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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER No. R5-2006-xxx
WASTE DISCHARGE REQUIREMENTS
FOR
PORT OF STOCKTON
WEST COMPLEX DOCKS 14 AND 15 DREDGING PROJECT
ROBERTS ISLAND NO. 1 DREDGED MATERIAL DISPOSAL SITE
SAN JOAQUIN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. The Port of Stockton, hereafter referred to as Discharger, submitted a Report of Waste Discharge (RWD) on 7 April 2006, and amended on 24 May 2006, describing proposed dredging activities at the Discharger's West Complex docks (formerly Rough and Ready Island).

2. The dredging activities regulated in this Order include dredging at two West Complex docks; discharge of dredged sediments into a diked dredged material disposal site for dewatering; and final placement of the dewatered dredged material.

3. The Discharger proposes to discharge dredged material from the project to a dredged material disposal site on Roberts Island. The dredged material disposal site, Roberts's Island No.1 (RN1) is on the northern margin of Roberts Island, adjacent to the San Joaquin River. RN1 is shown on Attachment A, which is attached hereto and made part of this Order by reference. A second dredged material disposal site, Roberts Island No. 2, exists on Roberts Island, but is not covered by this Order.

4. RN1 consists of three areas referred to as A, B and C. Area A has been used as the primary disposal area for previous channel maintenance dredging and previous dock dredging. The proposed dredging project covered by this Order does not include Area A. Discharge will be restricted to Areas B and C.

5. In July 2000, the United States Navy conveyed about 1,500 acres of Rough and Ready Island through transfer and lease to the Discharger. The Discharger refers to this area as the West Complex. The Discharger plans to have a phased development of the site for maritime, industrial, commercial and other related operations over the next 20 years. In order to facilitate access by deep draft commercial vessel traffic, the Discharger proposes to dredge the sediments in front of the existing docks.

6. The West Complex is on the south shore of the San Joaquin River (Assessor's Parcel No. 145-02-04) in Section 1, T2N, R5E, MDB&M, at Embarcadero Avenue, in San Joaquin County. The West Complex is bounded on all sides by water. Burns Cutoff runs along the south and west boundary; the San Joaquin River runs along the east and north. The Stockton Deep Water Ship Channel (DWSC), where the dredging operations will occur, is on the north side of the West Complex. The West Complex is situated between River Mile 37 and River Mile 40 of the DWSC. (Attachment A)

7. Dredging activities are proposed for two docks at the east end of the dock complex, Dock #14 and Dock #15. Dredging is proposed for a distance of 125 feet outward from the two docks to the intersection of the DWSC. The proposed dredging will begin at latitude 37°57'14.1" N, longitude 121°20'49.9" W and end at latitude 37°57'20.7" N, longitude 121°21'11.0" W.

8. In January 2002, the Discharger conducted a bathymetric survey of the project area. The survey found that sediments are deposited near docks 14 and 15 at a depth of approximately 20 feet below mean low, low water (MLLW). The bottom of the DWSC is approximately 35 feet below MLLW. The proposed project will deepen the river bottom, adjacent to the docks, to a new depth of 36 feet below MLLW (35 feet of dredge depth plus one foot for overdredge), which is approximately the same elevation as the DWSC.

9. Based on the bathymetric survey, the Discharger estimates the total volume of sediment, in situ, to be removed to be less than 130,000 cubic yards (80.6 acre-feet). The RWD estimates that the total slurry volume (solids and entrained water) generated by the project will be less than 653 acre-feet.

10. The slurry will be transported 6,000 to 8,000 feet via HDPE pipeline and discharged to Areas B and C of RN1 (Assessor's Parcel No. 131-23-02).

11. On 4 June 2002, the Discharger completed a magnetometer sweep of the project area in order to locate significant submerged or buried metallic objects. In November 2005, the Discharger conducted an additional survey using geophysical subsurface and side scan sonar techniques. These surveys identified widespread submerged metallic and other debris, with clear indications that objects of significant size and mass lay adjacent to the docks. Metallic anomalies buried in the sediment near the docks are believed to be associated with past U.S. Navy activity.

12. In order to facilitate hydraulic dredging, the metallic and other objects must be removed. The Discharger ~~will~~ may use divers to assist in the identification of the magnetic anomalies. Large objects will be removed from the river bottom using a hydraulic dredge and crane. Sediment and any waste constituents that are associated with the submerged objects may be re-suspended in the water column as the objects are lifted from the river bottom, depending on the physical characteristics of the sediment

(grain size, compaction) and characteristics of the water body (depth, amount of flow, tidal influences, existing water quality). Monitoring surface water conditions during the removal of metal debris is appropriate.

DESCRIPTION OF DREDGING OPERATIONS

13. The excavation, transport and placement of dredged sediments are the primary components of the dredging process. Sediment and the associated constituents can be suspended or dissolved in nearby waters if entrainment of the dislodged sediments is incomplete.

14. The dredging operation may cause some temporary degradation to surface waters as turbidity and total suspended solids increase as bottom sediments are disturbed. In order to determine if the dredging activities are impacting the river, surface water monitoring during dredging operations is appropriate.

15. Dredging will be accomplished with a hydraulic dredge, which is equipped with a rotating cutter head to dislodge sediment along the bottom of the channel. The dislodged sediment, along with the surrounding water, will be drawn into an 18-inch diameter ~~tube~~ pipeline by suction via the hydraulic pump.

16. The Discharger estimates that the total project duration for the dredging of docks 14 and 15 will range between 26 and 53 days, depending upon the number of hours per day in which dredging operations are conducted. The Discharger estimates an additional four days may be required for debris removal at the project site.

17. The Discharger has calculated that the percentage of sediment/elutriate lost to resuspension as a result of contact with the dredge's cutter head to be 0.12 to 0.78 percent.

18. The Discharger calculates the contribution of suspended solids 30 meters downstream of the dredging operation to be about 1.9 mg/L. The Discharger has reported that the average background concentration of suspended solids for this reach of the river is 24 mg/L. This increase in suspended solids is estimated to increase turbidity from 19 to 20.9 Nephelometric Turbidity Units (NTU).

19. The Discharger conducted a chemical oxygen demand test (COD), subsequent to a standard elutriate test, on sediment samples collected from the project area. Although there is uncertainty in the use of the elutriate COD test for predicting the actual oxygen depletion in the surface water, the results may be used to provide a conservative indication of potential impacts.

20. The COD for the Dock 15 elutriate samples was reported as 95 mg/L in the upper portion of the sediment (old horizon), 67 mg/L in the middle portion of the sediment (composite horizon), and 63 mg/L in the bottom sediment (new horizon).

21. Based on the Discharger's estimate of the highest elutriate emission rate of 0.78 percent, the COD concentration released to the water column may range from 0.74 mg/L for the old sediment, to 0.5 mg/L for the composite and new sediment layers.

22. In order to mitigate potential DO impacts from the dredging operation, the Discharger will operate a portable aeration device as close as possible ~~within, 1,000 feet of~~ to the dredge without compromising safety. The aeration device ~~is~~ will be capable of delivering approximately 500 pounds of oxygen per day to the water column.

23. On 19 July 2005 the National Marine Fisheries Service (NMFS) issued a non-jeopardy Biological Opinion with terms and conditions for the proposed project. On 7 July 2006 a revised Biological Opinion was issued, which superceded the previous version. The revised Biological Opinion was issued as a result of the recent listing of the North American Green sturgeon on 7 April 2006. The revised Biological Opinion contained no additional terms and conditions for the proposed project.

24. The NMFS Biological Opinion reports that in general the Delta is an impaired water body having elevated levels of pesticides and other pollutants. In addition, DO levels recorded at Rough and Ready Island have shown regular occurrence of low DO events in the DWSC. Although DO depressions have occurred in all months in which migratory fish are present, the most significant events have occurred from November through March, when Central Valley steelhead are present. Levels of DO below 5.0 mg/l have been reported to delay or block fall-run Chinook salmon. Factors identified in the Biological Opinion for DO impairment include reduced river flows in the San Joaquin River at Stockton, ammonia released from the City of Stockton's upstream Wastewater Treatment Plant, upstream contributions of organic material, and increased volume of the dredged ship channel.

~~23.~~25. ~~Dredging is a potential source of habitat destruction, mobilization of contaminated sediment and general disturbance to native fish species.~~ The U.S Department of the Interior Fish and Wildlife Service approved *Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes*, November 1996, recommends restricting dredging operations to a time period, window, between September 1 through November 31 each year when Chinook salmon and Central Valley steelhead are absent from the river. On 9 January 2004, the U.S. Fish and Wildlife Service issued a letter of concurrence for the proposed project, with in-water work windows between June 1 and December 30. In addition, NMFS issued a Biological Opinion, which restricts in-water work between June 1 and December 31. Dredging is a potential source of habitat destruction,

mobilization of contaminated sediment and general disturbance to native fish species. Restricting dredging operations to seasonal time frame "windows" set forth by the appropriate resource agencies to minimize the effects to critical life-stages of these endangered species is appropriate.

ROBERTS ISLAND DREDGED MATERIAL DISPOSAL SITE

~~24.~~26. RN1 consists of three distinct dredge disposal areas. Area A, the easternmost area, is approximately 46 acres and has historically served as the primary sediment receiving area for RN1. Area A is not authorized for use under this Order. Areas B and C occupy the central and westernmost sections of RN1. Together Areas B and C comprise about 138 acres. This Order allows discharge of dredged slurry to Areas B and C. This Order does not allow sediment or water to be delivered to Area A. (See Attachment B.)

~~25.~~27. The above ground capacity for RN1 Areas B and C has been calculated from a topographic survey to be 364 acre-feet. This volume excludes 2 feet of freeboard below the height of the lowest berm. Based on the berm elevations, less two feet of freeboard, the Discharger indicates that Areas B and C have sufficient capacity for the estimated 80.6 acre-feet of dredged sediment to be generated by the project. The total volume of above-ground storage at Areas B and C is not sufficient to accommodate the total volume of slurry expected to be generated, however, the Discharger believes that there will be adequate evaporation and percolation at the site to accommodate the additional volume of slurry water. This Order requires a minimum of 2 feet of freeboard, and once that level is reached, the Discharger must stop dredging. The freeboard requirement of two feet, is adequate to protect against overtopping of the berms, due to wave action.

28. This Order prohibits increasing the capacity at RN1 Areas B and C. This does not preclude the Port from performing necessary maintenance on the berms and/or reusing material from the site, in accordance with the conditions of the applicable waste discharge requirements.

29. RN1 has received dredged material from maintenance dredging of the San Joaquin DWSC as specified in General WDR Orders Numbers R5-01-115, R5 2003 0145 and R5-2004-0061. In 2001, 2003 and 2005 the U.S. Army Corps of Engineers (Corps) discharged approximately 65,000, 120,000 and 126,000 cubic yards of solid dredged material, respectively, to this site from maintenance dredging of the DWSC.

~~27.~~30. The Discharger has installed a network of groundwater monitoring wells in and around RN1 and has installed additional wells to monitor groundwater along a hydraulic gradient towards the center of the island. Groundwater monitoring data from

these 27 wells have been provided to the Regional Board in quarterly monitoring reports as specified in the Monitoring and Reporting Program No. R5-2005-0286.

~~28.~~31. Borings through the dredged sediment at RN1 indicate sandy material ranging from about 7 to 12 feet thick. These sandy dredged sediments are underlain by a relatively thin layer of silt and/or clay, which represent either the finer grained sediments or the upper portion of the underlying peat layer. In most locations, the underlying peat layer is about three feet thick. A layer of clay and/or silt with little or no sand, ranging to 13 feet thick, lies directly under the peat layer. Beneath this layer, a layer of sand or silty sand is consistently encountered.

~~29.~~32. The dredged slurry placed at RN1, Areas B and C will be retained on site for dewatering through evaporation/percolation. The sediment will be removed and reused prior to 31 October 2007, the estimated start of the 2007 rainy season. To prevent potential groundwater impacts at the reuse sites, final placement will be confined to locations and conditions that are protective of water quality. Placement and reuse of the dredged sediment will be restricted to sites beneath engineered covers such as buildings, foundations, slabs, parking lots or roadways; and at least two feet above any ~~significant~~ groundwater bearing zone.

~~30.~~33. Although no instability of the berms surrounding RN1 is anticipated, periodic inspection of the containment berms is necessary to detect and minimize the potential for failure. In addition, berms can fail from a lack of maintenance or overtopping due to wave action. Requirements that a minimum freeboard level of two feet be maintained to prevent overtopping, and that the Discharger implement an Operation and Maintenance Plan for RN1 are appropriate.

CHARACTERISTICS OF DREDGED MATERIALS

~~31.~~34. The Discharger has submitted a pre-dredge sediment analysis of chemical constituents extracted from dredged sediments using the Waste Extraction Test (WET) with de-ionized water (DIWET). The DIWET data are used to predict the potential characteristics of leachate from dredged materials that are discharged to RN1. Questions have been raised about the appropriateness of using the DIWET for evaluating leachate characteristics at the Roberts Island disposal site since some material previously placed at the site has been found to be acidic. Metal constituents are usually more soluble in acidic conditions. Constituent concentrations measured in the DIWET have not always been shown to be representative of actual concentrations found in subsequent groundwater monitoring. Based on past experience at this site, we have found that the use of DIWET may overestimate the threat to water quality posed by the leachate.

~~32.~~35. DIWET analysis found that all constituents measured, except for arsenic and lead, were below the applicable water quality objectives. Arsenic and lead were both found to be above the Public Health Goals (PHG).

~~33.~~36. Arsenic levels of 4.4 µg/L and 4.8 µg/L (average 4.6 µg/L) measured with the DIWET analysis were above the PHG of 0.004 µg/L

~~34.~~37. Arsenic is naturally occurring in San Joaquin County groundwater. Data from the US Environmental Protection Agency (USEPA) indicate that the DIWET levels for arsenic are below background levels for arsenic found in San Joaquin County. USEPA data from San Joaquin County public water systems collected from 1980 to 1998 indicate average concentrations of arsenic of 8.95 µg/L.

~~35.~~38. Lead levels of 4.7 µg/L and 6.8 µg/L (average 5.8 µg/L) measured with the DIWET analysis were above the PHG of 2.0 µg/L.

~~36.~~39. Soluble constituents from the dredged material have the potential to migrate downwards towards the underlying groundwater. As the leachate migrates through the soil towards the groundwater, a degree of attenuation will occur based on environmental fate processes that include adsorption to clay and organic matter, chemical bonding of metals to soil particles, and filtration of suspended matter by fine textured soil particles. The degree of expected attenuation is dependent on soil characteristics specific to individual sites. An analysis conducted by Geomatrix Consultants Inc. of 16 soil samples taken in RN1 in October 2003, indicates relatively high soil cation exchange capacities (CEC) ranging from 8.3 to 32.3 meq/100 g soil.

~~37.~~40. Previous placements of dredged material at RN1 by the Corps between 2003 and 2005 have had DIWET levels for lead ranging from 1.9 µg/L to 93.0 µg/L (average 27.7 µg/L). Subsequent groundwater monitoring has not shown lead concentrations above water quality objectives. Based on the CEC at this site and data from material with higher levels of DIWET lead previously placed at this site, lead concentrations are not expected to impact groundwater.

41. Although DIWET testing of the material to be dredged suggests levels of lead and arsenic above water quality objectives, the dredged material is not expected to impact water quality when placed in locations authorized by this Order. Therefore, this dredged material is classified as an inert waste.

~~38.~~42. In order to provide an additional factor of safety to the conclusions of previous findings concerning the potential threat from lead and arsenic, this Order requires removal of dredged solids by 31 October 2007.

~~39.~~43. To verify groundwater protection, the Discharger is required to continue groundwater monitoring in accordance with the requirements of the Monitoring and Reporting Program.

BASIN PLAN, BENEFICIAL USES, AND REGULATORY CONSIDERATIONS

~~40.~~44. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board (State Board). These requirements implement the Basin Plan.

45. In January 2005, the Central Valley Water Board adopted Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control Program for Factors Contributing to the Dissolved Oxygen Impairment in the Stockton Deep Water Ship Channel (DO Control Program). In November 2005, the State Water Board approved the DO Control Program with minor modifications. The DO Control Program identifies the Stockton Deep Water Ship Channel (DWSC) geometry as a major contributor to the DO impairment and recommended to the Corps that it should reduce the associated impact. The DO Control Program also requires that a report be submitted by the Corps evaluating the impact of the DWSC on the DO impairment and outlines regulatory actions that can be taken by the Water Board to address the existing or any future modifications to the DWSC geometry that may be proposed.

~~41.~~46. The beneficial uses of the Sacramento-San Joaquin Delta are municipal supply; domestic supply; agricultural irrigation; process; service supply; water contact recreation; non-contact water recreation; warm fresh water habitat; cold fresh water habitat; warm water migration; cold water migration; warm water spawning; wildlife habitat; and navigation.

~~42.~~47. Designated beneficial uses of groundwater are municipal and domestic supply, industrial service and process supplies, and agricultural supply.

~~43.~~48. The Basin Plan states, "…*We will adopt requirements for all significant dredging operations and upland disposal projects in the Region.*" The dredging and subsequent upland disposal of dredged material from this project is considered to be a significant dredging operation within the Central Valley Region.

~~44.~~49. Section 13267(b) of the California Water Code provides that: "*In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or*

domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

~~45.~~50. USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters (SIP), Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan), which contains guidance on implementation of the *National Toxics Rule* and the *California Toxics Rule*. The Basin Plan contains the "Policy for Application of Water Quality Objectives" that requires consideration of published standards of other agencies in implementing narrative water quality objectives. The CTR and NTR standards may be incorporated in waste discharge requirements where appropriate to implement the Basin Plans consistent with the Policy for Application of Water Quality Objectives.

~~46.~~51. The Basin Plan numerical and narrative water quality objectives for surface and groundwater within the basin are achieved primarily through the adoption of waste discharge requirements. Narrative water quality objectives are implemented consistent with the Policy for Application of Water Quality Objectives contained in the Basin Plan by establishing numerical limitations based on, among other factors, published standards.

~~47.~~52. The Basin Plan contains narrative water quality objectives for chemical constituents, taste and odor, and toxicity. The narrative toxicity objective requires that surface waters and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in plants or animals. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses.

~~48.~~53. CWC Section 13241 requires the Regional Board to consider various factors, including economic considerations, when adopting water quality objectives into its Basin Plan. Water Code Section 13263 requires the Regional Board to address the factors in Section 13241 in adopting waste discharge requirements. The State Board, however, has held that a Regional Board need not specifically address the Section 13241 factors when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting water quality

objectives. This Order implements adopted water quality objectives. Therefore, no additional analysis of Section 13241 factors is required.

~~49.~~54. State Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality Waters in California") requires that the Regional Board, in regulating the discharge of waste, must maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with the maximum benefit to the people of the State; will not unreasonably affect beneficial uses; and will not result in water quality less than that described in the Regional Board's policies. Any activity that produces a waste or increased volume or concentration of waste, and which discharges or proposes to discharge to existing high quality waters, shall be required to meet waste discharge requirements which will result in best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur, and that the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

~~50.~~55. The discharges authorized by this Order are consistent with State Board Resolution No. 68-16 and 40 CFR 131.12 (the federal anti-degradation policy). With respect to surface waters, this Order may result in minor changes in water quality, therefore, this Order imposes requirements that will result in best practicable treatment or control necessary to assure that pollution and nuisance will not occur and that water quality objectives in the Basin Plan will be met. This Order prohibits the discharge of waste to surface water. The prohibition includes discharge of waste to agricultural drains.~~, for example, requires compliance with applicable water quality objectives and contains prohibitions to protect the waters from pollution.~~ With respect to groundwater, this Order establishes requirements that will result in best practicable treatment or control of the discharge to assure that pollution or nuisance will not occur, and that the discharges will not unreasonably affect beneficial uses or result in water quality less than prescribed in the Basin Plans. The groundwater limits prescribed herein are intended to ensure that the assimilative capacity of the underlying soils at the dredge disposal site will not be exceeded. In addition, the Discharger must conduct soil and groundwater monitoring. If the discharge violates the groundwater limits, then the Discharger may be required to cease the discharge, line the ponds, implement source control, change the method of disposal, or take other action to prevent groundwater degradation. This Order is consistent with the maximum benefit to the people of the State because it requires compliance with water quality objectives and allows for navigation, which is a designated beneficial use of the San Joaquin River.

~~51.~~56. CWC Section 13260 states that each Discharger covered under WDRs shall submit an annual fee. The filing fee accompanying the RWD is the first year's annual fee. The annual fee is based on the threat and complexity of the discharge (Title 23, California Code of Regulations, Section 2200). The threat and complexity of the proposed discharge has been determined to be "3C".

~~52.~~57. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to CWC section 13801, apply to all monitoring wells.

~~53.~~58. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27, California Code of Regulations (CCR), Section 20005 et seq. (hereafter Title 27). Because RN1 is a waste management unit, the data analysis methods of Title 27 is appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.

~~54.~~59. The discharge authorized herein and the treatment and storage facilities associated with the discharge are exempt from the liner requirements of Title 27 CCR. The exemption, pursuant to Title 27 CCR Section 20090(b), is based on the following:

a. Issuance of waste discharge requirements;

b. The consistency of the waste discharge requirements with the Basin Plan;

c. No necessity to manage wastewater according to Title 22, CCR, Division 4.5, and Chapter 11, as a hazardous waste; and

d. Slurry water from hydraulic dredging receives treatment in the confined disposal facility.

~~55.~~60. Pursuant to CWC Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

~~56.~~61. This Order does not preempt or supersede the authority of municipalities, flood control agencies, and other local agencies to prohibit, restrict, or control discharges of waste subject to their jurisdiction, but such regulation by other entities may not be less stringent than this Order.

62. On 23 June 2004, in accordance with the California Environmental Quality Act (CEQA) (PRC, Section 21000, et seq.), the Port of Stockton adopted an Environmental Impact Report (EIR) for the West Complex project. The project component, involving dredging of the river bottom adjacent to the West Complex docks to an elevation of 36 MLLW to allow for increased navigation activities at the West Complex, was specifically addressed in the EIR. The Regional Water Board, as a responsible agency, has considered the EIR prepared by the Port of Stockton as required by 14 California Code of Regulations section 15096. The Regional Water Board has included mitigation measures and requirements described in the EIR, in this Order to address significant environmental impacts that are within the jurisdiction of the Regional Board.

The EIR identifies a single significant impact on water quality. This impact is identified as "Long-term, far-field reduction of dissolved oxygen in the San Joaquin River" and is classified as a cumulative significant impact, before mitigation. The EIR identifies the following mitigation as required to reduce the impacts on dissolved oxygen to be less than significant: "The Port shall take ownership and operational responsibility of the aeration device currently owned and operated by the USACOE [Corps]. The USACOE [Corps] jet aerator was originally installed to mitigate for deepening of the DWSC from –30 to –35 feet. The aeration facility was constructed in 1993 and has been operated, as conditions have warranted, since then. The USACOE [Corps] agreed to provide aeration that would maintain a 0.2 mg/l DO increment above background conditions, whenever at any station measured by the City of Stockton dropped below 5.2 mg/l during September 1 through November. Consequently, the USACOE [Corps] requirement depends on the San Joaquin river stream flow and existing background DO levels."

The mitigation for dissolved oxygen, identified in the EIR, is required by this Order. Consistent with 14 CCR section 15096, the Order includes additional measures beyond those identified in the EIR to address DO, including requiring compliance with the applicable water quality objective in the receiving water for DO contained in the Basin Plan. The Order requires that the Port provide additional oxygen to mitigate for increased channel geometry as a result of dredging and operate an additional aeration device to address dissolved oxygen impacts while dredging operations are underway. The requirements to address dissolved oxygen are specified in the Aeration Requirement, Attachment C.

~~57.On 23 June 2004, in accordance with the California Environmental Quality Act (CEQA) (PRC, Section 21000, et seq.), the Port of Stockton adopted an Environmental Impact Report (EIR) for the West Complex project. The project that was the subject of the EIR was to dredge material from the river bottom adjacent to the West Complex docks to an elevation of 36 MLLW to allow for increased navigation activities at the West Complex. The Regional Board, as a responsible agency, has considered the EIR prepared by the Port of Stockton as required by 14 California Code of Regulations section 15096. As described herein, the Regional Board has included mitigation measures and requirements in this Order to address significant environmental impacts identified in the EIR that are within the jurisdiction of the Regional Board:~~

- ~~The EIR identified long-term reduction of dissolved oxygen in the San Joaquin River as having a less than significant impact. The EIR also indicates that the Port has taken operational responsibility of the aeration device currently owned and operated by the Corps. This Order requires operation of the Corps' aeration device to deliver 2,500 pounds per day of oxygen as required by the EIR. In addition, the Order requires that the Port operate the aeration device to provide additional oxygen to mitigate for increased channel geometry as a result of dredging. This Order also requires operation of an~~

~~additional aeration device to address dissolved oxygen impacts while dredging operations are underway. The Order contains other requirements to address dissolved oxygen as specified in the Aeration Agreement, Attachment C.~~

SITE-SPECIFIC FACTORS

~~58.~~63. The Delta waterways near Stockton are listed pursuant to Clean Water Act (CWA) section 303(d) as impaired for chlorpyrifos, DDT, diazinon, Group A pesticides, pathogens, mercury, and unknown toxicity. Low dissolved oxygen also causes impairment in the Stockton DWSC.

~~59.~~64. During dredging, sediment can be suspended in the water column if entrainment of the dislodged sediments is incomplete. The exposure of buried anaerobic sediments, ferrous iron and sulfide species to the water column can create an oxygen demand in the river. Therefore, the project may temporary exacerbate the existing low dissolved oxygen impairment in this CWA 303(d) listed water body.

~~60.~~65. The Discharger will incrementally increase the volume of the DWSC by the proposed dredging. The increase in volume may, in turn, increase the hydraulic residence time, which may allow more time for biochemical oxygen demand to be expressed. In addition, the activities associated with the West Complex may contribute to an increase in the amount of oxygen demanding substances discharged to the river.

~~61.~~66. As part of the mitigation measures specified in the EIR, the Discharger agreed to assume the operation and maintenance of the Corps' jet aeration device to provide mitigation for existing port operations and current channel conditions. In addition, the Discharger proposes to provide additional mitigation for possible effects of the proposed project dredging. The Aeration ~~Agreement~~Requirements, detailed in Attachment C, provides specific ~~requirements for~~ mitigation for current port operations and conditions, as well as for possible effects of increased channel geometry due to project dredging.

~~62.~~67. Dredging operations may also produce an oxygen demand in the vicinity of the dredging operation. In order to mitigate for the potential reduction in DO concentrations related to the actual dredging operation, the Aeration ~~Agreement~~ Requirements (Attachment C) specifies that the Discharger will operate a localized oxygen diffuser near the dredging operation at all times while dredging is occurring.

~~63.~~68. The dissolved oxygen objective in the Basin Plan is, "…*6.0 mg/L in the San Joaquin River (between Turner Cut and Stockton, 1 September through 30 November; and 5.0 mg/L in all other Delta waters*…" All in-water construction activities must comply with the ~~Basin Plan~~ dissolved oxygen requirements. If the ambient DO in the river should fall below ~~5.0 mg/L~~the water quality objective, then suspending dredging

activity until the DO rises above ~~5.0 mg/L~~the objective is appropriate to protect the beneficial uses of the river.

~~64.~~69. ~~Sediment~~ Whole sediment toxicity testing of the new sediment horizon at docks 14 and 15 did not indicate a toxic response for *Chironimus tentans* *and Hyaellla azteca*. Although no toxicity was observed in the pre-dredge sediment analysis, in order to ensure that the new horizon sediment is non-toxic, additional sediment sampling for toxicity testing, immediately after dredging operations are completed, is appropriate.

~~65.~~70. If whole sediment toxicity is found in the new horizon, this Order requires the Discharger to undertake appropriate actions to mitigate this toxicity, and retest sediment after each mitigation until no further toxicity is observed.

PUBLIC NOTICE

~~66.~~71. All the above and the supplemental information and details in the attached Information Sheet, incorporated by reference herein, were considered in establishing the following conditions of discharge.

~~67.~~72. Interested agencies and persons were notified of the intent to prescribe an Order for this discharge and provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

~~68.~~73. In a public meeting, all comments pertaining to the discharges were heard and considered.

IT IS HEREBY ORDERED that the Port of Stockton, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The discharge from dredging operations, including material disturbed by the cutter head during dredging, shall not cause or contribute to acute toxicity in the receiving waters.

2. Except for activities permitted by the U.S Army Corps of Engineers under Section 10 of the Rivers and Harbors Act and Section 404 of the CWA, soil, silt, or other organic material shall not be placed where such material could pass into surface water or surface water drainage courses.

3. The discharge of effluent, including bypass or overflow of untreated or partially treated waste from RN1 Areas B and C to surface waters and surface water drainage courses, including agricultural drains, is prohibited.

4. Discharge of waste classified either as 'hazardous,' defined in Section 20164 of Title 27, CCR, or 'designated,' as defined in Section 13173 of the California Water Code, is prohibited.

5. The discharge of petroleum products to surface waters is prohibited.

6. Activities shall not cause visible oil, grease, or foam in the work area or downstream.

7. Dredging operations shall not cause the ambient pH to fall below 6.5, exceed 8.5, or the 30-day average to change by more than 0.5 units.

8. Activities shall not cause turbidity increases in surface waters, at the point of compliance 100 feet downstream of the dredging operation, according to the following:

   (a) where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU;
   (b) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
   (c) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
   (d) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

9. Dredging operations shall not cause ammonia to exceed the Criteria Maximum Concentration in Attachment D.

10. Dredging operations shall not cause copper to exceed the Criteria Maximum Concentration in Attachment E.

11. Dredging operations shall not cause arsenic concentrations to exceed the Basin Plan's chemical constituent objective for arsenic of 10 µg/L in the Sacramento-San Joaquin Delta.

12. Dredging operations shall not cause barium concentrations to exceed the Basin Plan's chemical constituent objective for barium of 100 µg/L in the Sacramento-San Joaquin Delta.

13. Dredging operations shall not cause mercury concentrations to exceed the CTR limit for mercury of 0.05 µg/L.

14. Dredging operations shall not cause lead concentrations to exceed the Public Health Goal of 2.0 µg/L.

15. Dredging operations shall not cause the ambient temperature to increase more than 5°F.

16. Dredging operations shall not cause aquatic communities and populations, including vertebrate, invertebrate, and plant species, outside the dredge area to be degraded.

17. Dredging operations shall not cause toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health

18. Dredging operations shall not cause total identifiable persistent chlorinated hydrocarbon pesticides to be present at concentrations detectable within the accuracy of analytical methods approved by either the USEPA or the Executive Officer.

19. Dredging operations shall be confined to the project area described in Finding No. 7. The maximum depth of dredging shall not exceed a depth of 36 feet below mean low, low water.

20. The discharge of domestic wastewater is prohibited.

21. The discharge of dredged materials other than to RN1 Areas B and C is prohibited.

22. Increasing capacity at the DMD site is prohibited.

23. Dredging operations are prohibited anytime the ambient dissolved oxygen concentration within the impaired reach of the San Joaquin River is less than 5.0 mg/L. From 1 September to 30 November dredging operations are prohibited anytime the ambient dissolved oxygen concentration within the impaired reach of the San Joaquin River is less than 6.0 mg/L.

B. Discharge Specifications:

1. The total amount of dredged solids discharged to RN1 Areas B and C shall not exceed **130,000** cubic yards (80.6 acre-feet).

2. Neither the treatment, nor the discharge, shall cause a nuisance or condition of pollution as defined by the California Water Code, Section 13050.

3. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Objectives.

4. Objectionable odors originating at this facility disposal site shall not be perceivable beyond the limits of the property owned by the Discharger.

5. The dissolved oxygen content in the upper zone (1 foot) of all wastewater in the ponds shall not be less than 1.0 mg/L.

6. The Discharger shall maintain two feet of freeboard in RN1 Areas B and C at all times. Freeboard shall be measured vertically to the lowest point of overflow for all ponds.

7. RN1 Areas B and C shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

8. Newly constructed or rehabilitated levees at the confined disposal facility shall be designed and constructed under the direct supervision of the appropriate California Registered Professional.

9. The Discharger shall diffuse 2,500 pounds of oxygen per day, as specified in Attachment C.

10. In order to mitigate potential DO impacts from the dredging operation, the Discharger will operate a portable aeration device as close as possible to ~~within 1,000 feet of~~ the dredge without compromising safety. The Discharger will operate the aerator so as to diffuse oxygen at a minimum rate of 500 pounds per 24 hrs while dredging operations are underway. This aeration shall be in addition to the 2,500 pounds per day of oxygen required in Discharge Specification B.9.

11. During the removal of large objects from the river bottom using a hydraulic dredge and crane, the crane will be operated with gentle, discrete movements to minimize disturbance of sediments while removing debris. As appropriate, the hydraulic dredge will remove water and/or sediment from the immediate vicinity of the object in order to reduce suspension of sediment.

12. Discharger shall comply with all Department of Fish and Game 1600 requirements for the project as required.

C. Groundwater Limitation:

Release of waste constituents from RN1 Areas B and C shall not, in combination with other sources cause the following in groundwater:

1. Adversely impact beneficial uses or exceed water quality objectives.

2. The discharge, in combination with other site–derived sources, shall not cause underlying groundwater to contain waste constituents statistically greater than background water quality.

D. RN1 Site-Soil Limitation and Reuse Specification

The dredged sediment shall be removed for authorized reuse no later than 31 October 2007. Placement and reuse of the dredged sediment will be restricted to use as foundation material beneath engineered covers such as buildings, foundation slabs, parking lots or roadways; and at least two feet above any significant groundwater bearing zone.

No later than 30 days prior to reuse, the Discharger shall submit a detailed plan for the proposed reuse, which shall include specifications of cover, location, elevations and sediment volumes. Reuse may not occur until approval is granted by the Executive Officer. The Discharger shall notify all parties reusing material of the characteristics of that material, and that reuse must comply with all requirements of this Order.
Following reuse, the Discharger shall submit, along with engineering specifications of cover, a report documenting the locations, elevations and volumes of sediment reused.

E. Provisions

All of the following reports shall be submitted pursuant to California Water Code Section 13267 and shall be prepared by registered professionals as described by Provision No. E. 8:

1. Prior to discharging waste to RN1 Areas B and C, the Discharger shall develop and implement an Operations Plan that describes site operations and procedures to be followed before, during, and after dredging sediment placement including storm water management and dust control. –The Operations Plan must be submitted for Executive Officer approval and shall include emergency procedures for potential risks, including levee failures and overflow events.

2. Prior to discharging waste to RN1 Areas B and C, the Discharger shall develop and implement an Emergency Spill/Operation Plan (ESOP) that describes dredging operations and procedures to be followed when removing debris from the river bottom. The ESOP must be submitted for approval by the Executive Officer prior to debris removal and shall include emergency procedures for potential risks associated with debris removal, including spills of petroleum or other wastes from the identified magnetic anomalies. The ESOP shall also specify all necessary materials, staffing, and equipment required to implement the Plan.

3. The Discharger shall continue to submit a *Quarterly Groundwater Monitoring Report for RN1*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, as specified in the MRP.

   If any established background concentrations have been exceeded, then a specific plan for source control and a corrective action program and time schedule to assure compliance with the Discharge Specifications and Groundwater Limitations of this Order shall also be included.

4. If sediment toxicity monitoring, as described in the MRP, finds that the new river bottom sediment contains toxic areas or if the Executive Officer determines that the sediment is a threat to water quality, then within **90 days** following notification of a toxic sediment condition, the Discharger must submit a Sediment Toxicity Assessment/Remediation Workplan for the Executive Officer's approval.

   The workplan shall determine the responsible toxicant(s) in the sediment, characterize the extent of contamination in the new river bottom sediments, and describe in detail remedial corrective action(s) such that under environmental conditions the exposed sediment layer does not pose a threat to water quality. The workplan must contain a detailed time schedule to assure compliance with the Discharge Prohibitions and Receiving Water Limitations of this Order. The schedule must include proposed dates for each major step of the process (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contracts for major components, complying with CEQA, commencing construction, completing construction, etc.).

   The Discharger shall provide notification of the availability of the Sediment Toxicity Assessment/Remediation Workplan for all parties who have expressed an interest in writing.

5. The Discharger shall comply with the Aeration ~~Agreement~~Requirement, Attachment C, which specifies the ~~amount~~ rate of oxygen that the Discharger must diffuse into the water column of the San Joaquin River on a daily basis.

Failure to diffuse the prescribed ~~amounts~~ rates of oxygen is a violation of this Order.

6. Within 90 days after adoption of the WDRs, the Port shall submit a report describing the aeration system and how it will comply with the aeration requirements in Attachment C of the WDRs. The report shall include, but not be limited to:
   - description and layout of the aeration equipment to be used
   - operations plan, including how ambient DO concentrations will be monitored for the purpose of triggering operation of the aerators.
   - results of in-water performance testing to determine actual oxygen quantities dissolved into the water column
   - based on performance testing data provide estimates of oxygen outputs under reasonable worst-case ambient and saturated DO conditions.
   - corrective measures and plans for retesting if equipment fails to meet requirements

   The content and format of the report shall be coordinated beforehand with Water Board staff.

7. Within a year after adoption of the WDRs, the discharger shall perform a detailed follow-up evaluation of the amount of oxygen being dissolved into the water column by the aeration system. The content and format of this report is to be coordinated beforehand with Water Board staff. If the aeration system is meeting its design inputs, the need for future performance evaluation may be evaluated, but no more frequently than annually. If the aeration system is not meeting requirements, the Discharger will be required to describe corrective measures and plans for retesting.

8. Quarterly (September to November, December to February, March to May, June to August) beginning after approval of an acceptable aeration system by the Executive Officer, the Discharger will submit a report summarizing the operation of the aeration system. These reports must include a summary of the ambient dissolved oxygen data used during the quarter to determine operation of the aeration devices and other relevant data, and information on subsequent operation, including run-times and calculation of associated oxygen inputs. If changes to the aeration system are made during the quarter, a description of those changes must be provided in the next quarterly report. If changes to the aeration system are significant, retesting of the system effectiveness may be required. The content and format of these reports shall be coordinated beforehand with Water Board staff.

~~6.~~

~~6.~~9. Pursuant to Section 13267 of the California Water Code, the Discharger may be required to submit other technical reports as directed by the Executive Officer.

~~7.~~10. The Discharger shall comply with the attached Monitoring and Reporting Program No. R5-2006-XXX, which is part of this Order, and any revision thereto as ordered by the Executive Officer.

~~8.~~11. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.

~~9.~~12. By 15 December 2007, the Discharger shall submit, along with engineering specifications of cover, a report documenting the locations, elevations and volumes of sediment reused.

~~10.~~13. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are by reference a part of this Order. This document and its individual paragraphs are commonly referenced as "Standard Provision(s)."

~~11.~~14. The Discharger shall ~~immediately~~ notify the Regional Board within 24 hours by telephone whenever a violation or an adverse condition occurs as a result of the dredging or disposal operations. Written confirmation shall follow within two (2) weeks and shall describe the nature, time and cause of such non-compliance, along with a report of corrective actions and a timetable for their implementation. An "adverse condition" is defined as any action or incident that may result in a risk to public health and safety, condition of nuisance, violation of water quality standards or violation of condition or prohibition of this Order.

~~12.~~15. The Discharger shall not alternate any material or change the character, location, or volume of the discharge as described in the RWD.

~~13.~~16. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action, or imposing civil monetary liability, or in revision or rescission of this Order. The Regional Board considers the Discharger to have continuing responsibility for correcting any problems which

may arise in the future as a result of the dredging activities and of the subsequent use of RN1.

~~14.~~17. This Order does not relieve the Discharger from the responsibility to obtain other necessary local, State, and Federal permits to construct facilities necessary for compliance with this Order, nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.

~~15.~~18. A copy of this Order shall be kept as a reference for personnel operating the dredge or conducting operations related to this project at RN1 Areas B and C. Key operating personnel shall be familiar with the contents of the Order.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region on _____.

_____
PAMELA C. CREEDON, Executive Officer