median; and 0.16 mg/L as N, maximum.
e. Total Dissolved Solids:	The project shall not increase total dissolved solids or salinity to adversely affect beneficial uses.

3. Turbidity shall not exceed the background of the Waters of the State, as measured in NTU, as follows:

Receiving Water Background	Incremental Increase
< 50 units	5 units, maximum
> 50 units	10% of background, maximum

4. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted hereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. PROVISIONS

1. All technical and monitoring reports required pursuant to this Order are requested pursuant to Section 13267 of the California Water Code. Failure to submit reports in accordance with schedules established by this Order or attachments to this Order, or failure to submit a report of sufficient technical quality acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to Section 13268 of the California Water Code.

2. The Discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order immediately upon adoption of this Order, unless otherwise specified. All required submittals must be acceptable to the Executive Officer.

3. The Discharger must comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Board (CWC Sections 13261, 13267, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350).

4. **Self-Monitoring Program**: The Discharger shall comply with the Self-Monitoring and Reporting Program (SMP) attached to this Order (Part A and Part B), and as may be amended by the Executive Officer. The Discharger shall submit an annual self-monitoring report **by March 1 of each year**. The SMP may be amended by the Executive Officer in response to a written request by the Discharger, or as necessary to assure collection of information to demonstrate compliance with this Order.

   Due Date: The First Annual Self-Monitoring Report shall be submitted by March 1, 2006.

5. **Site Operation Plan:** The Discharger shall submit an Operation Plan, acceptable to the Executive Officer, detailing ongoing operations for the site. This Operation Plan shall describe site operations and procedures to be followed before, during, and after dredged material placement, including a contingency plan to be implemented in the event that monitoring conducted according to the attached Self-Monitoring Program shows one or more exceedances of the limits for pollutants listed under this Order's Effluent Limitations Section C. The Plan shall specifically state how site operations will be adjusted to comply with the decant water discharge limits. The Operation Plan shall also include an analysis of the following:

   a. Settling basin design and operation, including sediment/water holding capacity of containment cells and settling basins and overall water balance analysis,
   b. Off-loader and associated pipeline operations and maintenance,
   c. Placement of the off-loader electrical power line,
   d. A description of the management of all sources of surface water runoff including, the Southern Seasonal Wetland, adjacent residential areas, Landfill 26, State Lands Commission parcel and the City of Novato property,
   e. An analysis of the potential impacts of the discharge on the existing coastal salt marsh,
   f. Closure of existing storm water control features,
   g. Timing and quality of discharge from Nina's Pond prior to sediment placement,
   h. Abatement plans for mosquitoes and any other potential nuisances,
   i. Bel Marin Keys Community Services District dredged material placement and decant water management, and
   j. Emergency procedures for potential risks, including pipeline breaks and levee failures.

   The Operation Plan shall be reviewed annually, and updated as necessary, and within 90 days of completion of any significant facility or process changes. Annual updates

shall be due one month after the start of construction of the following year, and each year thereafter. The Discharger shall submit proposed changes to the Plan, acceptable to the Executive Officer along with a detailed discussion of the status of site operations. The annual update shall include an estimated time schedule for completion of any revisions determined necessary, a description or copy of any completed revisions, or a statement that no revisions are needed.

Due Date: 60 days Prior to Placement of any Dredged Material at the Site

6. **Erosion and Sediment Control Plan:** The Discharger shall submit annually an update of the Stormwater Pollution Prevention Plan (SWPPP), acceptable to the Executive Officer. The Plan shall include a stormwater discharge monitoring program.

   Due Date: Prior to October 15 of the year of Construction or at least 60 Days Prior to Intent to Construct

7. **Wetlands Monitoring and Adaptive Management Plan (MAMP):** The Discharger shall submit a plan, acceptable to the Executive Officer, that provides a detailed description of procedures for monitoring and assessing, using specific performance criteria, the overall success of the wetland restoration at the site. The performance criteria should address the elements listed in the attached Table 2, including but not limited to, tidal marsh development, tidal channel formation, biological success (plant and animal colonization), use by endangered species, and control of invasive species colonization. A technical advisory team comprising staff from agencies including the Water Board will be created to review the status of the project and advise on the need for changes to the monitoring or adaptive management strategy. Annual reports detailing the progress of the HWRP shall be sent to the Water Board and presented annually to agencies and interested parties in a forum such as the Wetland Monitoring Group under the San Francisco Wetland Restoration Program or some other forum for input and feedback on the project's progress and adaptive management strategies.

   One important element of the Wetlands Monitoring and Adaptive Management Plan is a Methylmercury Adaptive Management Plan. This shall include a discussion of the following:

   a. Background and concerns posed by mercury and methylmercury relative to restoration of the site
   b. Monitoring objectives and strategy
   c. Specifics of Monitoring Plan

   Due Date: June 1, 2006

8. **Public Participation Plan:** The Discharger shall submit a plan, acceptable to the Executive Officer, that describes how the public will be kept informed of activities conducted as part of the HWRP and how the Discharger will respond to inquiries, including complaints from concerned citizens. At a minimum, the Discharger shall hold a public meeting every year at an appropriate location in the City of Novato at a time and place most convenient to the public. Adequate public notice shall be given to the public through a dedicated mailing list, postings and newspaper announcements and copied to the Water Board. The purpose of the meeting shall be to give the public

and agency staff an update on the activities of the project, any changes to the project that have occurred in the previous year and the anticipated work in the coming months.

Due Date: 60 Days from the Date of this Order

9. **Levee Breach Plan:** The Discharger shall submit a plan, acceptable to the Executive Officer, that provides a detailed description of the plan to breach the levee including a discussion of the completion of all activities required under Board Order R2-2003-0076. Board Order R2-2003-0076 requires submission of a technical report, acceptable to the Executive Officer, documenting implementation of the required remedial and environmental actions, 60 days prior to conducting work on the outboard levee breach.

   Due Date: 60 days Prior to work on Levee Breach

10. **Decant Water Monitoring Plan:** The Discharger shall submit a Decant Water Monitoring Plan acceptable to the Executive Officer that describes how the Discharger will comply with the requirements set forth in the SMP attached to this Order. The plan shall include a description of how the Discharger will continuously monitor turbidity, DO and pH at the discharge point from the settling basins. The plan shall also describe how the turbidity meters will be calibrated to estimate total suspended solids and describe methods for collecting and analyzing decant water grab samples.

    Due Date: At least Three months Prior to Dredged Material Placement at the Site

11. **Quality Assurance Project Plan:** The Discharger shall submit a technical report that is acceptable to the Executive Officer that contains a site-specific Quality Assurance Project Plan (QAPP). The QAPP will outline the collection of soil and water samples, analysis of the samples for chemical constituents of concern, and reporting of the results. The QAPP will specifically address project organization, quality assurance objectives, sampling procedures, sample handling and custody, laboratory analyses and quality control procedures, audits, corrective action, data reduction, management, reporting and validation.

    Due Date: At least Three Months Prior to Commencement of Sediment Placement

12. The Discharger shall notify the Executive Officer immediately whenever violations of this Order or the Self Monitoring and Reporting Program are detected. A follow-up written report is due within 15 days of any violation.
13. All reports following these Provisions shall be prepared under the supervision of a registered civil engineer or certified engineering geologist.
14. The discharge of any hazardous waste, as defined in Title 23, Chapter 15 of the California Administrative Code, to the site is prohibited.
15. Only dredged material that has been demonstrated to be non-hazardous and meets the applicable guidelines and criteria specified in this Order may be discharged.

16. Dredged material not meeting the conditions specified in the above Specification B.4 shall not be discharged until and unless a written approval of the discharge has been issued by the Executive Officer.
17. The Discharger shall remove and relocate any wastes that are discharged at this site in violation of these Requirements.
18. The odor from the dredged material placement shall not cause a nuisance.
19. The Discharger shall maintain all devices or designed features installed in accordance with this Order such that they function without interruption for the life of the operation.
20. The Discharger shall implement corrective actions described in the approved Site Operation Plan (see Provision 5) if routine monitoring indicates that there is a potential threat to water quality.
21. The Discharger shall maintain a copy of this Order at the site to be available at all times to site operating personnel.
22. The Discharger shall permit the Board or its authorized representative, upon presentation of credentials:
    - Entry on to the premises on which wastes are located or in which records are kept.
    - Access to copy any records required to be kept under the terms and conditions of this Order.
    - Inspection of any treatment equipment, monitoring equipment or monitoring method.
    - Sampling of any discharge or surface water covered by this Order.
23. This Order does not authorize commission of any act causing injury to the property of another or of the public; does not convey any property rights; does not remove liability under federal, state or local laws, regulations or rules of other programs and agencies nor does this Order authorize the discharge of wastes without appropriate permits from other agencies or organizations.
24. This Order supercedes Provision 5.b of Order 96-113, pertaining to mitigation for wetland impacts at the site due to the placement of a landfill cap on an adjacent property, as described in Finding 9 of this Order. In the event that the wetland design changes materially from what was proposed in the permit application, the Board may consider revision of this Order to address mitigation for wetland impacts.

Review and Modification of Requirements

The Board shall review the waste discharge requirements in this Order periodically, and may modify this Order under, but not limited to, any of the following circumstances:

a. If present or future investigations demonstrate that the discharge(s) governed by this Order might have adverse impacts on water quality and/or beneficial uses of the receiving waters; or

b. New or revised water quality objectives come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, discharge limitations in this Order will be modified as necessary to reflect updated water quality objectives; or
c. Addition of adjacent parcels (Navy Ballfields, Bel Marin Keys Unit 5, SLC Parcel) to the HWRP.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 20, 2005.

BRUCE H. WOLFE
Executive Officer

Attachments:

Table 1 – Habitat Type Summary
Table 2 – Wetland Monitoring and Adaptive Management Plan Elements
Table 3 – Mitigation Measures

Figure 1. Location Map
Figure 2. Site Map
Figure 3. Plan View of the Planned Wetland
Figure 4. Panhandle Seasonal Wetland
Figure 5. Southern Seasonal Wetland
Figure 6. Wildlife Corridor Cross Section
Figure 7. Sediment Placement and Decant Water Management
Figure 8. Location Map of Off-loader in San Pablo Bay

Self-Monitoring Program (SMP) Part A and Part B

References

Bel Marin Keys Unit V Expansion of the Hamilton Wetland Restoration Project. Uncertified Final General Reevaluation Report and Final Supplemental Environmental Impact Report/Environmental Impact Statement (HWRP SEIR), April 2003. http://www.coastalconservancy.ca.gov/belmarin/index.html

Comprehensive Conservation and Management Plan, San Francisco Estuary Project, 1993.

Goals Report, 1999, Baylands Ecosystem Habitat Goals Project A Report of Habitat Recommendations Prepared by the San Francisco Wetlands Ecosystem Goals Project.

Hamilton Wetland Restoration Plan; Environmental Impact Report/Environmental Impact Statement (HWRP EIR). California State Coastal Conservancy, U.S. Army Corps of Engineers, Volumes I-III, December 1998.

Hamilton Wetland Restoration Project, Application for Water Quality Certification Under the Clean Water Act, U.S. Army Corps of Engineers, San Francisco District, March 16, 2005.

Letter from Max R. Blodgett, US Army Corps of Engineers, San Francisco District, to Jon Amdur, Port of Oakland, dated December 9, 1998.

TABLES

Table 1. Habitat Type Summary - (Wetland Habitats Shown in Bold)

Landscape Elements	Impacted (acres)	Proposed-Mature Marsh (acres)
Open Water (perennial brackish pond, former borrow pit created for Landfill 26 closure)	**13**	0
Seasonal Wetlands (includes 12.4 acre Landfill 26 wetland mitigation site)	**19.5 (freshwater)**	**156**
Perennial Emergent Marsh – perimeter drainage ditch	**4**	0
Tidal marsh	**88**	**378 (created) plus 87 (existing)**
Grassland vs Wildlife Corridor (Upland transition & buffer)	259	34
Developed land, including levees	284	<30
Tidal Pannes		**13**
Total of wetland acres	**124.5**	**634**

Table 2. Wetland Monitoring and Adaptive Management Plan Elements

Plan Element	Frequency/Duration
Marsh Water/Sediment Quality	To be proposed (Provision 7)
Methylmercury Adaptive Management Plan	To be proposed (Provision 7)
Levee Dimensions	Visual walkover inspection twice annually (pre and post winter conditions). Annual field survey until design expectations met.
Post Construction Fill Elevation	Prior to breach
Sediment Deposition Rates	To be proposed (Provision 7)
Sediment Deposition patterns	To be proposed (Provision 7)
Channel Geometry	To be proposed (Provision 7)
Tide Elevations (determine tidal regime and prism)	To be proposed (Provision 7)
Peninsula Crest Elevation	To be proposed (Provision 7)
Marsh Development- physical parameters (hydrology, topography/bathymetry) Biological parameters (plant and animal life)	Annual for first five years. Then every five years until design expectations met. Locations: tidal wetland interior; tidal wetland perimeter; subtidal channels, existing SP Bay marsh shoreline
Vegetation	Annual for first five years. Then every two years until established.
Bird Use	Periodic surveys
Fish Use	Ongoing surveys
Mammal Use	Periodic surveys
Endangered Species Use	Periodic surveys
Benthic Macroinvertebrates	Additional surveys later if site deficiencies arise
Seasonal Wetland/Upland Vegetation	Field surveys
Invasive Species Monitoring	Non-native plant assessment by qualified botanist
Exterior Tidal Channels	Monitor geometry periodically
Internal Channel Development	Map from aerial photographs; transects

Table 3. Mitigation Measures

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Water Quality			
Potential for Degradation of Surface Water and Sediment Quality due to Increased Methylmercury Formation Potential	Potentially Significant and Unavoidable	Mitigation Measures WQ-1: Implement Methylmercury Adaptive Management Plan	Potentially Significant
Potential Diesel Pump Spills into San Pablo Bay	Significant	Mitigation Measure WQ-2: Provide for Spill Protection at Offloader and at Booster Pump Facility	Less than Significant
Potential Changes to Circulation in Pacheco Pond	Significant	Mitigation Measure WQ-3: Incorporate Pacheco Pond Water Quality Concerns Regarding Circulation in New Water Management Plan, in Cooperation with MCFCWCD and CDFG.	Less than Significant
Potential for Degradation of Receiving Water Quality due to Dredged Material Placement	Significant	Mitigation Measure WQ-4: Develop and Implement Water Quality Monitoring Program for Dredged Material Placement.	Less than Significant
Potential for Spills from Fueling of Pump(s) at Pump Station	Significant	Mitigation Measure WQ-5: Provide for Spill Protection at Pump Station.	Less than Significant
Loss of drainage capacity from New Hamilton Partnership Development	Significant	Mitigation Measure: 5.1: Provide allowance for drainage similar to design specified for New Hamilton Partnership east outfall	Less than Significant

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Changes in circulation and morphologic evolution in tidal wetland	Significant	Mitigation Measure 6.3: Ensure adequate tidal exchange and develop and implement a monitoring program to assess project evolution	Less than Significant
Public Health			
Increase of Potential Mosquito Breeding Habitat	Significant	Mitigation Measure PH-1: Coordinate Restoration Design and Expansion Activities with MSMAD	Less than Significant
Biological Resources			
Temporary Disturbance to the Northern Harrier, White-Tailed Kite, Golden Eagle, Cooper's Hawk, Sharp-shinned Hawk, Short-Eared Owl, Burrowing Owl, Saltmarsh Common Yellowthroat, and San Pablo Song Sparrow During Construction	Significant	Mitigation Measure BIO-1: Conduct Surveys to Locate Northern Harrier, White-Tailed Kite, Golden Eagle, Cooper's Hawk, Sharp-shinned Hawk, Short-Eared Owl, Burrowing Owl, Saltmarsh Common Yellowthroat, and San Pablo Song Sparrow Nest Sites Before Construction Is Initiated and Avoid Breeding Sites	Less than Significant
Potential for Construction-Related Mortality of Salt Marsh Harvest Mice	Significant	Mitigation Measure BIO-2: Remove Salt Marsh Harvest Mouse Habitat and Place Barrier Fencing in the Immediate Vicinity of Operating Equipment.	Less than Significant
Potential for Construction-Related Mortality of California Clapper Rails and California Black Rails	Significant	Mitigation Measure BIO-3: Avoid Operation of Equipment within 250 feet of the Outboard Tidal Coastal Marsh During the Breeding Period of the California Clapper Rail and California Black Rail	Less than Significant
Potential for Mortality of San Pablo Song Sparrows	Significant	Mitigation Measure BIO-4: Conduct Surveys to Locate San Pablo Song Sparrow Nest Sites before Construction Is Initiated and Avoid Breeding Sites	Less than Significant

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Potential for Mortality of Burrowing Owls	Significant	Mitigation Measure BIO-5: Conduct Surveys to Locate Burrowing Owl Nest Sites before Construction Is Initiated and Avoid Breeding Sites	Less than Significant
Potential for Construction-Related Mortality of Outmigrating Salmonid Smolts	Significant	Mitigation Measure BIO-6: Avoid Construction that Could Affect Tidal Aquatic Habitats when Salmonid Smolts Could Be Present	Less than Significant
Potential Disturbance to or Mortality of Special-Status Species Resulting from Monitoring and Adaptive Management Activities	Significant	Mitigation Measure BIO-7: Develop and Implement a Restoration Monitoring and Adaptive Management Program Designed to Minimize Potential Impacts on Special-Status Species.	Less than Significant
Loss of Coastal Salt Marsh	Significant	Mitigation Measure BIO-8: Monitor Site Development and Implement Actions to Increase the Rate of Marsh Development, If Required	Less than Significant
Loss of Brackish Open Water Habitat and Brackish Marsh	Significant	Mitigation Measure BIO-9: Monitor Development of Brackish Open Water, Emergent Marsh, and/or Seasonal Wetlands.	Less than Significant
Loss of Habitat for California Clapper Rail, California Black Rail, Salt Marsh Harvest Mouse, and Saltmarsh Common Yellowthroat	Significant	Mitigation Measure BIO-8: Monitor Site Development and Implement Actions to Increase the Rate of Marsh Development, if Required	Less than Significant

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Temporary Loss of Nesting Habitat for the San Pablo Song Sparrow	Significant	Mitigation Measure BIO-8: Monitor Site Development and Implement Actions to Increase the Rate of Marsh Development, if Required Mitigation Measure BIO-9: Monitor Development of Brackish Open Water, Emergent Marsh, and/or Seasonal Wetlands.	Less than Significant
Potential for spread of invasive nonnative plants within and outside of restoration area during construction activities	Significant	Mitigation Measure 10a: Prevent Spread of Perennial Pepperweed and Other Invasive Weeds to Uninfested Areas Mitigation Measure 10b: Monitor Restoration Sites and Control for Infestation by Invasive nonnative plants	Less than Significant
Disruption of Sensitive Wildlife due to Bay Trail Construction, All Alternatives	Significant	Mitigation Measure BIO-1: Conduct Surveys to Locate Northern Harrier, White-Tailed Kite, Golden Eagle, Cooper's Hawk, Sharp-shinned Hawk, Short-Eared Owl, Burrowing Owl, Saltmarsh Common Yellowthroat, and San Pablo Song Sparrow Nest Sites Before Construction Is Initiated and Avoid Breeding Sites	Less than Significant
Disruption of Sensitive Wildlife due to Public Access Interactions along the Bay Trail	Significant	Mitigation Measure BIO-11: Incorporate Wildlife-Sensitive Approaches in Bay Trail Design and Develop Trail Access Management Plan	Less than Significant

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Disruption of Sensitive Wildlife due to Public Access Interactions along the Bay Trail, Southward and Northward Extension	Significant	Mitigation Measure BIO-12: Implement Specific Design and Management Mitigation for Bay Trail Southward Extension and Northward Extension from City of Novato Levee	Less than Significant
Potential Harm to Marine Mammals, and Special-Status Fish Species, and Common Fish Species due to Pile-Driving Activities for Off-Loader Facility and Booster-Pump Platforms	Significant and Unavoidable	Mitigation Measure BIO-13: Coordinate with Appropriate Federal and State Agencies to Reduce Impact on Marine Mammals and Special-Status Fish Species during Pile-Driving Activities	Significant
Potential Disruption to Nesting Special-Status and Common Birds due to Removal of Several Eucalyptus Groves and Several Oak Trees	Significant	Mitigation Measure BIO-14: Remove Identified Eucalyptus Groves and Oak Trees outside Special-Status and Other Bird Breeding Seasons	Less than Significant
Potential Disruption to Special-Status Bat Species due to Removal of Structures	Significant	Mitigation Measure BIO-15: Conduct Site Surveys for Presence of Special-Status Bat Species and Remove Structures in accordance with State and Federal Laws.	Less than Significant
Potential Effects of Construction of and Access to the Interpretive Center and Access Area on the "Bulge" Parcel West of the HWRP	Significant	Mitigation Measure BIO-16: Recommended Mitigation Measures for Construction of and Access to and from the Interpretive Center and Access Area on the "bulge" parcel west of HWRP.	Less than Significant
Temporary Disturbance of Fish in San Pablo Bay During Construction	Significant	Mitigation Measure BIO-17: Use Fish Screens to Prevent Possible Entrainment of Fish	Less than Significant
Hazardous Substances and Waste			
Potential Exposure of Humans, Plants, or Wildlife to Hazardous Chemicals Contained in Dredged Material Used as Fill Material	Potentially Significant	Mitigation Measures WQ-1: Implement Methylmercury Adaptive Management Plan	Potentially Significant

Impact	Significance Determination	Mitigation Measure	Significance Determination with Mitigation Incorporation
Potential Exposure of Humans, Plants, or Wildlife to Hazardous Chemicals Due to Sedimentation from Novato Creek and/or San Pablo Bay	Potentially Significant	Mitigation Measures WQ-1: Implement Methylmercury Adaptive Management Plan	Potentially Significant
Transportation			
Construction-Related Emissions of PM10 from Terrestrial Construction Equipment	Significant	Mitigation Measure A-1: Control PM10 Emissions in Accordance with BAAQMD Standards	Less than Significant
Construction-Related Emissions of Ozone Precursors from Terrestrial Equipment and Use of Diesel Pumps to Offload Dredge Material	Significant	Mitigation Measure A-2: Control and/or Offset NOx Emissions Associated with Unloading of Dredged Material	Less than Significant
Noise			
Temporary Increases in Noise Levels to More Than 60 dBA during Onshore Construction	Significant	Mitigation Measure N-1: Employ Noise-Reducing Construction Practices	Less than Significant

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING AND REPORTING PROGRAM
FOR

HAMILTON WETLAND RESTORATION PROJECT

NOVATO, MARIN COUNTY

ORDER NO. R2-2005-0034

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

1. Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Board's Resolution No. 73-16. This Self-Monitoring Program is issued in accordance with Provision E.4 of Board Order No. R2-2005-0034.

2. The principal purposes of a discharge monitoring program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste dischargers in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance and toxicity standards, (4) to assist the dischargers in complying with the requirements of the California Code of Regulations.

B. SAMPLING AND ANALYTICAL METHODS

1. Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods for the Analysis of Water and Wastewater

2. Water and sediment analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

3. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A **grab sample** is a discrete sample collected at any time.

2. **Decant Water**, also known as overlying water, or return water, is the water entrained with the sediment particles during dredging or upland placement of dredged material. After suspended sediment concentrations have been reduced through discrete settling (primary settling in the sediment placement cells and secondary settling in Nina's Pond and other basins), clarified decant water will discharge to an existing storm water pumping station from which it will be pumped to San Pablo Bay.

3. **Receiving waters** refers to any waterbody that actually or potentially receives surface or groundwater, which passes over, through, or under dredged sediment during placement, dewatering, and settling/consolidation activities. The outboard drainage ditch which runs along the outboard levee is the receiving water body for the decant water discharge. The outboard drainage ditch is a tributary to San Pablo Bay, which will receive the decant water flow.

4. A **dredged material placement episode** consists of continuous dredged material slurry placement that stops for no more than 15 consecutive days. If placement stops for more than 15 consecutive days and then starts up again, the date of start-up will be considered the beginning of a new dredged material placement episode for monitoring purposes.

5. A **decant water discharge episode** consists of continuous decant water discharge that stops for no more than 15 consecutive days. If discharge stops for more than 15 consecutive days

and then starts up again, the date of start-up will be considered the beginning of a new decant water discharge episode for monitoring purposes.

6. **Receiving Waters Standard Observations** refer to:
   a. Evidence of floating and suspended materials generated by project activities, as recorded by visual observations.
   b. Discoloration and turbidity: description of color, source, and size of affected area.
   c. Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
7. **Site Standard Observations** refer to visual inspection of:
   a. The overall condition and integrity of the sediment placement cell and settling basin perimeter containment berms.
   b. The location of placed material, amount of freeboard available, and whether any discharge of dredged sediments outside of the containment berms has occurred.
   c. The overall condition and integrity of the dredged material effluent (decant water) discharge weir/s.
   d. The overall condition and integrity of the dredged material transport pipeline from the intake at the connection point at the off-loader in San Pablo Bay to the point of discharge into the sediment placement cells.
   e. The overall condition and integrity of the off-loader and whether any discharge of dredged sediments from the off-loader into San Pablo Bay has occurred.

D. SAMPLING, ANALYSIS AND OBSERVATIONS

1. The total suspended solids (TSS) in the top of the water column in each secondary settling basin prior to discharge over the weir shall be continuously estimated with turbidity meters (optical backscatter sensors) that have been calibrated with grab samples.

The Discharger is required to perform observations and monitoring according to the schedule in Part B.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the Discharger or its laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling and the name of the person performing the sampling.
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.
5. Calculation of results.

6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written monitoring reports shall be filed each quarter, by the 30th day of the month following the reporting period, during which placement of material onto the site occurs.

Reporting Period	Report Due Date
January to March	April 30
April to June	July 30
July to September	October 30
October to December	January 30

The reports shall contain the following:

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any Waste Discharge Requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by the duly authorized representative of the HWRP responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. The quantity and locations of dredged material placed at the site and a description of maintenance activities occurring during the reporting period.

c. A map or aerial photograph showing observation and monitoring stations.

d. Laboratory statements of results of analyses specified in Part B; the director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

i. The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer.

ii. In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than the recovery acceptance limits specified in the USEPA method procedures or the laboratory's acceptance limits, if they are more stringent than those in the USEPA

method procedures; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

e. A summary and certification of completion of all Standard Observations for the facility.

2. By March 1 of each year, the Discharger shall submit an annual report to the Board covering the previous calendar year's activities. This report shall contain the following:

   a. Summaries of the quantities and locations of dredged material placement and the source of the dredged material.

   b. An estimate of the total volume of decant water generated from dewatering the dredged material.

   c. A summary of site maintenance activities.

   d. Tabular and graphical summaries of the monitoring data obtained during the previous year.

   e. A description of the compliance record and corrective actions taken or planned which may be needed to bring the Discharger into full compliance with Order No. R2-2005-0034.

3. **Contingency and Corrective Action Reporting**

   a. A report to the Executive Officer and Board case manager shall be made by telephone of any accidental discharge of whatever origin immediately after it is discovered. A written report shall be filed with the Board within fifteen days thereafter. This report shall contain the following information:

      - A map showing the location(s) of discharge(s);
      - Approximate flow rate;
      - Nature of effects, i.e., all pertinent observations and analyses; and
      - Corrective measures underway or proposed.

   b. If the Decant Water Limitation for Total Suspended Solids (TSS) in Order No. R2-2005-0034 is exceeded (i.e., more than 10% of the measurements in a 24 hour period of discharge are greater than 100 mg/L or more than 50% greater than 50 mg/L), the Discharger shall submit a Corrective Action Report within 15 days of the end of the month in which the exceedance occurred. The report shall contain at a minimum:

      - A summary of the continuous monitoring data for each day of the month that decant water discharge occurred. At a minimum, the daily data summary should include the minimum, maximum, mean, median, standard deviation, and percentage of measurements greater than 100 mg/L and percentage of measurements greater than 50 mg/L on a daily basis.
      - A description of the actions that the discharger has taken to adjust site operations to stay within the TSS Decant Water Limitation. These actions may include temporarily delaying material placement to increase retention time in placement cells and settling basins, installing structures to control the flow rate of dredged

material slurry through the site, enlarging the overall size or changing the shape of the cells/basins to increase retention time, or other measures.

- An evaluation of the effectiveness of the corrective actions taken.

PART B: MONITORING AND OBSERVATION SCHEDULE

A. DESCRIPTION OF OBSERVATION AND MONITORING STATIONS

1. **Receiving water standard observations** shall be made within a 100-foot radius of the pump station outfall into the outboard drainage ditch.
2. **Site standard observations** shall be made along the entire length of the dredged material placement cell berms, the secondary settling pond berms, and along the visible portion of the dredged material transport pipeline and within a 100-foot radius of the Off-Loader Facility.
3. Continuous TSS measurements and grab samples of water for **decant water monitoring** shall be taken on the inboard side of settling basin discharge weir spillways.

B. SCHEDULE OF OBSERVATIONS AND MONITORING

1. The schedule of observations and monitoring is provided in Table 1, below:

Table 1. Observations and Monitoring Schedule for the Hamilton Wetland Restoration Project

Constituent/Type of Analysis (units)	Location	Observation/Monitoring Frequency	Reporting Frequency (Due Date)
Site standard observations (visual)	Along placement cell and settling basin containment berms, and along slurry transport pipeline	Daily during dredged material placement episodes	Quarterly (30th of the month following the reporting period)
	Off-Loader Facility within a 100-foot radius	Daily during dredged material placement episodes	Quarterly (30th of the month following the reporting period)
Receiving water standard observations (visual)	Outboard drainage ditch within a 100-foot radius of the pump station.	Daily during decant water discharge episodes	Quarterly (Same as above)
<u>Decant Water Monitoring[1]</u>			
Flow rate (mgd)	Effluent	Continuous during each 24 hour period that decant water discharge occurs	Quarterly (same as above)

Constituent/Type of Analysis (units)	Location	Observation/Monitoring Frequency	Reporting Frequency (Due Date)
TSS estimated from turbidity measurements	Inboard side of secondary settling basin discharge weir	Continuous during each 24 hour period that decant water discharge occurs	Quarterly (Same as above) If TSS limit has been exceeded report monthly, until limit is met (see F.3.b. of Part A).
Dissolved Oxygen (DO)	Inboard side of secondary settling basin discharge weir	Continuous (May through October) during each 24 hour period that decant water discharge occurs.	Quarterly (Same as above)
pH	Inboard side of secondary settling basin discharge weir	Continuous (May through October) during each 24 hour period that decant water discharge occurs.	Quarterly (Same as above)
Dissolved sulfide Metals (μg/L) Arsenic Cadmium Chromium VI Copper Lead Mercury (total) Nickel Selenium (total) Silver Zinc	Grab sample from inboard side of secondary settling basin discharge weir Grab sample of San Pablo Bay influent water at the off-loader	Daily for the first 15 days of a Decant Water Discharge Episode, thereafter a monthly average Daily for the first 15 days of a Decant Water Discharge Episode, thereafter a monthly average	Quarterly (Same as above)
Wetland Monitoring (will be expanded once Wetlands Monitoring Plan is submitted)	Aerial photography and field survey locations to be determined.	Annual for first five years after outboard levee breach, then every other year until established	Annual Summary Report (March 1 of the following year)
Levee Dimensions	Visual Observation and field survey locations to be determined	Visual walkover inspection twice annually (pre and post winter conditions). Annual field survey.	Annual Summary Report (March 1 of the following year)

Constituent/Type of Analysis (units)	Location	Observation/Monitoring Frequency	Reporting Frequency (Due Date)
Fill and Marsh Development Elevations	Field survey, locations to be determined.	Prior to levee breach (after sediment placement completed), annually for first five years and then every five years until design expectations met.	Annual Summary Report (March 1 of the following year)

[1]For decant water effluent limits, refer to Section C. Effluent Limitations of Order No. R2-2005-0034

2. The Discharger may submit a written request to reduce the frequency of monitoring for constituents listed in Table 1 based on monitoring data collected and analyzed according to the conditions of this SMP, which demonstrate that the temporal variability of these constituents is low enough to justify less frequent monitoring. The request should include a proposed revised monitoring schedule for the subject constituents. The request and schedule must be approved in writing by the Executive Officer prior to implementation.
3. All reports shall be submitted to the Board's case manager at:

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

I, Bruce H. Wolfe, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R2-2005-0034.
2. Was adopted by the Board on July 20, 2005; and
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer or the Board.

Bruce H. Wolfe
Executive Officer