0000000000000CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD CENTRAL VALLEY REGION

ORDER R5-2011-0005-01

NPDES NO. CAS0084077

WASTE DISCHARGE REQUIREMENTS FOR STOCKTON PORT DISTRICT FACILITY-WIDE STORM WATER DISCHARGES FROM MUNICIPAL SEPARATE STORM SEWER SYSTEM AND NON-STORM WATER DISCHARGES FROM THE PORT OF STOCKTON SAN JOAQUIN COUNTY

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

1. The Stockton Port District (the "Permittee") is a special district that owns and operates the Port of Stockton and its storm sewer system. The Port of Stockton (the "Port") is located within the City of Stockton, which is the largest city in San Joaquin County, with a population of about 287,000. In 1997, the Central Valley Water Board issued a municipal storm sewer system ("MS4") permit to the Permittee that regulated the Port as a medium MS4 under federal storm water regulations (40 C.F.R. § 122.26(b)(7).). The portion of the storm sewer system operated by the City of Stockton is separately regulated under different waste discharge requirements (Order R5-2007-0173).

2. Prior to issuance of this Order, the Permittee was covered under the State Water Board's General Industrial Permit, and then by an NPDES area-wide MS4 permit; Order 97-042 (NPDES No. CAS0084077), issued by the Central Valley Water Board in 1997 and Order R5-2004-0136 (NPDES No. CAS0084077), adopted on 15 October 2004.

3. The Port of Stockton is physically divided into a West Complex (formerly Rough & Ready Island) and an East Complex. The 640-acre East Complex is older and more developed than the West Complex, which was a former Naval facility acquired from the United States Navy in September 2003. The West Complex is being converted and developed for full-scale shipping and manufacturing operations, which will include maritime, industrial, and commercial uses.

4. The 1,460-acre West Complex is surrounded by water: The Stockton Deep Water Ship Channel ("DWSC") on the north, Burns Cutoff on the south and west, and the San Joaquin River to the east. Since the site was formerly the U. S. Naval Station, it was previously zoned for institutional uses. However, the Permittee is pursuing a change of land use designation in order to accommodate maritime, industrial and commercial land uses. The project will include the redevelopment of marine terminals on the existing 500 acres in the northern portion of the island and the development of a commercial and industrial park on the undeveloped 500 acres southern portion of the island.

5. Discharges from the Port's storm sewer system consist of storm water runoff and non-storm water discharges, which discharge directly or indirectly to the San Joaquin River and the DWSC as shown in the site location map in Attachment A. The receiving waters around the Port are tidally influenced.

6. The Permittee's land use authority allows industrial activity that may generate pollutants and runoff that could impair receiving water quality and beneficial uses. As a large industrial facility, the Port should be subject to an equivalent discharge standard as other industrial sites. Discharge Prohibition A.3. therefore defines the maximum extent practicable ("MEP") standard to be equivalent to Best Available Technology Economically Achievable for non-conventional and toxic pollutants ("BAT"), and Best Conventional Technology Economically Achievable for conventional pollutants ("BCT") for the purposes of this Order; however, the Central Valley Water Board recognizes that the character of the Port's discharge (especially discharges from the West Complex) could change in the future, either because the nature of the tenants changes or because the Permittee may at some point segregate industrial discharges from other discharges (i.e., commercial and possibly residential). Should the Permittee demonstrate that certain non-commingled storm water discharges to receiving waters are not industrial in nature; the Central Valley Water Board may consider revising Discharge Prohibition B.1. to define the discharge standard for those flows as strictly MEP rather than equivalent to BAT/BCT.

7. Some parts of the West Complex have elevations below the surrounding waterbodies, which cause the surface percolation of groundwater in these areas. This percolated groundwater is drained with reclamation ditches to a pump station, which discharges the groundwater to Burns Cutoff. Because the West Complex is known to have several areas where the underlying groundwater has been degraded from historical operations, groundwater discharges may be a source of pollution to surface waters.

8. This Order does not authorize the discharge of waste associated with groundwater pumping for the containment of contaminated groundwater plumes at the West Complex. Rather, the Permittee must submit a Report of Waste Discharge for coverage of the groundwater pumping operations, or submit a Notice of Intent for coverage under an applicable General NPDES Permit (e.g., low threat discharge, or groundwater treated for removal of fuel products or industrial solvents).

9. This Order is not intended to prohibit the inspection for or abatement of vectors by the State Department of Public Health or local vector agencies in accordance with Health and Safety Code section 2270 *et seq*. and Health and Safety Code section 116110 *et seq*. Certain Treatment Control Best Management Practices ("BMPs") if not properly designed, operated or maintained may create habitats for vectors (e.g. mosquito and rodents). This Order expects that the Permittee will closely cooperate and collaborate with local vector control agencies and the State Department of Public Health for the implementation, operation, and maintenance of Treatment Control BMPs in order to minimize the risk to public health from vector borne diseases.

10. The Port discharges urban runoff[1] from the East Complex retention basin to the San Joaquin River, a water of the United States, at the point latitude 37° 56'16" and longitude 121° 20'04". In addition, there are five major storm sewer discharges from the East Complex that flow via gravity into the DWSC, as shown on Attachment D. The West Complex has one major storm sewer discharge that flows to a pump station; discharge from the pump station is to the Burns Cutoff, as shown on Attachment C

11. The loading and unloading of materials from vessels and trains at the Port may result in pollutants (e.g., fertilizers and livestock feed) being spilled on the ground and discharged to adjacent waterbodies during rain events, or being directly spilled into those waterbodies. Discharge Prohibition A.3. generally prohibits the discharge of pollutants; however, this prohibition is not violated if the Permittee demonstrates that the discharge did not cause or contribute to an exceedance of an applicable water quality standard, and that the Permittee implemented BMPs meeting the BAT/BCT standard (a requirement of this Order).

12. The Permittee and its tenants are engaged in the shipping, loading and unloading (vessels and trains) of bulk commodities at the East Complex. These commodities include, but are not limited to, bulk fertilizers, prilled sulfur, cement, cottonseed, anhydrous ammonia, liquid fertilizer, petroleum coke, coal, molasses, bagged rice, scrap metal and steel products. Because handling bulk commodities at the Port may result in pollutants (e.g., fertilizers and livestock feed) being spilled on the ground and discharged to adjacent waterbodies during rain events, or being directly spilled into those waterbodies, monitoring during these activities is required.

13. Cargo ships are stabilized by filling ballast tanks or discharging water from them. The discharge of ballast tank water may result in non-native invasive species being introduced into the Delta. The organisms can become established in the Delta, where they may displace native species or cause significant ecological damage. In addition, ballast water may contain pathogens and other waste materials that may impact the beneficial uses of the Delta. Cargo ships have large ballast tanks, up to 30,000 cubic meters. International agreements[2] require cargo ships to intake and discharge ballast tank water in pelagic (open ocean) waters to the maximum extent practicable. This Order requires the Permittee to notify ship operators to ensure they are aware of these agreements. This Order does not, however, prohibit ballast water discharge because adjustments in ballast water may be necessary to ensure the stability of docked vessels.

14. The Port currently has about 150 permitted industrial tenants, most of which are engaged in material storage, handling and transfer. These materials include cement, liquid and dry fertilizers, sulfur, scrap metals, steel products, petroleum products, anhydrous ammonia, lumber, molasses, bulk rice, sunflower seed, windmill parts, and other miscellaneous materials. The Port's Storm Water Management Plan (SWMP) will include a complete inventory of its industrial tenants, including their locations and activities.

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[1] See Attachment E for a definition of "urban runoff" and other relevant terms.
[2] International Maritime Organization, International convention for the Control and Management of Ships Ballast & Sediments, adopted February 2004.

15. Development that is not guided by water quality planning policies and principles can result in increased pollutant load discharges, flow rates, and flow durations, which can impact receiving water beneficial uses. Construction sites without adequate BMP implementation result in sediment runoff rates that can greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. Existing development without adequate BMPs can generate substantial pollutant loads, which can be discharged in urban runoff to receiving waters.

16. The Permittee's land use authority allows urban developments that may generate pollutants and runoff that could impair receiving water quality and beneficial uses. The Permittee is therefore responsible for considering potential storm water impacts when making planning decisions in order to fulfill the Clean Water Act (the "CWA") requirement to reduce the discharge of pollutants in municipal storm water to the MEP from new development and redevelopment activities. In addition, the Permittee must exercise their legal authority to ensure that the increased pollutant loads and flows do not degrade the beneficial uses of the receiving water.

17. When natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops, and parking lots, the natural absorption and infiltration abilities of the land are lost. Therefore, runoff leaving a developed urban area is significantly greater in runoff volume, velocity, and peak flow rate than pre-development runoff from the same area. Runoff durations can also increase as a result of flood control and other efforts to control peak flow rates. Increased volume, velocity, rate, and duration of runoff greatly accelerate the erosion of downstream natural channels. Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as a 10 percent conversion from natural to impervious surfaces. The increased runoff characteristics from new development must be controlled to protect against increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.[3] This Order requires the Permittee to incorporate water quality and watershed protection principles into planning procedures and policies such as the Development Standards Plan ("DSP") and requirements to direct land-use decisions and require implementation of consistent water quality protection measures for all development projects. These principles and policies shall be designed to protect natural waterbodies, reduce impervious land coverage (such as through low impact development design), slow runoff to prevent hydromodification of waterways, and where feasible, maximize opportunities for infiltration of rainwater into soil.

18. Development and urbanization especially threaten environmentally sensitive waterbodies such as those supporting rare, threatened or endangered species and CWA section 303(d) impaired waterbodies. Such waterbodies may have a lower capacity to withstand pollutant shocks than might be acceptable in the general circumstance. In essence,

[3] USEPA, 1999. Part II. 40 C.F.R. Parts 9, 122, 123, and 124. National Pollutant Discharge Elimination System –Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. Federal Register.

development that is ordinarily insignificant in its impact on the environment may become more significant in a particularly sensitive environment. Therefore, additional control to reduce pollutants from new and existing development may be necessary for areas adjacent to or discharging directly to an environmentally sensitive water body.

19. Although dependent on several factors, the risks typically associated with properly managed infiltration of runoff are not significant. The risks associated with infiltration can be managed by many techniques, including (1) low impact design and hydromodification strategies required in the DSP; (2) designing landscape drainage features that promote infiltration of runoff, but do not “inject” runoff (injection bypasses the natural processes of filtering and transformation that occur in the soil); (3) taking reasonable steps to prevent the illegal disposal of wastes; (4) protecting footings and foundations; and (4) ensuring that each drainage feature is adequately maintained in perpetuity.

DISCHARGE CHARACTERISTICS

20. The quality and quantity of MS4 discharges vary considerably because of the effects of local hydrology, geology, land use, season, and sequence and duration of precipitation events. Industrial storm water runoff may contain pollutants that may lower the quality of receiving waters and adversely impact beneficial uses of the San Joaquin River and Delta. Studies indicate there may be increases in pollutant levels and aquatic toxicity in receiving waters as a result of industrial storm water discharges.

21. Pollutants that may be contained in storm water include, but are not limited to, certain heavy metals; sediments; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens; pesticides; unidentified sources of acute and chronic aquatic toxicity; and nutrients and other organic material that cause or contribute to the depletion of dissolved oxygen and/or toxic conditions in the receiving water. Excessive flow rates of storm water may cause or contribute to downstream erosion and/or excessive sediment discharge and deposition in stream channels.

22. The discharge of wash waters and polluted storm water from industries and businesses is an environmental threat, and can also adversely impact public health and safety. The pollutants of concern in such wash waters include food waste, oil and grease, and toxic chemicals (Washtenaw County Statutory Drainage Board – 1987 Huron River Pollution Abatement Program). Other storm water/industrial waste programs in California have reported similar observations and have identified illicit discharges from automotive and food service facilities as a major cause of contamination and water quality problems.

23. Certain pollutants present in storm water and/or industrial runoff may be derived from extraneous sources that the Permittee has no or limited jurisdiction over. Examples of such pollutants and their respective sources are: polynuclear aromatic hydrocarbons that are products of internal combustion engine operation, nitrates, bis (2-ethylhexyl) phthalate, pesticides, metals, and mercury from wet and dry atmospheric deposition; lead from fuels, copper from brake pad wear; zinc from tire wear; bacteria from natural

sources including wildlife; dioxins as products of combustion, and natural-occurring minerals from local geology. However, the implementation of the measures set forth in this Order is intended to reduce the entry of these pollutants into storm water and their discharge to receiving waters to the MEP.

24. The Port has identified six outfalls, within its jurisdiction. The Port began monitoring its storm water discharges as part of its original permit, Order 97-042, in 1997. Since receiving the second term permit in October 2004, the Permittee conducted Direct Discharge and Receiving Water Monitoring, which included urban discharge and receiving water monitoring for three events per year at five sites. In addition, water column toxicity testing, Port owned industrial monitoring, dry weather field screening, ship loading and unloading monitoring, and retention basin monitoring has been conducted as part of the baseline monitoring. These data have been reported in the Permittee's annual reports.

25. In addition to the baseline monitoring, the Permittee has developed and implemented a Water Quality Based Program to target specific waterbodies and evaluate the spatial and temporal trends of identified pollutants of concern ("POC"), as well as appropriate POC control measures. During 2004-2009 these special studies included:

- Pesticide Plan;
- Dissolved Oxygen Plan (oxygen-demanding compounds);
- Total Mercury and Methylmercury Control Program;
- Retention Basin Studies (variety of POCs); and
- BMP Effectiveness Studies.

These data are reported in the Permittee's annual reports.

STATUTORY AND REGULATORY CONSIDERATIONS

26. The CWA authorizes the U.S. Environmental Protection Agency ("US EPA") to permit a state to serve as the NPDES permitting authority in lieu of the US EPA. The State of California has in-lieu authority for the NPDES program. The Water Code authorizes the State Water Resources Control Board ("State Water Board"), through the Regional Water Boards, to regulate and control the discharge of pollutants into waters of the State. On 22 September 1989, the State Water Board entered into a Memorandum of Agreement with the US EPA to administer the NPDES Program governing discharges to waters of the United States.

27. This Order does not constitute an unfunded local government mandate subject to subvention under Article XIIIB, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Order implements federally mandated requirements under federal Clean Water Act section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants to the maximum extent

practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc. v. U.S. E.P.A.* (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Order is not reserved state authority under the Clean Water Act's savings clause (*cf. Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements which are not "less stringent" than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 882-883.)

Likewise, the provisions of this Order to implement total maximum daily loads ("TMDLs") are federal mandates. The federal Clean Water Act requires TMDLs to be developed for waterbodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once the U.S. Environmental Protection Agency or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable waste load allocation. (40 C.F.R. § 122.44(d)(1)(vii)(B).)]

Second, the local agency permittee's obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-governmental dischargers who are issued NPDES permits for storm water discharges. With a few inapplicable exceptions, the Clean Water Act regulates the discharge of pollutants from point sources (33 U.S.C. § 1342) and the Porter-Cologne regulates the discharge of waste (Wat. Code, § 13263), both without regard to the source of the pollutant or waste. As a result, the "costs incurred by local agencies" to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and nongovernmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers compensation scheme did not create a cost for local agencies that was subject to state subvention].)

The Clean Water Act and the Porter-Cologne Water Quality Control Act largely regulate storm water with an even hand, but to the extent there is any relaxation of this even-handed regulation, it is in favor of the local agencies. Except for municipal separate storm sewer systems, the Clean Water Act requires point source dischargers, including discharges of storm water associated with industrial or construction activity, to comply strictly with water quality standards. (33 U.S.C. § 1311(b)(1)(C), *Defenders of Wildlife v. Browner* (1999) 191 F.3d 1159, 1164-1165 [noting that industrial storm water discharges must strictly comply with water quality standards].) As discussed in prior State Water Resources Control Board decisions, this Order does not require strict compliance with

water quality standards. (SWRCB Order WQ 2001-15, p. 7.) The Order, therefore, regulates the discharge of waste in municipal storm water more leniently than the discharge of waste from non-governmental sources.

Third, the local agency permittee has the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order. The fact sheet demonstrates that numerous activities contribute to the pollutant loading in the municipal separate storm sewer system. Local agencies can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

Fourth, the permittee has requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in federal Clean Water Act section 301, subdivision (a) (33 U.S.C. § 1311(a).) and in lieu of numeric restrictions on their discharges. To the extent, the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate. (*County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.) Likewise, the permittee has voluntarily sought a program-based municipal storm water permit in lieu of a numeric limits approach. (See *City of Abilene v. U.S. E.P.A.* (5th Cir. 2003) 325 F.3d 657, 662-663 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The local agencies' voluntary decision to file a report of waste discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See *Environmental Defense Center v. USEPA* (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fifth, the local agencies' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under state law predates the enactment of Article XIIIB, Section (6) of the California Constitution.

28. The Water Quality Act of 1987 added Section 402(p) to the Clean Water Act (33 U.S.C. § 1251-1387). This section requires the US EPA to establish regulations setting forth NPDES requirements for storm water discharges in two phases.

- The US EPA Phase I storm water regulations were directed at MS4s serving a population of 100,000 or more, including interconnected systems and storm water discharges associated with industrial activities, including construction activities. The Phase I Final Rule was published on November 16, 1990 (55 *Fed. Reg*. 47990).

- The US EPA Phase II storm water regulations are directed at storm water discharges not covered in Phase I, including small MS4s (serving a population of less than 100,000), small construction projects (one to five acres), municipal facilities with delayed coverage under the Intermodal Surface Transportation Efficiency Act of

1991, and other discharges for which the US EPA Administrator or the State determines that the storm water discharge contributes to a violation of a water quality standard, or is a significant contributor of pollutants to waters of the United States. The Phase II Final Rule was published on December 8, 1999 (64 *Fed. Reg*. 68722).

29. This Order contains requirements based on assessments by Central Valley Water Board staff. Those assessments found that modifications were necessary to improve the Permittee's efforts to reduce the discharge of pollutants in urban runoff to the MEP and achieve water quality standards.

30. This Order is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water to the MEP from the permitted areas in the Port subject to the Permittee's jurisdiction.

31. Section 402(p)(3)(B)(ii) of the CWA requires that NPDES permits effectively prohibit non-storm water discharges into MS4s. Federal regulation 40 C.F.R. 122.26(d)(2)(iv)(B)(1) requires control programs to prevent illicit discharges to MS4s and allows certain categories of non-storm water discharges to MS4s provided that the Permittee eliminates such discharges once they are identified as sources of pollutants to waters of the United States. Illicit discharges can include low levels of chlorine if they originate from potable water sources.

32. The Permittee must maintain legal authority (40 C.F.R. § 122.26(d)(2)(i).) to protect and enhance the water quality of watercourses, waterbodies, and wetlands within the Port in a manner pursuant to and consistent with the CWA and the Porter-Cologne Water Quality Control Act.

33. Federal regulations 40 Code of Federal Regulations ("C.F.R.") section 122.26(d)(2)(iv)(A) and 40 C.F.R. section 122.26(d)(2)(iv)(C) require that MS4 permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that contribute a substantial pollutant load to the MS4. Federal regulations require that permittees establish priorities and procedures for inspection of industrial facilities and priority commercial establishments. This permit, consistent with the US EPA policy, incorporates a cooperative partnership, including the specifications of minimum expectations, between the Central Valley Water Board and the Permittee for the inspection of industrial facilities and priority commercial establishments to control pollutants in storm water discharges (58 Fed. Reg. 61157).

34. The State Water Board has issued two statewide general NPDES permits for storm water discharges: one for storm water from industrial sites, the General Industrial Activity Storm Water Permit (NPDES No. CAS000001)(the "General Industrial Permit"), and the other for storm water from construction sites, General Construction Activity Storm Water Permit (NPDES No. CAS000002)(the "General Construction Permit"). The current General Industrial Permit was reissued on 17 April 1997 and is scheduled for renewal during this

5-year term of this Order. The current General Construction Permit was reissued on 2 September 2009. In addition, the Central Valley Water Board has issued General Permit Order R5-2008-0081 for dewatering and other low threat discharges, which authorizes such discharges to the MS4s owned and operated by the Permittee. This Order requires the Permittee to conduct compliance inspections at industries and construction sites that discharge to its MS4. Many of these sites are currently covered under State NPDES General Permits.

35. When industrial or construction site discharges occur in violation of local permits and ordinances, the Central Valley Water Board in most cases refers first to the municipality where the discharge occurs for appropriate actions. If the Permittee has demonstrated a good faith effort to educate and enforce but remains unsuccessful, the Central Valley Water Board may assist the Permittee and conduct a cooperative investigation and/or enforcement effort including enforcement of the applicable statewide General Permit. If the municipality has not demonstrated a good faith enforcement effort, the Central Valley Water Board may initiate enforcement action against both the industrial or construction discharger under the statewide General Permits, as well as against the authorizing Permittee for violations of this Order. The Permittee must also provide the first level of enforcement against illegal discharges from other land uses it has authorized, such as commercial and residential developments.

36. This Order shall assure compliance with water quality standards. This Order therefore includes requirements to the effect that discharges shall not cause or contribute to exceedances of water quality standards that would cause or create a condition of nuisance, pollution, or water quality impairment in receiving waters. The Central Valley Water Board anticipates that these requirements will be addressed through an effective and iterative approach to implementation of BMPs to reduce pollutants in storm water.

37. Regulations in 40 C.F.R. section 122.26(d)(2)(iv) require that the Storm Water Management Plan ("SWMP") be implemented during the entire duration of the permit, which is five years. The Permittee shall demonstrate substantial compliance with the SWMP and this Order through the information and data supplied in the Annual Report. The SWMP shall remain in effect as an integral and enforceable part of this Order until revised and approved by the Central Valley Water Board. If there are conflicts between the SWMP and this Order, then the Order supersedes the SWMP.

38. The State and Regional Water Boards may consider issuing separate NPDES storm water permits to other federal, state, or regional entities operating and discharging within the Permittee's boundaries that may not be subject to direct regulation by the Permittee. Federal agencies are not subject to municipal storm water requirements although they may be permitted as industrial dischargers.

named in this Order, operate storm drain facilities and/or discharge storm water to the storm drains covered by this Order. The Permittee may lack legal jurisdiction over these entities under applicable state and federal authorities. Consequently, the Central Valley Water Board recognizes that the Permittee should not be held responsible for such facilities and/or discharges. However, the Permittee should notify the Central Valley Water Board upon recognition of discharges, which are a threat to storm water quality protection.

40. The Central Valley Water Board adopted the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins, Fourth Edition,* revised September 2009, *for the Sacramento and San Joaquin River Basins* (the "Basin Plan"). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. This Order implements the Basin Plan.

41. The beneficial uses of the San Joaquin River and Delta downstream of the discharge as identified in Table II-1 of the Basin Plan are municipal and domestic supply; industrial service and process supply; agricultural supply; contact and non-contact recreation; warm and cold freshwater habitat and migration; warm water spawning habitat; wildlife habitat; and navigation.

42. The beneficial uses of the underlying ground water beneath the Stockton Urbanized Area as identified in the Basin Plan are municipal and domestic water supply, industrial service, industrial process, and agricultural supply.

43. This Order requires implementation of programs (i.e., BMPs) to reduce the level of pollutants in storm water discharges to the MEP and any additional controls necessary to comply with the applicable Waste Load Allocations ("WLAs") contained in approved TMDLs. With future development within the area, it is possible that future degradation in water quality could occur. Any such change in water quality will not unreasonably affect the present and anticipated beneficial uses of water and will not result in water quality less than that prescribed in policies of the State Water Board. The programs required pursuant to this order constitute the best practicable treatment or control of discharges necessary to ensure that any pollution or nuisance will not occur and the highest quality consistent with maximum benefit to people of the State will be maintained and is in accordance with federal and state antidegradation policies.

44. Clean Water Act section 402(p)(3)(B)(III) requires MS4 operators to control pollution in storm water to the MEP. The MEP requirement is analogous to a technology-based requirement that focuses upon the feasibility of pollutant reduction measures rather than achievement of water quality standards in the receiving waters to achieve improvements in the quality of the storm water that is discharged. Compliance with the MEP requirement can range from implementation of structural and nonstructural best management practices to installation of end-of-pipe treatment systems. The MEP standard provides MS4 operators with considerable flexibility in proposing controls to be

Reg. 48037-38 and 48052-53 (Nov. 16, 1990)). However, the determination of what controls are sufficient to meet MEP is ultimately made by the Central Valley Water Board (40 C.F.R. § 122.26(d)(2)(iv).). Nevertheless, the requirement to implement controls that reduce pollutants to the MEP is not limited by the goal of attaining water quality standards. The Central Valley Water Board may use its discretion to impose other provisions beyond MEP, as it determines appropriate for the control of pollutants including ensuring strict compliance with water quality standards, (*Defenders of Wildlife V. Browner* (1999) 191 F.3d 1159, 1168). 40 C.F.R. section 122.26(d)(2)(iv)(B)(1)[4] lists several non-storm water flows that are not required to be prohibited unless such discharges are specifically identified by the Phase I MS4 Permittee as sources of pollutants to waters of the United States.

45. The US EPA published an 'Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits' on August 26, 1996 (61 Fed. Reg. 43761). This policy discusses the appropriate kinds of water quality-based effluent limitations to be included in NPDES storm water permits to provide for the attainment of water quality standards.

46. On 12 March 2001, the U.S. Court of Appeals ruled that it is necessary to obtain an NPDES permit for application of aquatic pesticides to waterways (*Headwaters, Inc. vs. Talent Irrigation District* (Ninth Cir., 2001) 243 F.3d. 526.). The US EPA issued a Final Rule on 17 October 2006, that exempts the application of a pesticide to or over, including near, waters of the United States if conducted consistent with all relevant requirements under the Federal Insecticide and Fungicide Rodenticide Act (FIFRA), from an NPDES permit under the Clean Water Act in the following two circumstances, which are covered by General Permits in California: (a) the application of pesticides directly to waters of the United States in order to control pests,[5] and (b) The application of pesticides to control pests that are present over waters of the United States, including near such waters,[6] that results in a portion of the pesticides being deposited to waters of the United States (40 C.F.R. § 122.3(h).).

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[4] 40 C.F.R. 122.26(d)(2)(iv)(B)(1) A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program description shall address all types of illicit discharges, however the following category of non-storm water discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 C.F.R. 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (program descriptions shall address discharges or flows from fire fighting only where such discharges or flows are identified as significant sources of pollutants to waters of the United States).

[5] Water Quality Order No. 2004-0008-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Discharges of Aquatic Pesticides to Surface Waters of the United States for Vector Control, General Permit No. CAG990004

[6] Water Quality Order No. 2004-0008-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Discharges of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States, General Permit No. CAG990005

47. On 17 June 1999, the State Water Board adopted Order WQ-99-05 a precedent setting-decision which identified acceptable receiving water limitations language to be included in municipal storm water permits issued by the Regional Water Boards. The receiving water limitations included herein are consistent with applicable State Water Board Order, US EPA policy, and the U.S. Court of Appeals decision in *Defenders of Wildlife v. Browner*. The State Water Board's Office of Chief Counsel ("OCC") has determined that the federal court decision did not conflict with Order 99-05 (memorandum dated October 14, 1999).

48. 40 C.F.R. section 122.42(c)(7) requires the Permittee to submit an annual report that identifies water quality improvements or degradation.

49. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (Pub. Resources Code § 21100, et seq.) in accordance with Water Code section 13389.

50. This Order serves as an NPDES permit, pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 50 days from the date of hearing, provided that US EPA has no objections.

51. This Order does not authorize any take of endangered species. To ensure that endangered species issues have been raised to the responsible agencies, the Central Valley Water Board notified the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Game of Central Valley Water Board consideration of this Order.

52. State law pre-empts local storm water programs from regulating pesticide sales and use. Regulatory activities by state and federal agencies, especially the state Department of Pesticide Regulation DPR and the US EPA, are critical for achieving adequate control of pesticide uses that result in pesticide discharges in storm water. Pesticide registration and re-registration activities, which are very active areas of pesticide regulation, are especially important in the control of pesticide use.

53. Individually, and through California Storm Water Quality Association ("CASQA"), the Permittee has actively participated in State and Federal organizations and processes to address regulatory issues. This includes the Urban Pesticide Committee ("UPC") and Department of Pesticide Regulation's ("DPR") Pest Management Advisory Committee ("PMAC") and Pesticide Registration and Evaluation Committee ("PREC"), and various committees convened by the State Structural Pest Control Board. These committees provide forums in which USEPA, DPR, and the Regional Water Boards participate, and have been effective in bringing water quality concerns to the attention of state and federal pesticide regulators. Ongoing support and participation in these efforts by the Regional Water Boards is an important factor for continued progress. Progress in these efforts has been documented in reports submitted to the San Francisco Bay Water Board by the San Francisco Estuary Project.

54. In compliance with the second term Permit, the Permittee submitted a Report of Waste Discharge ("ROWD"), as well as a proposed SWMP on 17 April 2009. The ROWD evaluated the effectiveness of the Permittee's storm water programs over the second permit term, identified which BMPs should continue to be implemented, and, as part of the iterative process, determined what additional efforts may be necessary in order to improve the storm water program and reduce the discharge of pollutants to the MEP. Based on the evaluation, the ROWD and proposed SWMP include a wide range of continuing, enhanced and new BMPs, control measures, and performance standards to be implemented during the third term Permit period (2011-2016).

55. 40 C.F.R. section 122.26(d)(2)(iv) requires the Permittee to submit a SWMP to reduce the discharge of pollutants in storm water to the MEP, and to effectively prohibit non-storm water discharges into municipal storm drain systems within the Permittee's jurisdiction during the five-year duration of the permit. During the third term permit period, the Permittee shall continue to demonstrate substantial compliance with its SWMP and this Order through the information and data supplied in the Annual Reports. The SWMP shall remain in effect, as an integral and enforceable component of this Order, until revised and approved by the Central Valley Water Board. If there are conflicts between the SWMP and this Order, then the Order supersedes the SWMP.

56. This Order requires evaluation of water quality impacts of storm water discharges from industrial and construction sites, existing urbanized areas, and new developments. This Order also requires implementation and evaluation of the SWMP and related programs to reduce the discharge of pollutants in storm water runoff to MEP and to improve water quality and protect beneficial uses.

57. The Permittee is required to submit a revised SWMP by **3 August 2011 (or 6 months after the effective date of this Order, whichever is later)**. The SWMP fulfills the Central Valley Water Board's permit application requirements subject to the condition that it will be improved and revised in accordance with the provisions of this Order. The SWMP describes the framework for management of storm water discharges during the term of this Order. The SWMP also describes the goals and objectives; legal authorities; source identification process; funding sources; fiscal analysis; assessment controls; BMPs evaluation and improvement process effectiveness assessment strategy, details pertaining to water quality based programs (e.g., DO, pesticides, and total mercury and methylmercury), and monitoring plan of the Permittee's storm water management program. The SWMP includes program elements and control measures that the Permittee will implement to reduce the discharge of pollutants in storm water to the MEP, and to effectively prohibit non-storm water discharges into MS4s and watercourses within the Permittee's jurisdiction. The Permittee's SWMP is a site-specific modification of the existing SWMP required under the previous MS4 permit Order R5-2004-0136. The various components of the SWMP, taken as a whole rather than individually, are expected to reduce pollutants in storm water and urban runoff to the MEP.

58. The overall goals of the Permittee's SWMP are to: a) reduce the degradation of waters of the State and waters of the United States (U.S.) by industrial runoff and protect their beneficial uses, and b) develop and implement an effective SWMP that is well understood and broadly supported by regional stakeholders. The core objectives are to:

    a. Identify and control those pollutants in urban runoff that pose significant threats to the waters of the State and waters of the U.S. and their beneficial uses;
    b. Comply with the federal regulations to eliminate or control, to the MEP, the discharge of pollutants from urban runoff associated with the storm drain system;
    c. Achieve compliance with water quality standards;
    d. Develop a cost-effective program which focuses on pollution prevention of urban storm water;
    e. Seek cost effective alternative solutions where prevention is not a practical solution for a significant problem; and
    f. Coordinate implementation of control measures with other agencies.

59. The SWMP outlined in the ROWD and the additional and/or revised provisions contained in this Order emphasize pollution prevention through the following program elements:

    a. Program Management
        - Legal Authority
        - Fiscal Analysis

    b. Program Elements
        - Construction
        - Industrial and Commercial
        - Municipal Operations
        - Illicit/Illegal Discharges
        - Public Education and Outreach
        - Storm Water Planning and Development Standards

    c. Baseline Monitoring
        - Urban Discharge Monitoring
        - Receiving Water Monitoring
        - East Complex Retention Basin Monitoring
        - Port Owned Industrial Monitoring
        - Ship Loading and Unloading Monitoring
        - Water Column Toxicity Monitoring
        - Dry Weather Field screening

    d. Water Quality Based Programs
        - Pesticide Plan
        - Low Dissolved Oxygen Plan
        - Total Mercury and Methylmercury Control Program

e. Special Studies
- Retention Basin Studies
- BMP Effectiveness Studies

f. Program Implementation
- Annual Work Plan
- Annual Evaluation
- Annual Reporting

60. This Order includes a Monitoring and Reporting Program ("MRP") that incorporates requirements to utilize the lowest quantifiable concentration for priority toxic pollutants that is measurable with the use of proper method-based analytical procedures and factoring out matrix interference. Therefore, the Port must utilize the best available science for detecting the presence and levels of pollutants, which are appropriate for a storm water monitoring program. This will allow the detection of toxic priority pollutants at concentrations of concern using recent advances in approved chemical analytical methods.

61. The Permittee's proposed SWMP contains control measures that identify the specific BMPs that will be implemented to reduce the discharge of pollutants from their MS4 to the MEP. The SWMP also includes performance standards for each Control Measure to establish the level of effort required to comply with this Order and the federal MEP standard and an implementation schedule to identify when certain activities must be completed. Each Program Element also identifies how effectiveness assessments will be utilized to ensure that the program is resulting in the desired outcomes and that the resources that are expended are providing commensurate benefit and are protective of water quality.

62. The SWMP and modifications or revisions to the SWMP that are approved in accordance with this Order, are an integral and enforceable component of this Order. USEPA Phase I Final Rule and Regulations states the Clean Water Act contemplated MS4 permit conditions requiring storm water management programs to be developed and implemented or required specific practices, those program elements were enforceable in accordance with the terms of permit.

DEVELOPMENT STANDARDS

63. The primary purpose of the revision and continued implementation of the DSP is to mitigate urban run-off pollution and other water quality impacts associated with new development and redevelopment.

64. On 5 October 2000, the State Water Board adopted Order WQ 2000-11, a precedent setting decision concerning the use of Standard Urban Storm Water Mitigation Plans (hereafter Development Standards) in municipal storm water permits for new

developments and significant redevelopments. The State Water Board recognized that the decision includes significant legal or policy determinations that are likely to recur (Gov. Code §11425.60). Due to the precedent setting nature of Order WQ 2000-11, the Central Valley Water Board's MS4 permits must be consistent with applicable portions of the State Water Board's decision and include Development Standards.

65. 40 C.F.R. section 131.10(a) prohibits states from designating waste transport or waste assimilation as a use for any water of the United States. Authorizing the construction of a storm water/urban runoff treatment facility in a jurisdictional water body would be tantamount to accepting waste assimilation as an appropriate use for that water body. Furthermore, the construction and operation of a pollution control facility in a water body can impact the physical, chemical, and biological integrity as well as the beneficial uses of the water body. Therefore, storm water treatment and/or mitigation in accordance with Development Standards and any other requirements of this Order must occur prior to the discharge of storm water into a water of the United States.

66. On 17 February 2006, the Port began implementing their DSP. This Order requires the revision of the DSP as part of the SWMP. The revised DSP for new development and significant redevelopment will be implemented through the Port's legal authority. The DSP establishes requirements for the selection of construction and post-construction storm water quality controls (i.e., LID BMPs) to reduce pollutants from new development and significant redevelopment to the MEP. The Port is also required to revise its ordinances, statutes, permits, contracts, or similar requirements, to ensure that they reflect the minimum standards set forth in the revised DSP.

67. Urbanization is defined as the transformation of land into residential, commercial and industrial properties, and associated drainages, roads, sewers and other community planned infrastructure. Urbanization modifies natural watershed and stream processes by altering the terrain, modifying the vegetation and soil characteristics, introducing impervious surfaces such as pavement and buildings, installing drainage and flood control infrastructure and altering the condition of stream channels through straightening, deepening, and armoring. These changes affect hydrologic characteristics in the watershed (rainfall interception, infiltration, runoff and stream flows) and affect the supply and transport of sediment in the stream system. The change in runoff characteristics from a watershed caused by changes in land use conditions (i.e., urbanization) is defined as hydrographic modification, or hydromodification.[7] When development projects do not address and mitigate for this change in runoff characteristics, a variety of problems can result, such as: excess sediment flowing into streams; downstream erosion and sedimentation; flooding; disruption of natural drainage patterns, stream flows and riparian habitat; and elevated water temperatures.

[7] Santa Clara Valley Urban Runoff Pollution Prevention Program. March 2005. Hydromodification Management Report. (Chapter 1, Problem Statement).

68. Urban development includes both new development and redevelopment of existing properties. These development projects may be undertaken by either private or public entities.

69. The quality and quantity of storm water runoff must be considered early during project planning to identify permanent (post-construction) BMPs that will be included in project design, constructed as part of the project, and ultimately implemented and maintained for the life of each category of urban development in order to protect storm water quality.

70. On January 20, 2005, the State Water Board adopted sustainability as a core value for all California Water Boards' activities and programs, and directed California Water Boards' staff to consider sustainability in all future policies, guidelines, and regulatory actions.

71. Low Impact Development ("LID") is a storm water management strategy concerned with maintaining or restoring the natural hydrologic functions of a site to achieve natural resource protection objectives and fulfill environmental regulatory requirements. LID employs a variety of natural and built features that reduce the rate of runoff, filter out pollutants, and facilitate the infiltration of water into the ground. By reducing runoff pollution and increasing groundwater recharge, LID may help to improve the quality of receiving surface waters and stabilize the flow rates of nearby streams. Therefore, LID design concepts are required to be addressed in the revised DSP for new developments and significant redevelopments.

72. In a study conducted for the San Diego region, it was concluded that LID substantially preserves pre-development hydrologic conditions and prevents most or all pollutant transport to receiving waters from urbanization.[8] Further, it was concluded that LID reduces storm water run-off and contaminants by decreasing their generation at sources, infiltrating into the soil or evaporating storm flows before the runoff can enter surface receiving waters, treating flow remaining on surface through contact with vegetation and soil, or a combination of these strategies.[9] LID practices maintain and restore the natural hydrologic functions of a site to achieve natural resource protection objectives.

73. During the initial site layout and design planning of new development or re-development for LID integration, there is a higher probability for preservation/integration of existing natural resource features (trees and other vegetation, creek buffers, wetlands, vernal pools, and open space).

74. In November 2005, under the direction of US EPA Assistance Agreement funded by the Office of Water, The Low Impact Development Center prepared a document titled, "Low Impact Development for Big Box Retailers."10 The guidance document provides recommendations for large building and site footprint high volume retailers with strategies that integrate innovative and highly effective LID storm water management techniques

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[8] Horner, Richard R., Ph.D., "Investigation of the feasibility and benefits of Low Impact Design (LID) practices for the San Diego Region," University of Washington.
[9] Ibid.
[10] "Low Impact Development for Big Box Retailers," EPA Office of Water, November 2005

into their site designs for regulatory compliance and natural resource protection at the local levels.

75. Hydromodification is the alteration of the natural flow of water, and often takes the form of channelizing former stream or riverbeds. When development projects that modify hydrology are carried out without protecting soil and water resources, a variety of problems can result, including: excess sediment flowing into our watersheds; downstream erosion; disruption of natural drainage; irregular stream flows; and elevated water temperatures. Therefore, hydromodification design concepts should be addressed in the revised Development Standards for new developments and significant redevelopments.

76. Studies indicate that facilities with paved surfaces subject to frequent motor vehicle traffic (such as parking lots and fast food restaurants), or facilities that perform vehicle repair, maintenance, or fueling (automotive service facilities) are potential sources of pollutants of concern in storm water. [References: Pitt et al., Urban Storm Water Toxic Pollutants: Assessment, Sources, and Treatability, Water Environment Res., 67, 260 (1995); Results of Retail Gas Outlet and Commercial Parking Lot Storm Water Runoff Study, Western States Petroleum Association and American Petroleum Institute, (1994); Action Plan Demonstration Project, Demonstration of Gasoline Fueling Station Best Management Practices, Final Report, County of Sacramento (1993); Source Characterization, R. Pitt, In Innovative Urban Wet-Weather Flow Management Systems (2000) Technomic Press, Field, R et al. editors; Characteristics of Parking Lot Runoff Produced by Simulated Rainfall, , L.L. Tiefenthaler et al. Technical Report 343, Southern California Coastal Water Research Project (2001)].

77. The Permittee is responsible for adopting and enforcing the implementation of effective BMPs to prevent or reduce pollutants in storm water and for providing funds for capital, operation, and maintenance expenditures necessary to implement such BMPs for the storm drain system that it owns and/or operates.

IMPAIRED WATERBODIES

78. Section 303(d)(1)(A) of the CWA requires that “Each state shall identify those waters within its boundaries for which the effluent limitations…are not stringent enough to implement any water quality standard (“WQS”) applicable to such waters.” The CWA also requires states to establish a priority ranking of impaired waterbodies known as Water Quality Limited Segments and to establish TMDLs for such waters. This priority list of impaired waterbodies is called the Section 303(d) List.

79. CWA section 303(d) and 40 C.F.R. section 130.7 require states to list water quality-impaired waterbodies and pollutants of concern, and develop TMDLs, which are quantitative assessments of the total pollutant load that can be discharged from all sources each day while still meeting water quality objectives. The Central Valley Water Board is currently in the process of developing TMDLs for listed waterbodies within the Region. Prior to TMDLs being adopted and approved, the Permittee must implement

actions and/or assessments to address their contribution to the water quality impairments. Once the Central Valley Water Board and US EPA approve TMDLs, this Order may be reopened to incorporate provisions consistent with waste load allocations established under the TMDLs.

80. The Central Valley Water Board finds storm water discharges from urban, industrial, and developing areas in the Central Valley Region to be significant sources of certain pollutants that cause or may be causing or threatening to cause or contribute to water quality impairment in waters of the Region. Furthermore, as delineated in the CWA section 303(d) list (2010 Integrated Report), the Central Valley Water Board has found that there is a reasonable potential that municipal storm water discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants/stressor(s) and listed waterbodies:

Waterbody	Reach	Estimated Size affected	Pollutant/Stressor(s)
Delta Waterways	Eastern Portion	2972 acres	Chlorpyrifos (TMDL) DDT Diazinon (TMDL) Invasive Species Group A Pesticides Mercury Toxicity of Unknown Origin
Delta Waterways	Southern Portion	3125 acres	Chlorpyrifos (TMDL) DDT Diazinon (TMDL) Electrical Conductivity Group A Pesticides Invasive Species Mercury Toxicity of Unknown Origin
Delta Waterways	Stockton Ship Channel	1603 acres	Chlorpyrifos (TMDL) DDT Diazinon (TMDL) Dioxin Invasive Species Furan Compounds Group A Pesticides Mercury Low Dissolved Oxygen (TMDL) Pathogens PCBs (Polychlorinated Biphenyls) Toxicity of Unknown Origin

In accordance with CWA section 303(d), the Central Valley Water Board is required to establish TMDLs for these pollutants to these waters to gradually eliminate impairment

and attain water quality standards. Therefore, certain early pollutant-control actions and further pollutant impact assessments by the Permittee is warranted and required pursuant to this Order. TMDLs for these waterbodies are in various stages of completion. NPDES permits must be consistent with approved TMDL waste load allocations. To implement adopted TMDLs, this Order implements control programs developed to attain waste load allocations.

81. The Central Valley Water Board Toxic Hot Spots Clean-up Plan (Wat. Code § 13394) identified the following hot spots that are applicable to this discharge:

    a. Mercury in the Delta;
    b. Diazinon and Chlorpyrifos in the Delta; and
    c. Dissolved oxygen in the San Joaquin River at City of Stockton.

82. The Water Code section 13395 requires the reevaluation of waste discharge requirements for dischargers who have discharged pollutants causing all or part of the toxic hot spot. The waste discharge requirements must be revised to include requirements that "prevent the maintenance or further pollution of existing toxic hot spots." Further "(t)he Central Valley Water Board may determine it is not necessary to revise a waste discharge requirement only if it finds that the toxic hot spot resulted from practices no longer being conducted by the discharger... or that the discharger's contribution to the creation or maintenance of the toxic hot spot is not significant." Requirements to prevent the creation of new or maintenance of existing toxic hot spots are required in the Provisions section of this Order to address the 303(d) listings for these waterbodies.

83. Water Code section 13263(a) requires waste discharge requirements to implement the Basin Plan. The Basin Plan contains numeric and narrative water quality objectives to protect the beneficial uses of surface water and groundwater. The Basin Plan contains the "Policy for Application of Water Quality Objectives" that specifies how the Central Valley Water Board will ensure compliance with narrative water quality objectives. That Policy states that the Central Valley Water Board will consider:

    > "relevant numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., US EPA). In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective." (Basin Plan at IV-17.00)

84. The Basin Plan contains a narrative toxicity objective that states: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00)

85. The Permittee submitted to the Central Valley Water Board the Pesticide, Herbicide and Fertilizer Management Plan, Port of Stockton ("Pesticide Plan") on 10 October 2000

(revisions 10 October 2005, 3 March, 2006 and 5 May 2008). This work plan met the requirements for a pesticide pollution prevention plan under the NPDES area-wide MS4 permit, Order R5-2004-0136 (NPDES No. CAS00084077). The work plan was approved by the Executive Officer on 10 November 2004.

86. The Central Valley Water Board adopted a basin plan amendment (Resolution No. R5-2006-0061) that meets the requirements of a TMDL for the 303(d) listing for diazinon and chlorpyrifos in the Sacramento-San Joaquin Delta Waterways (Delta Waterways).

a. The basin plan amendment includes water quality objectives for:

i. Diazinon: 160 nanograms per liter (ng/L or parts per trillion), one-hour average, not to be exceeded more than once in a three-year period and 100 ng/L, four-day average, not to be exceeded more than once in a three-year period, which apply to Delta Waterways (Basin Plan[11]); and

ii. Chlorpyrifos: 25 ng/L, one-hour average, not to be exceeded more than once in a three-year period and 15 ng/L, four-day average, not to be exceeded more than once in a three-year period which apply to Delta Waterways (Basin Plan).

b. The Central Valley Water Board has also established in the Basin Plan the Loading Capacity (LC) for the Delta Waterways, WLAs, and Load Allocations (LAs) for discharges to the Delta Waterways, which shall not exceed the sum (S) of one (1) as defined below:

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where:

C_D = diazinon concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.
C_C = chlorpyrifos concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.
WQO_D = acute or chronic diazinon water quality objective in µg/L.
WQO_C = acute or chronic chlorpyrifos water quality objective in µg/L.

Compliance with the waste load allocation is required **by 1 December 2011** (Basin Plan).

[11] Sacramento-San Joaquin Delta Waterways, Central Valley Regional Water Quality Control Board, *Water Quality Control Plan (Basin Plan), Central Valley Region, Sacramento River and San Joaquin River Basins (Fourth Edition, revised Oct. 2007)* including Appendix 42 –

c. Dischargers of diazinon and chlorpyrifos to Delta Waterways are required to develop and implement a **Pesticide Management Plan** that describes actions that will be taken to reduce diazinon and chlorpyrifos discharges and meet the applicable allocations. The plan shall ensure that measures that are implemented to reduce discharges of diazinon and chlorpyrifos do not lead to an increase in the discharge of other pesticides to levels that cause or contribute to violations of applicable water quality objectives and Central Valley Water Board plans and policies. The plan shall be included as a component of the SWMP.

d. The Permittee must consider whether any proposed alternative to the use of diazinon or chlorpyrifos has the potential to degrade ground or surface water. If the alternative has the potential to degrade groundwater, alternative pest control methods must be considered. If the alternative has the potential to degrade surface water, control measures must be implemented to ensure that applicable water quality objectives and Central Valley Water Board plans and policies are not violated, including State Water Resources Control Board Resolution 68-16.

e. The approved Pesticide Plan and any modifications to it, as proposed in the SWMP, meet the requirements for a management plan as described in Resolution R5-2006-0061.

f. Limited data are available to determine the relative contribution of the Permittee's discharge (compared to upstream and atmospheric contributions from non-urban sources) to the diazinon and chlorpyrifos levels in 303(d) listed waters and toxic hot spots.

g. The ban of the sale, with use allowed of existing stock, of diazinon and chlorpyrifos for most residential and commercial uses should significantly reduce or eliminate, over time, the contribution of the Permittee's discharge to the non-attainment of water quality standards in the 303(d) listed waters and the maintenance of the diazinon and chlorpyrifos hot spots.

h. The continued monitoring of diazinon and chlorpyrifos is needed to determine the significance of the Permittee's contribution to diazinon and chlorpyrifos levels in 303(d) listed waters and the toxic hot spots. Monitoring is also needed to determine the effectiveness of the phase-out of urban uses of diazinon and chlorpyrifos; to assess whether the hot spots are maintained; and to assess whether water quality objectives are met.

i. This Order includes Provisions consistent with the TMDL waste load allocations and the Basin Plan implementation program. This Order specifies monitoring and assessment requirements to implement these Provisions.

87. The Basin Plan includes TMDL waste load allocations and an implementation program to control factors that contribute to the dissolved oxygen impairment in the DWSC. To address the dissolved oxygen impairment, the Permittee shall develop and implement a

Low Dissolved Oxygen Plan for the DWSC. The plan shall be included as a component of the SWMP. This Order includes Provisions consistent with the TMDL waste load allocations and the Basin Plan implementation program.

88. The Central Valley Water Board adopted a basin plan amendment (Resolution No. R5-2005-0005) that meets the requirements of a TMDL for the 303(d) listing for Organic Enrichment/Low Dissolved Oxygen impairment in the DWSC.

a. The Basin Plan identified the dissolved oxygen water quality objectives in the San Joaquin River (Stockton DWSC). These objectives are 6.0 mg/l between Turner Cut and Stockton (1 September through 30 November); and 5.0 mg/l in all other Delta waters.

b. The low dissolved oxygen impairment in the DWSC is caused by the following three main contributing factors:

i. Loads of oxygen demanding substances from upstream sources that react by numerous chemical, biological, and physical mechanisms to remove dissolved oxygen from the water column in the DWSC;

ii. Geometry of the DWSC that impacts various mechanisms that add or remove dissolved oxygen from the water column, such that net oxygen demand exerted in the DWSC is increased; and

iii. Reduced flow through the DWSC that impacts various mechanisms that add or remove dissolved oxygen from the water column, such that net oxygen demand exerted.

c. Entities responsible for point and non-point sources of oxygen demanding substances and their precursors within the TMDL source area are required to perform oxygen demand and precursor studies by December 2008. These studies may be conducted by individual responsible entities or in collaboration with other entities. These studies must identify and quantify:

i. sources of oxygen demanding substances and their precursors in the dissolved oxygen TMDL source area;

ii. growth or degradation mechanisms of these oxygen demanding substances in transit through the source area to the DWSC; and

iii. the impact of these oxygen demanding substances on dissolved oxygen concentrations in the DWSC under a range of environmental conditions and considering the effects of chemical, biological, and physical mechanisms that add or remove dissolved oxygen from the water column in the DWSC.

d. Within the Basin Plan Amendment, the Central Valley Water Board established the following waste load allocations:

i. Waste Load allocations or oxygen demanding substances and their pre-cursors for all NPDES-permitted discharges are initially set at the corresponding effluent limitations applicable on 28 January 2005.

ii. Waste Load allocations and permit conditions for new or expanded point source discharges in the San Joaquin River Basin upstream of the DWSC, including NPDES and storm water, will be based on the discharger demonstrating that the discharge will have no reasonable potential to cause or contribute to a negative impact on the dissolved oxygen impairment in the DWSC.

e. Alternate measures, as opposed to direct control, of certain contributing factors would be considered by the Central Valley Water Board if the alternate measures adequately address the impact on the dissolved oxygen impairment and do not degrade water quality in any other way.

f. Compliance with the waste load allocations for oxygen demanding substances and their precursors, and development of alternate measures to address non-load related factors will be required by 31 December 2011.

89. The Permittee was issued Waste Discharge Requirements Order R5-2006-0078 for the West Complex Docks 14 and 15 Dredging Project. This Order, which is not incorporated by reference into this Order, requires mitigation measures for dissolved oxygen (DO) in the DWSC.

a. Paragraph 3, Finding Number 62 of Order R5-2006-0078 states; “The mitigation for dissolved oxygen, identified in the EIR, is required by this Order. Consistent with California Code of Regulations, title 14, 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.”

b Provision Number 5 of Order R5-2006-0078 states; “The Discharger shall comply with the Aeration Requirement, Attachment C, which specifies the 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 rates of oxygen is a violation of this Order.”

90. The Delta is impaired because of elevated levels of methylmercury in fish. The Delta is on the Clean Water Act 303(d) list for mercury and the State Board has designated the Delta

as a toxic hot spot under the Bay Protection and Toxic Hot Spot Cleanup Program. Urban runoff from the Stockton Port District contributes total (inorganic) mercury and methylmercury to these mercury-impaired waterbodies.

The Delta Mercury Control Program, Resolution No. R5-2010-0043 (methylmercury TMDL), was adopted by the Central Valley Water Board in April 2010 and is pending subsequent approval by the State Water Resources Control Board, the Office of Administrative Law, and US EPA. US EPA approval of the TMDL is expected in 2011.

The Delta Mercury Control Program will establish methylmercury waste load allocations (grams/year of methylmercury) for the Permittee, with a final compliance date of 2030. The methylmercury TMDL will require the Permittee to implement pollution prevention measures and BMPs to meet the methylmercury waste load allocation. This requirement will be implemented through mercury pollution prevention and reduction strategies contained in the Permit. Annually, the Permittee will report on the results of mercury monitoring and a description of implemented pollution prevention measures and their effectiveness on reducing mercury discharges. In addition, if methylmercury loads are determined to be greater than the Port's WLAs, the Permittee will be required to conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and to develop and evaluate additional BMPs as needed to reduce the mercury and methylmercury discharges to the Delta. The methylmercury control studies are to be completed nine years after the US EPA TMDL approval date.[12] In accordance with the methylmercury TMDL, the Permittee is required to develop, fund, implement and report on an Mercury Exposure Reduction Program (MERP). The objective of the MERP is to reduce mercury exposure of Delta fish consumers most likely affected by mercury. The Permittee may work independently or with other stakeholders on the MERP.

91. Upon approval of the Delta Mercury Control Program by US EPA, the methylmercury waste load allocations for the Permittee, by Delta subregion, is:

    Central Delta 0.39 grams/year, and
    San Joaquin River 0.0036 grams/year.

    The final compliance date for the waste load allocations ("WLAs") is 2030. Compliance with the methylmercury WLAs shall be met as soon as possible, but no later than 2030, unless the Central Valley Water Board modifies the TMDL implementation schedule and Final Compliance Date. The methylmercury studies are to be completed by about 2017.

92. The NPDES permits for urban runoff management agencies (i.e., Permittee) shown to cause or contribute mercury or methylmercury to the Delta will require pollution prevention measures and the implementation of BMPs to minimize total mercury discharges. In addition to controlling mercury loads, BMPs or control measures will include actions to reduce mercury-related risks to human heath and wildlife.

[12] Central Valley Regional Water Quality Control Board, Resolution No. R5-2010-0043, Delta Mercury Control Program, Attachment 1, *Phase I Delta Mercury Control Program Review*, page 9.

Requirements in the permit issued or reissued and applicable for the term of the permit will be based on an updated assessment of pollution prevention measures and BMPs to minimize total (inorganic) mercury discharges to the MEP.

93. Monitoring and Reporting Program Order R5-2004-0136 required the Permittee to perform bioassessment at selected sites upstream and downstream of major discharge points from 2005 through 2009. The purpose of the bioassessment requirement was to assess the biological integrity of receiving waters, detect biological responses to pollution, identify probable causes of impairment not detected by chemical and physical water quality analysis, and provide a more holistic approach to evaluating processes of the waterways for designing effective BMPs. Two and half years of collected data have been fully evaluated and provide a limited assessment of overall biological response. Additional time is needed in order to fully evaluate biological information collected to date so that future monitoring can be adapted to continue assessment of biological integrity of receiving water, while linking more directly with the statewide SWAMP's, long term goal of utilizing bioassessment to develop biocriteria for a variety of eco-regions and land-use dominated areas in California. Further bioassessment monitoring activities will; therefore, not be required under this permit. Monitoring may be required in subsequent permits in compliance with the Department of Water Resources ("DWR") and the Inter-Agency Ecologic Program which are currently monitoring the Delta.

94. The Central Valley Regional Water Board is currently developing a Delta Regional Monitoring Program ("RMP") for the Sacramento-San Joaquin Delta, which will involve collection of data on pollutants and toxicity in water, sediment, and biota of the Delta. In support of the development of this program, all data in support of receiving water monitoring requirements shall be submitted in an editable electronic form. As the RMP develops, the Permittee's participation and support of the RMP may be used to offset the level of receiving water monitoring required by this Order.

95. The Water Code allows the Central Valley Water Board to require dischargers submit technical and monitoring reports where the burden of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. The Central Valley Water Board may require the monitoring and technical reports that are identified as necessary in the Findings above specifically in this Order or in a separate Order under authority of the Water Code.

PUBLIC PROCESS

96. The Central Valley Water Board has notified the Permittee and interested parties of its intent to prescribe waste discharge requirements for this discharge. These parties have been given an opportunity to address the Central Valley Water Board at a public hearing and an opportunity to submit their written views and recommendations to the Central Valley Water Board.

97. The Central Valley Water Board has considered the information in the attached Fact Sheet in developing the Findings of this Order. The attached Fact Sheet is part of this Order.

98. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order R5-2004-0136 is rescinded, and that the Permittee, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions – Storm Water Discharges

1. Discharges from MS4s in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance, as defined in Water Code section 13050, are prohibited.

2. Discharges from MS4s, which cause or contribute to exceedances of applicable receiving water quality standards (designated beneficial uses of the Basin Plan[13] and water quality objectives developed to protect beneficial uses) and water quality objectives for surface water or ground water, are prohibited.

3. Discharges from storm sewers containing pollutants that have not been reduced to the MEP are prohibited. Because activities at the Port are predominantly industrial, this Order defines the MEP discharge standard to be equivalent to BAT and BCT discharge standards that are typically established for industrial storm water discharges.

B. Discharge Prohibitions – Non-Storm Water Discharges

1. The Permittee shall have the legal authority to effectively prohibit all types of non-storm water discharges into its MS4s unless such discharges are either authorized by a separate NPDES permit; or not prohibited in accordance with this Order.

2. The Discharge of material by the Permittee associated with shipping, receiving and storage activities conducted at the Port, such as, but not limited to, sulfur coal, cement, petroleum coke, raw sugar, copper concentrate, and fertilizers, to a surface water is prohibited. The Permittee will not be in violation of this prohibition if it demonstrates that the discharge has not caused or contributed to an exceedance of

[13] Water Code section 13243 provides that a Central Valley Water Board, in a water quality control plan, may specify certain conditions or areas where the discharge of waste, or certain types of waste is not permitted. The discharge prohibitions are applicable to any person, as defined by Water Code section 13050(c), who is a citizen, domiciliary, or political agency or entity of California whose activities in California could affect the quality of waters of the state within the boundaries of the Central Valley Region.

an applicable water quality standard, and that it has applied BMPs that reflect BAT/BCT to minimize or avoid such discharges.

3. Pursuant to 40 C.F.R. section 122.26(d)(2)(iv)(B)(1), the following categories of non-storm water discharges need only be prohibited from entering a MS4 if such categories of discharges are identified by the Permittee as a source of pollutants to waters of the United States:

   a. Diverted stream flows;
   b. Rising ground waters;
   c. Uncontaminated ground water infiltration as defined by 40 C.F.R. section 35.2005(20);
   d. Uncontaminated pumped ground water;
   e. Foundation drains;
   f. Springs;
   g. Water from crawl space pumps;
   h. Footing drains;
   i. Air conditioning condensation;
   j. Flows from riparian habitats and wetlands;
   k. Water line and hydrant flushing;
   l. Landscape irrigation;
   m. Discharges from potable water sources other than water main breaks;
   n. Irrigation water;
   o. Individual residential car washing;
   p. De-chlorinated swimming pool discharges;
   q. Lawn watering; and
   r. Street wash water.

4. When a non-storm water discharge category above is identified as a source of pollutants to waters of the United States, the Permittee shall either:

   a. Prohibit the discharge category from entering its MS4; or

   b. Not prohibit the discharge category and implement, or require the responsible party(ies) to implement, BMPs which will reduce pollutants to the MEP; and

   c. Submit the following information to the Central Valley Water Board as part of the Annual Report:

      i. The non-storm water discharge category listed above that the Permittee elects not to prohibit; and

      ii. The BMPs for each discharge category listed above that the Permittee will implement, or require the responsible party(ies) to implement, to prevent or reduce pollutants to the MEP.

5. Emergency fire fighting flows (i.e., flows necessary for the protection of life or property) do not require immediate implementation of BMPs and are not prohibited. However, the Permittee should coordinate with other agencies to develop a response plan to minimize the impact of fire fighting flows to the environment. BMPs must be implemented to reduce pollutants from non-emergency fire fighting flows (i.e., flows from controlled or practice blazes) identified by the Permittee to be significant sources of pollutants to waters of the State. The response plan and BMPs shall be updated as needed and incorporated into the SWMP.

6. The Permittee shall examine all dry weather monitoring results collected in accordance with the Monitoring and Reporting Program of this Order to identify water quality problems that may be the result of any non-storm water discharge, including any non-prohibited discharge category(ies). Follow-up investigations shall be conducted as necessary to identify and control any non-storm water discharges that are sources of pollutants. Non-prohibited discharges listed above containing pollutants that cannot be reduced to the MEP by the implementation of BMPs shall be prohibited on a categorical or case-by-case basis.

7. Discharge of ‘designated waste’ as defined in Water Code section 13173 that could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state is prohibited. This prohibition includes runoff and leachate from sulfur, coal, petroleum coke, cement, raw sugar, copper concentrate, and fertilizers that have constituents that exceed water quality objectives or affect beneficial uses.

C. Receiving Water Limitations

1. Receiving water limitations are site-specific interpretations of water quality standards from applicable water quality control plans. As such, they are required to be addressed as part of the permit. However, a receiving water condition not in conformance with the limitation is not necessarily a violation of this Order. The Central Valley Water Board may require an investigation to determine cause and culpability prior to asserting a violation has occurred.

   Discharges from MS4s shall not cause the following in receiving waters:

   a. Concentrations of dissolved oxygen to fall below 6.0 mg/l from 1 September through 30 November and 5.0 mg/l the remainder of the year.

   b. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

5. Emergency fire fighting flows (i.e., flows necessary for the protection of life or scums), suspended material, or settleable material that causes or creates a nuisance or adversely affects beneficial uses.

d. Aesthetically undesirable discoloration.

e. Fungi, slimes, or other objectionable growths.

f. The 30-day average for turbidity to increase as follows:

i. Controllable factors shall not cause downstream turbidity to exceed 2 where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs)
ii. More than 1 NTUs where natural turbidity is between 1 and 5 NTUs.
iii. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
iv. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
v. More than 10 percent where natural turbidity is greater than 100 NTUs.

g. The normal ambient pH shall not be depressed below 6.5 nor raised above 8.5.

h. Deposition of material that causes nuisance or adversely affects beneficial uses.

i. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

j. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of Radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

k. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

l. 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.

m. Pathogen/Bacteria concentrations to be present that exceed criteria or threaten public health. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200/100 mL, nor more than ten percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400/100 mL.

n. Violation of any applicable water quality standard for receiving waters adopted by the Central Valley Water Board or the State Water Board pursuant to the CWA and regulations adopted there under.

o. Violation of the methylmercury waste load allocation for the Permittee, by Delta subregion, upon approval of the Delta Mercury Control Program by US EPA and after 2030*. The wasteload allocation is:

Central Delta 0.39 grams/year; and

San Joaquin River 0.0036 grams/year.

*The final compliance date for the WLAs is 2030. Compliance with the methylmercury waste load allocation shall be met as soon as possible, but no later than 2030, unless the Central Valley Water Board modifies the Delta Mercury Control Program implementation schedule and final compliance date.

p. The natural ambient receiving water temperature to increase more than five °F.

q. For diazinon and chlorpyrifos, the Loading Capacity (LC) for the Delta Waterways, WLAs, and LAs for discharges to the Delta Waterways, shall not exceed the sum (S) of one (1) as defined below after 1 December 2011*:

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where:

C_D = diazinon concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.
C_C = chlorpyrifos concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.
WQO_D = acute or chronic diazinon water quality objective in µg/L. [Diazinon: 160 nanograms per liter (ng/L or parts per trillion), one-hour average, not to be exceeded more than once in a three-year period and 100 ng/L, four-day average, not to be exceeded more than once in a three-year period, which apply to Delta Waterways (Basin Plan[14])]
WQO_C = acute or chronic chlorpyrifos water quality objective in µg/L. [Chlorpyrifos: 25 ng/L, one-hour average, not to be exceeded more than once in a three-year period and 15 ng/L, four-day average, not to be exceeded more than once in a three-year period which apply to Delta Waterways (Basin Plan).[15]]

[14] Sacramento-San Joaquin Delta Waterways, Central Valley Regional Water Quality Control Board, *Water Quality Control Plan (Basin Plan), Central Valley Region, Sacramento River and San Joaquin River Basins (Fourth Edition, revised Oct. 2007)* including Appendix 42 –

[15] Amended by Central Valley Water Board Resolution R5-2007-0034 to include the Sacramento and Feather Rivers. Pending U.S. EPA approval.

*The final compliance date for the WLAs is by **1 December 2011** (Basin Plan).

2. The discharge shall not cause or contribute to an exceedance of any applicable water quality standards.

3. The Permittee shall comply with Discharge Prohibition A.2 and Receiving Water Limitations C.1 and C.2 through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the SWMP and other requirements of this Order, including any modifications. The SWMP shall be designed to achieve compliance with the above mentioned Discharge Prohibition and Receiving Water Limitations C.1 and C.2. If exceedance(s) of WQS persist notwithstanding implementation of the SWMP and other requirements of this Order, the Permittee shall assure compliance with Discharge Prohibition A.2 and Receiving Water Limitations C.1 and C.2 by complying with the following procedure:

   a. The Permittee shall prepare Notification of Water Quality Exceedances ("NWQE") pursuant to notification requirements set forth in the Monitoring and Reporting Program of this Order.

   b. The Permittee shall submit a Report of Water Quality Exceedance ("RWQE") annually to the Executive Officer for reporting discharges that cause or contribute to an exceedance of applicable water quality standards. The RWQE shall describe BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants in the Permittee's discharge that are demonstrated to be causing or contributing to the exceedance of WQSs. The RWQE shall be incorporated in the Annual Report. The report shall include proposed revisions to the SWMP and an implementation schedule containing milestones and performance standards for new or improved BMPs, if applicable. The RWQE shall also include a monitoring program and the rationale for new or improved BMPs, including a discussion of expected pollutant reductions and how implementation of additional BMPs will prevent future exceedance of WQSs. The Central Valley Water Board may require modifications to the RWQE.

   c. Within **30 days** following approval of the RWQE by the Executive Officer, the Permittee shall revise the SWMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required.

   d. The Permittee shall implement the revised SWMP and monitoring program in accordance with the approved schedule after Central Valley Water Board approval of the revised SWMP.

   If the Permittee has complied with the procedures set forth above and is implementing the revised SWMP, the Permittee does not have to repeat the same procedure for

continuing or recurring exceedances of the same receiving water limitations unless directed by the Executive Officer to develop additional BMPs.[16]

4. If the Permittee is found to have discharges notwithstanding the prohibitions in Provision A, or discharges causing or contributing to an exceedance of an applicable benchmark value, water quality objective, waste/wasteload allocation, or receiving water limitation in Provision C, the Port will not be determined to be in violation of this Order unless it fails to comply with the requirement to report such discharge (Provision C.3.a.), and revise its BMPs to include additional and more effective BMPs, and to implement the same (Provision C.3.b-d). Further, the Port may demonstrate in its SWMP that the use of particular benchmark values are not appropriate (e.g., aluminum, electrical conductivity) due to local ambient conditions or other environmental studies (e.g., Water Effect Ratios).

D. Provisions

1. Compliance with Discharge Prohibitions and Receiving Water Limitations

As reflected in the findings, the effect of the Port's storm water discharges on receiving water quality is highly variable. For this reason, this Order requires that, within its geographic jurisdiction, the Permittee shall design its storm water program to achieve compliance with water quality standards over time through compliance with the following, which reflects an iterative approach:

a. Comply with the requirements of this Order, the SWMP, any modifications to the SWMP, and directives of the Executive Officer concerning this Order;

b. Facilitate the implementation of the requirements of the SWMP applicable to such Permittee in an efficient and cost-effective manner;

c. Prepare an annual fiscal analysis identifying the expenditures for the storm water management program. This summary shall identify the storm water budget for the following year, using estimated percentages and written explanations where necessary, for the specific categories noted below:

i. Program management (administrative costs)
ii. SWMP Development
   a) Construction Element
   b) Commercial/Industrial Element
   c) Municipal Operations and Facilities Element
      - Maintenance of Structural BMPs and Treatment Control BMPs
   d) Illicit Discharge and Detection Elimination Element
   e) Public Outreach Element
   f) Performance and Effectiveness Evaluations

[16] State Water Resource Control Board Order WQ 99-05, *SWRCB/OCC File A-1041*

iii. Planning and Land Development
iv. Monitoring Program
v. Water Quality Based Programs
vi. Training
vii. Other Services and Expenses

STORM WATER MANAGEMENT PROGRAM

2. The SWMP is required as part of the application pursuant to 40 C.F.R. section 122.26(2)(d)(iv); therefore the SWMP is an integral and enforceable component of the MS4 permit. In addition, a California Superior Court ruled, *"Because the Storm Water Management Plan is incorporated and is deemed an integral part of the Permits…any changes to the Plan are actually changes to the Permits. Because these are changes to the Permits, the notice and comment requirements must be complied with."* (*San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region,* Consolidated Case No. 500527, California Superior Court, 14 November 2003).

3. Upon adoption of this Order, the Permittee shall modify its SWMP to address the requirements of this Order and submit the SWMP by **3 August 2011 (or six (6) months after the adoption date of this Order, whichever is later),** for public review and comment, and Central Valley Water Board approval. New or revised BMPs may be based upon special studies or other activities conducted by the Permittee, literature review, or special studies conducted by other programs or dischargers. The SWMP shall contain the rationale for any new or revised BMPs and may include a discussion of baseline conditions, expected reductions in mass loading, and methods to be used to verify that BMPs have been successfully implemented. The SWMP shall include an implementation schedule containing identifiable milestones, detailed performance standards, and a compliance monitoring and reporting program.

4. The performance standards in the SWMP shall be used as assessment tools to gauge the success of the program in achieving measurable benefits and improving water quality. The Permittee shall incorporate newly developed or updated BMPs and assessment tools/performance standards into applicable annual revisions to the SWMP and adhere to implementation of the new/revised BMPs. The approved SWMP shall serve as the framework for identification, assignment, and implementation of BMPs. The Permittee shall implement, or require implementation of, BMPs in the approved SWMP to ensure that pollutant discharges from its MS4s are prevented or reduced to the MEP. The Permittee shall implement its SWMP, which contains the following components:

a. Program Management
   i. Legal Authority
   ii. Fiscal Analysis

b. Program Effectiveness Assessment and Reporting

c. Program Elements
   i. Construction
   ii. Industrial and Commercial
   iii. Municipal Operations
   iv. Illicit Connections/Illicit Discharges
   v. Public Outreach
   vi. Planning and Land Development (Development Standards)
   vii. Monitoring Program (including Special Studies)
   viii. Water Quality Based Program (Target Pollutant Program)

PROGRAM MANAGEMENT

5. Program management involves ensuring that all elements of the SWMP are implemented on schedule and all requirements of this Order are complied with.

   a. **Annual Work Plan:** The Permittee shall submit an Annual Work Plan by **1 April** of each year. The Annual Work Plan shall provide the SWMP's and the Permittee's proposed activities for the upcoming year beginning 1 July of current year and ending 30 June the following year.

   b. **Annual Report:** The Permittee shall submit an Annual Report by **1 September** of each year. The Annual Report shall document the status of the SWMP and Permittee activities during the previous fiscal year, including the results of a qualitative and quantitative field level assessment of activities implemented by the Dischargers, and the performance of tasks contained in the SWMP. The Annual Report shall include a compilation of deliverables and milestones completed during the previous 12-month period, as described in the SWMP and Annual Work Plan. The Annual Report shall include a program effectiveness assessment and recommended modifications to for each Program Element/Control Measure. Each Annual Report shall build upon the previous year's efforts. In each Annual Report, the Permittee may propose pertinent updates, improvements, or revisions to the SWMP, which shall be complied with under this Order.

   c. **SWMP Implementation:** The Permittee shall continue implementation of their current SWMP until such time that the SWMP has been modified to be consistent with this Order and approved by the Central Valley Water Board. Once approved, the Permittee shall implement the modified SWMP consistent with the schedule specified within this Order. The SWMP, with modifications, revisions, or amendments as may be approved by the Central Valley Water Board, is an enforceable component of this Order.

   d. **SWMP Modification:** The Permittee's SWMP may need to be modified, revised, or amended from time to time to respond to a change in conditions and to incorporate more effective approaches to pollutant control. Provisions of this

Order require review and/or revision of the certain components of the Permittee's SWMP. Proposed SWMP revisions will be part of the annual review process and incorporated in the Annual Report. In addition, the Permittee shall revise their SWMP to comply with regional or watershed-specific requirements, and/or WLAs developed and approved pursuant to the process for the designation and implementation of TMDLs for impaired waterbodies, and/or amendments to the Basin Plan when the amendments become effective. A thirty-day public notice and comment period shall apply to all proposed significant revisions to the SWMP. Significant SWMP revisions shall be brought before the Central Valley Water Board for review and approval. Minor SWMP revisions may be approved by the Executive Officer.

e. **Departmental Coordination.** Identification of all departments within the Permittee's jurisdiction that conduct storm water pollution prevention-related activities and their roles and responsibilities under this Order. The annual report shall include an up-to-date organizational chart specifying these departments and key personnel responsible for issuance of enforcement actions.

6. **Legal Authority**: The Permittee shall review, revise, maintain, and enforce adequate legal authority to control pollutant discharges from their MS4s through ordinance, statute, permit, contract, or similar means. This legal authority must, at a minimum, authorize the Permittee to:

a. Control the contribution of pollutants in discharges of runoff associated with industrial and construction activity to their MS4s. This requirement applies both to industrial and construction sites, which have coverage under the statewide general industrial or construction storm water permits, as well as to those sites that do not require permit coverage.

b. Effectively prohibit identified illegal discharges (e.g., discharges consisting of or resulting from the following: wash water from gas stations, mobile businesses, parking lots, storage areas containing equipment, discharges of pool water containing chlorine or bromine, discharges of sediment, pet waste, vegetation, food related wastes, toxic materials, pesticides, construction debris, etc.).

c. Prohibit and eliminate illicit connections to the MS4s;

d. Prohibit the discharge of spills, dumping, or disposal of materials other than storm water to its MS4s;

e. Use enforcement mechanisms to require compliance with the Permittee's storm water ordinances, permits, contracts, or orders;

f. Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with the Port's ordinances, statutes, permits,

contracts, or similar requirements, including the prohibition on illicit discharges to the MS4s;

g. Require the use of BMPs to prevent or reduce the discharge of pollutants from MS4s to the MEP; and

h. Require that retention ponds and other Treatment Control BMPs be properly operated and maintained to prevent the breeding of vectors.

7. The Permittee shall amend its existing legal authority over as needed, to enforce all the requirements of this Order within **one year** after adoption of the SWMP. The Port's legal authority shall contain implementable and progressive enforcement procedures.

8. The Permittee shall provide to the Executive Officer a statement certified by its chief legal counsel that it has adequate legal authority to implement and enforce each of the requirements contained in 40 C.F.R. section 122.26(d)(2)(i)(A-F) and this Order, including any modifications thereto in effect when the certified statement is provided. This statement shall be included in Permittee's revised SWMP(s), which shall describe the following:

a. Citation of urban runoff related legal authority adopted by the Permittee and the reasons they are enforceable;

b. Enforcement Response Plan ("ERP"): The Permittee shall develop/modify and implement an ERP, which will serve as a reference document for inspection staff to take consistent actions to achieve timely and effective compliance from all public and private construction site owners/operators. The ERP shall include the following:

i. In the event that the Permittee determines, based on a conducted inspection, that a facility operator has failed to control pollution discharges to the storm sewer, the Permittee shall take progressive enforcement action that, at a minimum, shall include follow-up inspections within seven (7) days of the date of the initial inspection.

ii. In the event that the Permittee determines that a facility operator has failed to control sources of pollution discharges to the storm sewer after a follow-up inspection, the Permittee shall appropriately escalate its enforcement action as established through authority in its legal authority.

iii. The Permittee shall maintain records, including inspection reports, warning letters, notices of violation, and other enforcement records, demonstrating a good faith effort to bring facilities into compliance with applicable requirements.

iv. The Permittee shall continue to update and implement its Enforcement Response Plan to establish clear direction and procedures for progressive enforcement based on Port inspections of construction and industrial sites and other compliance activities.

c. Identification of the local administrative and legal procedures available to mandate compliance with urban runoff related requirements and, therefore, with the conditions of this Order;

d. Description of how the Permittee's legal authority is implemented and how enforcement actions under this authority may be appealed; and

e. Description of whether the Port can issue administrative orders and injunctions or if it must go through the court system for enforcement actions.

9. **Fiscal Analysis:** The Permittee shall secure the resources necessary to meet the requirements of this Order and shall prepare an annual fiscal summary as part of the SWMP Annual Report. This summary shall, for each fiscal year covered by this Order, identify the expenditures necessary to accomplish the activities of the SWMP. Such summary shall include a description of the source(s) of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.

PROGRAM ELEMENTS

10. **Construction Program**

a. The objectives of the Construction Program are to:

i. Provide adequate legal authority to control pollutants to the MS4 from construction sites with land disturbance greater than or equal to one acre in size;

ii. Review construction plans and issue grading permits consistent with Permittee requirements;

iii. Develop or designate a set of minimum BMPs and require their implementation to control sediment and pollutants from construction sites to the MS4;

iv. Develop and maintain a tracking system (inventory) of all active construction sites within Permittee's jurisdiction, including the project name, location, and disturbed area of each site;

v. Develop and maintain a tracking system of all active construction sites inspected by the Permittee, including the inspection date, violations observed, enforcement responses, and any re-inspection actions taken in response to violations;

vi. Inspect construction sites to ensure proper BMP implementation and compliance with Permittee requirements and applicable Provisions of this Order;

vii. Implement a progressive enforcement policy, in accordance with the Provisions of Section D.7.b. of this Order, for sites in violation of Permittee requirements and advise the Central Valley Water Board of violations of Construction General Permit requirements;

viii. Provide regular internal and external training on applicable components of the SWMP and related Permits; and

ix. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.

b. The Permittee shall update and continue to implement the Construction Component of its SWMP to reduce pollutants in runoff from construction sites during all construction phases to the MEP. At a minimum the Construction Program shall address the objectives listed above, as well as the following control measures:

- Pollutant Source Identification
- Threat to Water Quality Prioritization
- Reporting of Non-Compliant Sites

c. The Permittee shall continue to implement and enforce a program to control runoff from all construction sites subject to the NPDES General Construction Permit. The program shall ensure the following minimum requirements are effectively implemented at these construction sites:

i. Sediments generated on the project site shall be retained using adequate Source Control BMPs;

ii. Construction-related materials, wastes, trash, spills, or residues shall be retained at the project site to avoid discharge to streets, drainage facilities, receiving waters, or adjacent properties by wind or runoff;

iii. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site;

iv. Erosion from slopes and channels shall be controlled by implementing an effective combination of BMPs, such as but not limited to; inspecting graded areas during rain events; limiting grading during the wet season; planting and maintenance of vegetation on slopes; and covering erosion susceptible slopes.

v. Ensure that prior to the issuance of a grading permit for a construction site the Port receives the required submittal of an erosion and sediment control plan that meets the Permittee's Development Standards Plan requirements. The Permittee shall verify that the Site's Storm Water Pollution Prevention Plan ("SWPPP") contains, at a minimum, the following:

a) If applicable to the site, a certification that a Notice of Intent has been submitted to the State Water Board;

b) A vicinity map showing nearby roadways, the construction site perimeter, and the geographic features and general topography surrounding the site;

c) A site map showing the construction project in detail, including the existing and planned paved areas and buildings; general topography both before and after construction; drainage patterns across the project area; and anticipated storm water discharge locations (i.e., the receiving water, a conduit to receiving water, and/or drain inlets);

d) A description of BMPs to address contractor activities that generate pollutants including, at a minimum, vehicle washing, equipment maintenance, and waste handling (e.g., concrete washout, paint, stucco);

e) A description of the type and location of erosion and sediment control BMPs, including, but not limited to, limited grading during the wet season, and planting and maintenance of vegetation on slopes, to be employed at the site; and

f) The name and telephone number of the qualified person responsible for implementing the SWPPP.

d. If applicable, all environmental permits must be obtained from agencies such as Department of Fish and Game, U.S. Army Corp of Engineers, and the Central Valley Water Board's 401 Water Quality Certification.

e. Inspections

The Permittee shall include the inspection frequency for each construction site to ensure compliance with the Port's DSP as part of their SWMP and shall continue to inspect each site until a notice of termination for coverage under the General Construction Permit is issued by the Central Valley Water Board. The inspections shall be at least once every two weeks during the wet season (i.e., October 1 thru May 31), and once a month during the remaining months (dry season), until construction is terminated.

The Permittee shall inspect these sites for compliance with the SWPPP components described above and as provided in the SWMP. In addition, if the Permittee observes chronic violations (e.g., three or more) at a given construction site, the Permittee shall notify the Central Valley Water Board as described in the SWMP. The Permittee shall use its legal authority to promptly and effectively enforce and to correct any violations observed during inspections.

11. **Industrial/Commercial Program:**

a. The objectives of the Industrial/Commercial Program are to:

i. Provide adequate legal authority to control pollutants from industrial and commercial facilities to the MS4;

ii. Develop and maintain an inventory of industrial and commercial facilities located within the Permittee's jurisdiction;

iii. Prioritize the industrial and commercial facilities within the inventory based on their threat to water quality and develop and maintain an efficient tracking system to record and document required inspection frequencies, observations, violations, and enforcement responses;

iv. Require industrial and commercial facilities select, install, implement, and maintain storm water control measures to the MEP;

v. Conduct inspections of the industrial and commercial facilities that pose a significant threat to water quality. The inspection frequency shall be based on the prioritization of the facility as established in the SWMP. Conduct follow-up inspections to confirm that necessary corrective actions are taken, and, if not, to appropriately escalate its enforcement posture in accordance with the Provisions of Section D.7.b. of this Order;

vi. Implement a progressive enforcement policy to ensure that adequate enforcement is conducted and coordinated with the Central Valley Water Board regarding referrals of potential non-filers and inspection;

vii. Refer significant violations of the Permittee's storm water ordinances and potential General Industrial Permit non-filers to the Central Valley Water Board. Coordinate inspections and enforcement with the Central Valley Water Board. The SWMP shall include a schedule for reporting non-filers and violations.

viii. Provide regular internal and external training on components of the SWMP and related Permits; and

ix. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.

b. The Permittee shall update and continue to implement the Industrial/ Commercial Component of its SWMP to reduce pollutants in runoff from industrial/commercial sites to the MEP. At a minimum, the Industrial/Commercial Program shall address the objectives listed above, as well as the following control measures:

i. Facility Inventory/Tracking
ii. Prioritization and Inspection
iii. Industrial/Commercial Outreach
iv. Enforcement
v. Training
vi. Effectiveness Assessment

c. The Permittee shall require implementation of pollutant reduction and control measures at industrial and commercial facilities, with the objective of effectively prohibiting non-storm water runoff and reducing pollutants in storm water runoff to the MEP. Except as specified in other sections of this Order, pollutant reduction and control measures can be used alone or in combination, and can include Source and Treatment Control BMPs, and operation and maintenance procedures, which can be applied before, during, and/or after pollution generating activities.

d. The Permittee shall manage ship and dock activities as follows:

i. The Permittee shall educate ship operators and implement BMPs to prevent or minimize the discharge of materials associated with shipping, receiving and storage activities at its docks that might cause run-off during rain events.

12. **Municipal Program**

a. The objectives of the Municipal Program are:

i. Implement development standards that require source and treatment control BMPs to reduce pollutants from Permittee-owned construction projects;

ii. Implement pollution prevention BMPs for Port-owned facilities (e.g., corporation yards) and maintain a Facility Pollution Prevention Plan (FPPP) for Port-owned facilities to minimize or eliminate pollutant discharges to the storm drain system, including but not limited to good house keeping practices, material storage control, vehicle leak and spill control, and illicit discharge control;

iii. Implement a standardized protocol for routine and nonroutine storage, usage, and disposal of pesticides, herbicides (including pre-emergents), and fertilizers on Permittee-owned property that:

a) Is consistent with the State Board's guidelines and monitoring requirements for application of aquatic pesticides to surface waters (WQ Order 2001-12 DWQ);

b) Implements requirements and procedures prohibiting application of pesticides or fertilizers immediately before, during, or immediately after a predicted rain event or when water is flowing off the application area

c) Implements requirements and procedures prohibiting application or storage of banned or unregistered pesticides;

d) Requires that staff applying pesticides are licensed by the California Department of Pesticide Regulation, or under the direct supervision of a certified pesticide applicator;

e) Implements procedures to encourage planting of native vegetation and reduces water, fertilizer, and pesticide needs;

f) Requires the storage of fertilizers and pesticides indoors or under cover on paved surfaces or use of secondary containment;

g) Minimizes the use, storage, and handling of hazardous materials to reduce the potential for spills; and

h) Requires the regular inspection of pesticide and fertilizer storage areas.

This includes procedures for identification, outreach, inspection, filling, disposal and application. Specifically, when these services are contracted to vendors, procedures need to be implemented to effectively communicate, and require adherence to, Port-developed protocols;

iv. Consideration and promotion of the use of IPM methods and less toxic alternatives;

v. Update and implement maintenance procedures for catch basins and sumps that include the following:

a) Prioritizing catch basins and sumps for cleaning based on accumulation of waste and presence or absence of BMPs;

b) An inspection and cleaning schedule for removal of accumulated waste (e.g., sediment, trash, debris, and other pollutants) based on prioritization effort. At a minimum, cleaning of prioritized catch basins and sumps shall occur prior to the rainy season;

c) Record keeping of cleaning and overall quantity of waste removed;

d) Proper disposal of waste removed pursuant to applicable laws; and

e) Measures to eliminate waste discharges during storm sewer maintenance and cleaning activities.

vi. Continue to implement BMPs for storm drain maintenance that include:

a) A program to visually monitor Permittee-owned open channels and associated drainage structures for debris at least annually before the wet weather season (October 1); clean as needed based on visual inspections; and identify and prioritize problem areas of illicit discharge for additional inspections;

b) A review of current maintenance activities to ensure that appropriate storm water BMPs are being used to protect water quality;

c) Minimize the discharge of pollutants during storm sewer maintenance and clean outs

d) Proper disposal of material removed; and

e) Record keeping for cleaning and maintenance of open channels and associated drainage structures.

vii. Ensure that catch basin inlets are properly stenciled, are permanently imprinted, or have legible curb markers to discourage illicit discharges

into the storm drain system. The Permittee shall continue to promote the 24-hour hotline number;

viii. Update and implement guidelines for operating and maintaining retention basins. These guidelines shall consider, at a minimum, the following: (1) inspection frequency; (2) maintenance frequency for removal of accumulated sediment and debris; and (3) maintenance and stabilization of basin side slopes to prevent erosion and incorporation of additional sediment into outflow. Additionally, the Port must document the required inspections, annually during the dry season and monthly during the wet season, in accordance with its stated procedures and notify the Central Valley Water Board within two weeks if evidence of berm seepage is discovered;

ix. Continue to implement and update BMPs for streets and road maintenance that at a minimum include:

a) Conduct appropriate street sweeping frequencies for streets, material handling and storage areas, and docks within its jurisdiction. Develop a plan and tracking system that includes routes, frequencies, and quantity of material removed;

b) The Permittee shall ensure that wash water from street sweeping and street sweeper rinse out is not discharged to the storm sewer;

c) The Permittee shall review and revise its maintenance practices to include the following:

i) Sawcutting wastes shall be recovered and disposed of properly and that in no case shall waste be left on a roadway or allowed to enter the storm sewer;

ii) Concrete and other street and road maintenance materials and wastes shall be managed to prevent discharge to the storm sewer; and

iii) Concrete truck and chute washout shall only occur in designated areas; concrete rinse shall not be discharged to the storm sewer, open ditches, or streets.

x. Clean and inspect Permittee-owned parking facilities to minimize the build-up and discharge of pollutants to the storm drain system;

xi. Provide annual training for its employees in targeted positions (whose interactions, jobs, and activities may affect storm water quality) regarding the requirements of the SWMP and to (1) promote a clear understanding of the potential for maintenance activities to pollute storm water

(2) identify and select appropriate BMPs; and

xii. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.

b. The Permittee shall update and continue to implement a Municipal Program in its SWMP to effectively prohibit non-storm water discharges and prevent or reduce pollutants in runoff from all municipal land use areas, facilities, and activities to the MEP. At a minimum, the Municipal Program shall address the objectives listed above, as well as the following control measures:

i. Sanitary Sewer Overflow and Spill Response;
ii. New Development and Construction Requirements for Municipal Capital Improvement Projects;
iii. Pollution Prevention at Permittee Facilities;
iv. Landscape and Pest Management;
v. Storm Drain, Catch Basin, and Sump System Maintenance;
vi. Street Cleaning and Maintenance;
vii. Parking Facilities Maintenance;
viii. Detention Basin Construction and Maintenance;
ix. Public Industrial Activities Management;
x. Emergency Procedures;
xi. Treatment Feasibility Study;
xii. Non-emergency Fire Fighting Flows;
xiii. Training; and
xiv. Effectiveness Assessment.

13. **Illicit/Illegal Discharge Detection and Elimination Program**

a. The objectives of the Illicit Discharge Detection and Elimination Program are to:

i. Provide adequate legal authority to control and/or prohibit pollutants from being discharged to the municipal storm drain system;

ii. Proactively detect illicit discharges and illegal connections through a variety of mechanisms including, but not limited to, public reporting, dry weather field screening monitoring (including closed/eliminated outfall discharge points), and field crew inspections;

iii. Upon identification of an illegal connection, investigate and eliminate the connection through a variety of mechanisms including, but not limited to, permitting or plugging the connection;

iv. Upon identification of an illicit discharge, investigate the discharge and conduct the following actions to mitigate the impacts of the discharge:

a) Response to Illegal Connections

i) Upon discovery or upon receiving a report of a suspected illicit connection, the Permittee shall initiate an investigation within two days to determine the source of the connection, the nature and volume of discharge through the connection, and the responsible party for the connection.

ii) Upon confirmation of illicit nature of a storm drain connection, the Permittee shall ensure termination of the connection within 5 business days, using enforcement authority as needed.

b) Response to Illicit Discharges

i) For illicit discharges that are known or suspected to contain hazardous substances (as defined by California law), the Permittee shall respond, within one business day of discovery or a report of a suspected illicit discharge, with activities to abate, contain, and clean up such illicit discharges. For illicit discharges not know or suspected to contain hazardous substances, the Permittee shall respond within two days of discovery or report, and at a minimum require the identified responsible party(ies) to immediately cease such discharges.

ii) The Permittee shall perform follow up investigations of illicit discharges and take enforcement action as appropriate.

v. The Permittee shall conduct annual wet weather discharge inspection of all closed/eliminated outfall discharge points and other potential discharge points to determine if these points have any discharges. This visual inspection can be performed during any qualifying wet weather event while discharges are still occurring and must be conducted while outfalls and/or discharge points are completely above the tidally influenced water line. If the discharge outfall pipe is not visible or able to be safely accessed, the observation may be made at the last drainage inlet prior to the outfall pipe if feasible.

vi. Maintain a database for recording the information related to illicit discharges and illegal connections and, to the extent possible, use mapping to assist in evaluating the data; and

vii. Conduct an assessment as a part of the annual reporting process; determine the effectiveness of the Program Element and identify any necessary modifications.

b. The Permittee shall update and continue to implement an Illicit Discharge Detection and Elimination Program component of the SWMP to actively seek and eliminate illicit discharges and connections. At a minimum, the Illicit Discharge Detection and Elimination Component shall address the objectives listed above and include the following control measures:

i. Detection of Illicit Discharges and Illegal Connections;
ii. Illegal Connection Identification and Elimination;
iii. Investigation/Inspection and Follow-up Procedures;
iv. Enforcement of Local Codes and Ordinances;
v. Training; and
vi. Effectiveness Assessment.

14. **Public Education and Public Outreach (Collectively Public Outreach Program):**

a. The Permittee shall implement a Public Outreach Program using available media as appropriate to (1) measurably increase the knowledge of target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. To accomplish these goals, the following objectives are addressed:

i. Encourage the public to actively participate in the implementation of the storm water program as well as the various outreach events;

ii. Promote the use of the 24-hour public reporting hotline;

iii. Implement a public education strategy for the overall program that includes developing and distributing materials, conducting a mixed media campaign, participating in community outreach events, and conducting public opinion surveys to gauge the level of awareness and behavior change within a community and/or target audience;

iv. Implement a business outreach program; and

v. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.

b. The Permittee shall update and continue to implement the Public Outreach Component of its SWMP to educate the public and encourage their participation in the implementation of the SWMP. At a minimum, the Public Outreach Program shall address the objectives listed above and include the following control measures:

i. Public Participation;
ii. Hotline;
iii. Public Outreach Implementation;
iv. Business Outreach; and
v. Effectiveness Assessment.

PLANNING AND LAND DEVELOPMENT PROGRAM

15. The objectives of the Planning and Land Development Program are as follows:

a. Provide a framework and a process to incorporate water quality and watershed protection principles into the Permittee's policies and planning procedures early in the development process;

b. Develop a program that covers initial project planning through design, construction and completion, including requirements for long-term maintenance of post-construction storm water controls;

c. Ensure storm water quality components have been addressed during the entitlement and CEQA process and verified as completed during the development plan process;

d. Ensure that selected post-construction storm water controls will remain effective upon project completion by requiring a maintenance agreement and transfer for all priority development projects;

e. Develop a formal system to track the deployment, ownership, and maintenance history of BMPs to ensure adequate long-term maintenance of the BMPs;

f. Ensure that storm water quality controls are properly selected and required during the development plan review process to minimize storm water quality impacts to the MEP;

g. Ensure that appropriate selected post-construction storm water controls are chosen on the basis of project- and site-specific conditions and land use characteristics, as well as receiving water impacts;

h. Provide a comprehensive review of development plans to ensure that storm water quality controls are properly selected to minimize storm water quality impacts;

i. Provide regular internal training on applicable components of the SWMP; and

j. As a part of the annual reporting process, conduct an assessment (at least annually) to determine the effectiveness of the Program Element and identify any necessary modifications.

16. The Permittee shall update and continue to implement the Planning and Land Development Component of its SWMP to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. At a minimum, the Planning and Land Development Program shall address the objectives listed above and include the following control measures:

    a. Incorporation of Water Quality Protection Principles into Permittee Procedures and Policies;
    b. New/Revised Development Standards;
    c. Plan Review Sign-Off;
    d. Maintenance Agreement and Transfer;
    e. Training; and
    f. Effectiveness Assessment.

17. **Water Quality Planning and Design Principles** - In order to reduce pollutants and runoff flows from new development and redevelopment the Permittee shall address the following concepts:

    a. The Permittee shall incorporate water quality and watershed protection principles into planning procedures and policies such as the Development Standards and requirements to direct land-use decisions and require implementation of consistent water quality protection measures for all development projects. These principles and policies shall be designed to protect natural waterbodies, reduce impervious land coverage (such as through low impact development design), slow runoff to prevent hydromodification of waterways, and maximize opportunities for infiltration of rainwater into soil. Such water quality and watershed protection principles and policies shall consider, at a minimum, the following:

        i. Minimize the amount of impervious surfaces and directly connected impervious surfaces in areas of new development and redevelopment and where feasible to maximize on-site infiltration of runoff (low impact development practices).

        ii. Implement pollution prevention methods supplemented by pollutant source controls and treatment. Use strategies that control the sources of pollutants or constituents (i.e., the point where water initially meets the ground) to minimize the transport of urban runoff and pollutants offsite and into MS4s.

iii. Preserve, and where feasible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.

iv. Minimize disturbances of natural waterbodies and natural drainage systems caused by development within the legal and geographic jurisdiction of the Permittee, including roads, highways, and bridges.

v. Use methods available to estimate increases in pollutant loads in runoff flows resulting from projected future development. Require incorporation of structural and non-structural BMPs to mitigate the projected increases in pollutant loads.

vi. Identify and avoid development in areas that are particularly susceptible to erosion and sediment loss; and establish and implement development standards that protects areas from erosion and sediment loss.

vii. Coordinate with local traffic management programs to reduce pollutants associated with vehicles, including during construction, and increased traffic resulting from development.

viii. Implement source and/or treatment controls to protect downstream receiving water quality from increased pollutant loads in runoff flows from new development and significant redevelopment.

ix. Control the post-development peak storm water run-off discharge rates and velocities to prevent or reduce downstream erosion, and to protect stream habitat (hydromodification concepts).

b. **Low Impact Development Strategies:** Priority new development and redevelopment projects shall integrate Low Impact Development (LID) principles, where feasible, early in the project planning and design process. LID is a storm water management and land development strategy that emphasizes conservation and the use of existing natural site features integrated with engineered, small-scale hydrologic controls to more closely reflect predevelopment hydrologic functions in residential, commercial, and industrial settings. When developing a LID Program, the Permittee shall consider and incorporate all appropriate and applicable LID components and measures that have been successfully and effectively implemented in other municipal areas. Other programs to consider include, but are not limited to, US EPA's guidance document entitled, "Managing Wet Weather with Green Infrastructure, Action Strategy, 2008" and LID program elements specified in the permits or Storm Water Management Plans of other MS4s throughout the state.

c. The Permittee shall amend, revise or adopt quantitative and qualitative development standards (including the Port's ordinances, statutes, permits, contracts, or other similar requirements) to require the consideration of LID strategies at priority new development and redevelopment projects by **3 February 2012 (or no later than one (1) year after the adoption of the SWMP, whichever is later)**, which shall include the revised DSP. The DSP shall be amended to ensure storm water quality and watershed principles, as listed in 16.a. and b. above, are integrated.

18. The DSP shall be amended, as part of the SWMP, to ensure that the storm water quality and watershed principles, as listed above in 16.a. and b., are integrated.

a. **Application of the Development Standards:** The Permittee shall ensure that all new development and significant redevelopment projects falling under the priority project categories listed below meet the Development Standards. The revised Development Standards shall apply to all priority projects or phases of priority projects at the date of adoption of the DSP that do not have one of the following: approval of a tentative map within two years prior to approval of the revised DSP, approval of improvement plans by the City or County engineers, or a permit for development or construction. Any extensions of a tentative map after adoption of revised Development Standards shall ensure compliance with the revised DSP. In addition, those infill projects that require only a Use Permit from the City or County that apply to the Priority Development Project Categories are subject to the requirements under the Development Standards.

b. **Priority Development Project Categories** – **Development Standards** requirements shall apply to all new developments of greater than 100,000 square feet or parking lots of more than 5,000 square feet or 25 or more parking spaces potentially exposed to runoff, and significant redevelopment projects.

Significant redevelopment is defined as the creation or addition of at least 5,000 square feet of impervious surfaces on an already developed site. Significant redevelopment includes, but is not limited to, expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. Where significant redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to the Development Standards, the numeric sizing criteria discussed below applies only to the addition, and not the entire development.

Projects, including all data necessary to determine whether the projects qualify as Priority Development Projects. The required data shall include, but are not limited to, project description at build-out, land use, impervious land area for development (square feet), Standard Industrial Classification (SIC) code, number of parking spaces, and all other data relating to the Priority Development Project Categories. As a component of the list, the Port must make an initial Priority Development Project Category determination regarding the need for DSP conditioning and supporting rationale. Furthermore, the Port must ensure that all current and future Priority Development Projects are reviewed for DSP applicability and that subsequent project plans are adequately conditioned and implemented for compliance with the Development Standards.

c. **BMP Requirements** – The DSP shall include a comprehensive list of recommended pollution prevention, source control, and structural treatment control BMPs, as well as recommended design details of each BMP. The DSP shall require all new development and significant redevelopment projects falling under the above priority project categories or locations to implement **a combination of BMPs** selected from the recommended BMP list, including at a minimum: (1) source control BMPs and (2) structural treatment control BMPs. Where LID BMPs are not feasible at the project site, more traditional, but equally effective control measures shall be implemented. This restriction applies only to sites that are known to have soil and/or groundwater contamination.[17]

d. **Numeric Sizing Criteria** – The DSP shall include a section that clearly describes the requirements for structural treatment BMPs to be implemented for all priority development projects. In addition to meeting the BMP requirements listed above, all structural treatment BMPs for a single priority development project shall be sized collectively to comply with either the volume-based or flow-based numeric sizing criteria:

i. Volume-based BMPs shall be designed to mitigate (infiltrate or treat) either:

a) The volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the local historical rainfall record; or

b) The volume of runoff produced by the 85th percentile 24-hour rainfall event, determined as the maximized capture storm water

[17] Recent studies by the Los Angeles and San Gabriel Watershed Council of Storm Water Recharge has shown that there is no statistically significant degradation of groundwater quality from the infiltration of storm water-borne constituents.

Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or

c) The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in *California Storm Water Best Management Practices Handbook – Industrial/Commercial*, (1993); or

d) A Permittee justified design storm volume that is determined as part of the Development Standard development and approved by the Executive Officer. The treatment of this volume shall achieve approximately the same reduction in pollutant loads achieved by treatment of the 85th percentile 24-hour runoff event.

ii. Flow-based BMPs shall be designed to mitigate (infiltrate or treat) either:

a) The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or

b) The maximum flow rate of runoff, as determined from local historical rainfall records, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

e. **Equivalent Numeric Sizing Criteria -** The Permittee may develop any equivalent numeric sizing criteria or performance-based standard for post-construction structural treatment BMPs as part of the DSP. The DSP shall clearly define and justify these equivalent numeric sizing criteria or performance-based standards for post construction structural treatment BMPs. Such equivalent sizing criteria may be authorized for use in place of the above criteria. In the absence of development and subsequent authorization of such equivalent numeric sizing criteria, the above numeric sizing criteria requirement shall be implemented.

f. **Pollutants and Activities of Concern** – As part of the DSP, the Permittee shall identify pollutants and/or activities of concern for each new development or significant redevelopment project. The Permittee shall identify the pollutants of concern by considering the following (1) receiving water quality, including pollutants for which receiving waters are listed as impaired under CWA Section 303(d); (2) land use type of the development project and pollutants associated with that land use type; (3) pollutants expected to be present on site at concentrations that pose potential water

quality concerns; (4) activities expected to be on the site; and (5) changes in flow rates and volumes resulting from the development project and sensitivity of receiving waters to changes in flow rates and volumes.

g. **Restaurants Less than 5,000 Square Feet** - New development and significant redevelopment restaurant projects where the land area development is less than 5,000 square feet shall meet all DSP standards except for structural treatment BMP and numeric sizing criteria requirement above.

h. **Infiltration and Groundwater Protection** – To protect groundwater quality, the Permittee shall consider the type of development and resulting storm water discharge and, if appropriate, apply restrictions to the use of BMPs, which are designed to primarily function as infiltration devices (such as infiltration trenches and infiltration basins).

To protect groundwater resources any infiltration BMPs shall meet the following minimum requirements:

a) Use of infiltration treatment BMPs shall not cause or contribute to an exceedance of groundwater water quality objectives.
b) Source control and pollution prevention control BMPs shall be implemented in conjunction with infiltration BMPs to protect groundwater quality. The need for sedimentation or filtration should be evaluated prior to infiltration.
c) Infiltration treatment BMPs shall not cause a nuisance or pollution, as defined in Water Code Section 13050.

i. **Regional Storm Water Mitigation** – A Permittee may apply to the Central Valley Water Board for approval of a regional or sub-regional storm water mitigation program to substitute in part or wholly for its Development Standard requirements including LID strategies. The Central Valley Water Board may consider for approval such a program if its implementation will:

a) Result in equivalent or improved storm water quality;
b) Protect stream habitat;
c) Promote cooperative problem solving by diverse interests;
d) Be fiscally sustainable and has secure funding; and
e) Be completed in five years including the construction and start-up of treatment facilities.

19. The Permittee submitted to the Central Valley Water Board the DSP, dated November 2005 (revised May 2007). This work plan met the requirements for Development Standards under the NPDES area-wide MS4 permit, Order R5-2004-

0136 (NPDES No. CAS0084077) and was approved by Central Valley Water Board 17 November 2005.

20. **Entitlement Process**

a. Private Development: The City of Stockton is the responsible party for the issuance of grading, building, demolition, or similar "construction" permits for the Permittee's development. Each new development shall comply with any and all requirements outlined in the City-issued permits. Additionally, the Permittee shall incorporate into its entitlement process standard procedures in order to consider potential storm water quality impacts early in the planning process of any new development and redevelopment project. These standard procedures are contained in the Permittee's DSP which is required under this Order. As required by the DSP, the Permittee shall clearly demonstrate the developer and Permittee considered storm water quality site issues before the facilities/projects are final designed. In order to demonstrate involvement with and in the conceptual storm water quality design, the Permittee will implement project plan check program. The project plan check program will require review by Permittee's organization to ensure that all appropriate storm water designs/controls are included in the project design, are implemented during project construction, and are in place at completion of the project, as required by the DSP.

b. Permittee Development: The process for planning and reviewing Permittee-owned new development and redevelopment projects differs from the private sector development process. However, Permittee-owned new development and redevelopment projects must consider potential storm water quality impacts early in the planning process. The Permittee shall develop an equivalent approach to ensure development process procedures consider storm water quality site issues before completion of the facilities/projects final design.

21. **Maintenance Agreement and Transfer –** The Permittee shall require that all developments subject to Development Standards and site specific plan requirements provide verification of maintenance provisions for Structural Treatment Control BMPs, including but not limited to legal agreements, covenants, California Environmental Quality Act (CEQA) mitigation requirements, and or conditional use permits. Verification at a minimum shall include:

a. The developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either

b. A signed statement from the public entity assuming responsibility for Structural Treatment Control BMP maintenance and that it meets all local

agency design standards; or

c. Written conditions, which require the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year; or

d. Any other legally enforceable agreement that assigns responsibility for the maintenance of Structural Treatment Control BMPs.

22. **Coordination, Enforcement and Tracking**

a. The Permittee shall provide for the review of proposed project plan and require measures to ensure that all applicable development will be in compliance with their storm water statutes, ordinances, permits, contracts and all other similar requirements.

b. The Permittee shall develop a process by which Development Standards will be implemented. The process shall identify at what point in the planning process development projects will be required to meet Development Standards. The process shall also include identification of the roles and responsibilities of various departments in implementing the Development Standards, as well as any other measures necessary for the implementation of Development Standards.

c. The Permittee shall develop and implement **by 3 July 2011 (or 6 months after adoption of this Order, whichever is later)** the following:

i. A GIS or other electronic system for tracking projects that have been conditioned for post-construction treatment control BMPs. The electronic system, at a minimum, should contain the following information:
   a) Municipal Project ID;
   b) State WDID No;
   c) Project Acreage;
   d) BMP Type and Description;
   e) BMP Location (coordinates);
   f) Date of Acceptance;
   g) Date of O&M Certification;
   h) Inspection Date and Summary;
   i) Corrective Action; and
   j) Date Certificate of Occupancy Issued.

23. **Infiltration and Groundwater Protection –** To protect groundwater quality, the Permittee shall consider the type of development and resulting storm water discharge and, if appropriate, apply restrictions to the use of non-structural BMPs which are designed to primarily function as infiltration devices (such as infiltration trenches and infiltration basins).

24. **Targeted Employee Training**

The Permittee shall periodically train its employees in targeted positions (whose jobs or activities are engaged in development planning) to ensure they can adequately implement the Planning and Land Development Program requirements.

25. **Technical Guidance and Information for Developers**

By **3 February 2012 (or 1 year after the SWMP is approved, whichever is later),** the Permittee shall submit a revised/functionally updated DSP consistent with the requirements of this Order as a component of the SWMP. Prior to approval of the updated DSP, the existing DSP shall be used by the Permittee.

MONITORING PROGRAM

WATER QUALITY BASED CONTROL PROGRAMS

26. The Permittee shall continue to implement the Target Pollutant identification and prioritization processes described in the SWMP. These processes shall continue to include as key evaluation criteria, pollutants that cause or contribute to exceedances of water quality standards and known or probable impairment of beneficial uses. The Permittee shall develop and/or implement target pollutant control programs for pollutants that have been identified as top priorities. Target pollutant control programs shall be incorporated into the Permittee's SWMP and revised in accordance with the directives of this Order. At a minimum, if the following pollutants are determined to be found in the Permittee's storm water discharges pursuant to the assessments for each pollutant(s) required below, these control programs shall include the following:

a. **Pesticides Toxicity Control Program:** To address pesticide impairment of urban streams by pesticide-related toxicity, the Permittee shall continue to implement and update a pesticide toxicity control program (**Pesticide Plan**) that addresses their own use of pesticides, including diazinon and chlorpyrifos, and to the extent authorized by law, the use of such pesticides by other sources within their jurisdictions.

The ban of the sale, with use of existing stock, of diazinon and chlorpyrifos for most residential and commercial uses should significantly reduce or eliminate, over time, the contribution of the Permittee's discharge to the non-attainment of water quality standards in the 303(d) listed waters and the maintenance of the diazinon and chlorpyrifos hot spots. The continued monitoring of diazinon and chlorpyrifos is needed to determine the significance of the Permittee's contribution to diazinon and chlorpyrifos levels in 303(d) listed waters and the toxic hot spots. Monitoring is also needed to determine the effectiveness of the phase-out of urban uses of diazinon and chlorpyrifos; to assess whether the hot spots are maintained; and to assess whether water quality objectives are met.

This provision implements requirements of the TMDL for chlorpyrifos and diazinon to be met in urban runoff into the Sacramento-San Joaquin Delta Waterways (Delta Waterways)[18] including Appendix 42 of the Basin Plan. Appendix 42 (including Figures 1 and 2) lists the Delta Waterways to which the site-specific diazinon and chlorpyrifos water quality objectives, the allocations, implementation and monitoring provisions apply.

The goal of the Pesticide Plan is to protect water quality by implementing Integrated Pest Management (IPM) and associated BMPs to minimize or eliminate pesticides in storm water. IPM shall be integrated into the Permittee's municipal operations and promoted through the public outreach program. Pesticides of concern include: organophosphorous pesticides (chlorpyrifos, diazinon, and malathion); pyrethroids (bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and tralomethrin); carbamates (e.g., carbaryl); and fipronil.

i. For municipal operations the Permittee shall complete the following efforts:

   a) Implement pesticide, herbicide, and fertilizer application protocol at Port maintained sites, landscaped medians, and golf courses;

   b) Implement IPM program;

   c) Maintain and expand internal inventory on pesticide use;

   d) Implement Landscaping Standards promoting native plants and IPM; and

   e) Provide routine training for Port employees on IPM practices and the Permittee's IPM Policy who, within the scope of their duties, apply or use pesticides that threaten water quality.

ii. For public outreach the Permittee shall complete the following efforts:

   a) Coordinate with the County Agriculture Commission and Extension Service and environmental organizations, and interested stakeholders and provide targeted information concerning proper pesticide use and disposal, potential adverse impacts on water quality, and alternative, less toxic methods of pest prevention and control, including IPM;

[18] The Delta Waterways include only those reaches that are located within the "Legal" Delta, as defined in Section 12220 of the California Water Code.

b) The Permittee shall support, enhance, and help publicize programs for proper pesticide disposal; and

c) Continue mechanisms to encourage the consideration of pest-resistant landscaping and design features in the design, landscaping, and/or environmental reviews of proposed development projects. Education programs shall target individuals responsible for these reviews and focus on factors affecting water quality impairment.

iii. **By 1 September 2011,** the Permittee shall complete an assessment to determine if urban storm water is causing or contributing to an exceedance of water quality standards and/or the TMDL allocation for diazinon and chlorpyrifos. If urban storm water is causing or contributing to an exceedance, then the Permittee shall determine the relative contribution of urban storm water runoff to diazinon and chlorpyrifos levels in waters within its jurisdiction that are identified as a toxic hot spot (per § 13394 of Porter-Cologne) or are on the CWA 303(d) list. The assessment shall be reported in the Annual Report.

iv. The Permittee, either separately or through organizations such as CASQA, shall continue to support and participate in efforts to influence pesticide regulatory activities by state and federal agencies, especially DPR, the Structural Pest Control Board, and the ISEPA Office of Pesticides, with respect to promoting adequate evaluation and regulation of pesticide uses that have significant potential to impact receiving waters through discharges of urban runoff.

v. The Permittee shall coordinate with the Pesticide Plan component of the SWMP, to the extent that pesticides in sediments are identified as causing or contributing to receiving water impacts. The Permittee shall incorporate a Sediment Monitoring program in the Pesticide Plan as part of the SWMP. The Sediment Monitoring program shall include information as specified in the Monitoring and Reporting Program of this Order.

vi. The Permittee shall work with the pesticide control stakeholders and other municipal storm water management agencies to assess which pesticide products and uses pose less risk to surface water quality. When applicable, such products will be incorporated into the Pesticide Plan. The Permittee shall also work with the Central Valley Water Board and other agencies in implementing the TMDL for pesticides in impaired urban waterways and other tributaries to the Stockton Deep Water Channel and the San Joaquin River.

b. **Low Dissolved Oxygen Program:** To address the dissolved oxygen impairment and toxic hot spot, the Permittee shall implement a **Low Dissolved Oxygen Plan,** relative to their urban runoff, for the following waterways:

- Stockton Deep Water Ship Channel
- San Joaquin River

To the extent that urban run-off from the Port are determined to contain oxygen-demanding substances pursuant to Provision D.26.b.iv, below, the Permittee's SWMP shall include the following:

i. The Permittee shall identify areas and/or activities, which contribute, via urban runoff, to low DO concentrations in the receiving water, such as unsewered areas within the Port, natural vegetation, animal and bird waste, discharges of food wastes, fertilizer and other oxygen demanding substances and their precursors, or direct discharges from existing collection systems due to sanitary sewer system overflow or blockage.

ii. The Permittee shall include a discussion of their proposed actions for complying with the DO TMDL in respect to completing the oxygen demand and precursor studies and complying with the conditional prohibition of discharge. The Permittee shall also discuss their proposed actions for participating in the San Joaquin River DO TMDL Technical Working Group (TWG).

iii. The Permittee shall coordinate with other aerator operators and agencies/organizations performing dissolved oxygen monitoring programs in the Delta waters in the sharing of information, monitoring results, studies, and resources.

iv. **By 1 September 2011**, the Permittee shall complete an assessment to determine if urban storm water is causing or contributing to an exceedance of water quality standards and/or the TMDL allocation for DO. If urban storm water is causing or contributing to an exceedance, then the Permittee shall determine the relative contribution of urban storm water runoff to low DO levels in waters within its jurisdiction that are identified on the CWA section 303(d) list, and compile a report that identifies the BMP approach that will be implemented to address areas and/or activities as identified above (Provision 28.b.i). This shall include an assessment of current BMPs, identification of new or modified BMPs, and an implementation schedule. This assessment and BMP report (if applicable) shall be included in the Annual Report.

v. The Permittee shall incorporate a Dissolved Oxygen Monitoring program in the Low Dissolved Oxygen Plan as part of the SWMP. The Dissolved Oxygen Monitoring program shall include a sampling and analysis plan. A summary and analysis of the data collected and its relationship to the dissolved oxygen levels in the DWSC shall be completed and included as a component of the **2016 Annual Report.**

c. **Total Mercury and Methylmercury Control Program**: To address the mercury impairment and the toxic hot spot of the Delta, the Permittee shall monitor for mercury and methylmercury to determine their waste load in urban runoff on an annual basis. If it is determined that the Port is a contributor of mercury and/or methylmercury, the Port shall develop and implement a mercury pollution and prevention program as a component of the SWMP. The goal of the control program is to reduce methylmercury exposure to humans and wildlife in the Delta.

If it is determined that the Port is a contributor of mercury and/or methylmercury, the Permittee shall implement the following control programs for mercury and methylmercury. The Permittee shall perform the control measures and provide reporting on those control measures according to the provisions below. The purpose of this provision is to implement the urban runoff requirements of the methylmercury TMDL and reduce inorganic mercury loads to make substantial progress toward achieving the urban runoff methylmercury load allocation established for the TMDL. Upon approval of the Delta Mercury Control Program by US EPA, the methylmercury WLAs for the Permittee by Delta subregion are: Central Delta 0.39 grams/year and San Joaquin River 0.0036 grams/year. The final compliance date for the WLAs is 2030, unless the Central Valley Water Board modifies the Delta Mercury Control Program implementation schedule and Final Compliance Date.

i. **Mercury Collection and Recycling Implemented throughout the Stockton Port District**

a) **Task Description –** The Permittee shall promote, facilitate, and/or participate in collection and recycling of mercury containing devices and equipment at the consumer level (e.g., thermometers, thermostats, switches, bulbs). The Permittees shall promote and facilitate the collection, recycling and/or diversion of mercury-containing waste products (e.g. gauges, batteries, fluorescent and other lamps, switches, relays and sensors) from the waste stream from industrial and commercial entities (e.g. auto dismantlers). Compliance with this task may be achieved by participation in a County or City program.

b) **Implementation Level** – The Permittee shall evaluate reduction of mercury from controllable sources in storm water, including the identification of mercury-containing products used by the Permittees in their municipal operations (D.12) (e.g., corporate yards, office buildings). The Permittees shall also describe alternative ways to establish or improve proper handling, disposal and recycling.

c) **Reporting** – The Permittee shall report on these efforts in their Annual Report, including an estimate of the mass of mercury collected and diverted.

ii. **Public Education, Outreach and Participation Program**

a) **Task Description** – The Permittee shall add mercury pollution prevention messages to the Public Outreach and Education Element (D.14) designed to reach commercial and industrial users or sources of mercury-containing products or emissions. The Permittees shall include messages about mercury contamination in fish and Department of Public Health (DPH) fish consumption advisories.

b) **Implementation Level** – For public outreach (e.g., auto dismantlers) and municipal operations, the Permittee's mercury control programs (e.g., enhance business hazardous waste collection program) shall coordinate with the countywide universal waste (U-Waste) management strategy in compliance with the Department of Toxic Substances Control (DTSC) Universal Waste Rule (Reference Number: R-97-08, Effective Date: 02/08/02). Participate with other organizations to develop programs to reduce or eliminate sources or mercury within the Permittee's urbanized area. The Permittee may coordinate with publicly owned treatment works and other agencies to develop cooperative plans and programs.

c) **Reporting** – Describe in the Annual Reports specific coordination efforts related to mercury pollution prevention control (e.g., fluorescent lamp collections, public outreach, sustainable funding mechanisms, and U-waste tonnage tracking). Permittees shall summarize activities completed and document any measureable awareness and behavior changes resulting from outreach. Evaluate the effectiveness of the mercury control programs; provide recommendations for amending Permittees' mercury source control programs; and amend the mercury control programs in accordance with those recommendations.

iii. **Monitor Methylmercury**

a) **Task Description** – The Permittee individually, or in cooperation with other local entities, shall monitor methylmercury in runoff discharges. The objective of the monitoring is to investigate Port drainages to obtain seasonal information and to assess the magnitude and spatial/temporal patterns of methylmercury concentrations.

b) **Implementation Level** – The Permittee shall analyze aqueous grab samples already being collected for total mercury analysis for methylmercury as specified in the Monitoring and Reporting Program of this Order.

c) **Reporting** – The Permittee shall report monitoring results annually beginning with their 2012 Annual Report. Annual methylmercury loads in the MS4 service area may be calculated by the following method or by an alternate method approved by the Executive Officer. The annual methylmercury load may be calculated by the sum of wet weather and dry weather methylmercury loads. To estimate wet weather methylmercury loads, the average of wet weather methylmercury concentrations observed at the MS4s compliance locations may be multiplied by the wet weather runoff volume estimated for the MS4 service area. To estimate dry weather methylmercury loads, the average of dry weather methylmercury concentrations observed at the MS4s compliance locations may be multiplied by the estimated dry weather runoff volume for the MS4 service area. This method is consistent with that used to develop load estimates in the methylmercury TMDL.

iv. **Methylmercury Control Studies**

a) **Task Description** – After US EPA approves the Delta Mercury Control Program, the Permittee shall conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and shall develop and evaluate additional BMPs as needed to reduce mercury and methylmercury discharges to the Delta and meet methylmercury WLAs. The studies shall quantify methylmercury loads and loads reduced through source control, treatment and other management measures.

b) **Implementation Level** – The Permittee shall demonstrate progress toward completing the methylmercury control studies by submitting a Control Study Workplan by nine months after the US

EPA Delta methylmercury TMDL approval date. The control study workplan shall include details for:

i) Control Studies can be developed through a stakeholder group approach or other collaborative mechanism, or by the Permittee. The Permittee is not required to do individual studies if the Permittee joins a collaborative study group(s).

ii) Control Studies shall be implemented through Control Study Workplan(s). The Control Study Workplan(s) shall provide detailed descriptions of how methylmercury control methods will be identified, developed, and monitored, and how effectiveness, costs, potential environmental effects, and overall feasibility will be evaluated for the control methods.

iii) The Control Study Workplan(s) shall include details for organizing, planning, developing, prioritizing, and implementing the Control Studies.

iv) The Control Studies shall evaluate existing control methods and, as needed, additional control methods that could be implemented to achieve methylmercury WLAs. The Control Studies shall evaluate the feasibility of reducing sources more than the minimum amount needed to achieve allocations.

v) The Control Studies also may include an evaluation of innovative actions, watershed approaches, offset projects, and other short and long-term actions that result in reducing inorganic (total) mercury and methylmercury to address the accumulation of methylmercury in fish tissue and to reduce methylmercury exposure.

vi) The Permittee may evaluate the effectiveness of using inorganic (total) mercury controls to control methylmercury discharges.

vii) The Permittee may conduct characterization studies to inform and prioritize the Control Studies. Characterization studies may include, but not be limited to, evaluations of methylmercury and total mercury concentrations and loads in source waters, receiving waters, and discharges, to determine which discharges act as net sources of methylmercury, and which land uses result in the greatest net methylmercury production and loss.

c) **Reporting** – The Permittee shall submit reports in compliance with the following schedule to the Central Valley Water Board:

i) By [four years after the US EPA Delta methylmercury TMDL approval date], the Permittee shall submit a Control Studies progress report.

ii) By [seven years after US EPA Delta methylmercury TMDL approval date], the Permittee shall complete the Control Studies and submit a Final Report that present the results and descriptions of methylmercury control options, their preferred methylmercury controls, and proposed methylmercury management plan(s) (including implementation schedules), for achieving methylmercury allocations. Final reports for Control Studies shall include a description of methylmercury and/or inorganic (total) mercury management practices identified in/during the studies; an evaluation of the effectiveness, costs, potential environmental effects, and overall feasibility of the control actions. Final reports shall also include proposed implementation plans and schedules to comply with methylmercury allocations as soon as possible.

iii) If the Control Study results indicate that achieving a given methylmercury allocation is infeasible, then the Permittees shall provide detailed information in the Final Report on why full compliance is not achievable, what methylmercury load reduction is achievable, and an implementation plan and schedule to achieve partial compliance.

v. **Methylmercury Exposure Reduction Program**

a) **Task Description** – After US EPA approves the Delta methylmercury TMDL, the Permittee shall complete an Exposure Reduction Strategy as part of the Mercury Exposure Reduction Program (MERP) if it is determined the Port is a contributor based on their annually estimated loads. The MERP is not intended to replace timely reduction of mercury and methylmercury loads to Delta waters. Activities will require collaboration with public health agencies to develop an MERP strategy; submission of an Exposure Reduction Workplan; implementation of the workplan and reporting. If the Permittee does not participate in the collaborative effort to develop the MERP, the Permittee shall develop and implement an individual MERP.

i) By one year after US EPA Delta methylmercury TMDL approval date, the Permittee shall work with Central Valley Water Board staff, State and local public health agencies and other stakeholders, including community-based organizations, tribes, and Delta fish consumers, to complete an Exposure Reduction Strategy. The purposes of the Strategy will be to recommend to the Executive Officer how the Permittee will be responsible for participating in an MERP, to set performance measures, and to propose a collaborative process for developing, funding and implementing the program.

b) **Implementation Level** – The Permittee shall develop, submit, and implement an Exposure Reduction Workplan in accordance with the following:

i) The Permittee shall, either individually or collectively, or based on the Exposure Reduction Strategy, submit an Exposure Reduction Workplan for Executive Officer approval by two years after US EPA Delta methylmercury TMDL approval date. The MERP Workplan must include elements directed toward:

1) Developing and implementing community-driven activities to reduce mercury exposure;

2) Raising awareness of fish contamination issues among people and communities most likely affected by mercury in Delta-caught fish such as subsistence fishers and their families;

3) Integrating community-based organizations that serve Delta fish consumers, tribes, and public health agencies in the design and implementation of an exposure reduction program;

4) Identifying resources, as needed, for community-based organizations and tribes to participate in the Program;

5) Utilizing and expanding upon existing programs and materials or activities in place to reduce mercury, and as needed, create new materials or activities; and

6) Developing measures for program effectiveness.

ii) The Workplan shall address the Exposure Reduction Program objective, elements, and Permittee's coordination with other stakeholders. The Permittee shall integrate or, at a minimum, provide good-faith opportunities for integration of community-based organizations, tribes, and consumers of Delta fish into planning, decision making, and implementation of exposure reduction activities. The Permittees shall implement the Workplan by six months after Executive Officer approval of Workplan.

c) **Reporting** – Within three years after Workplan implementation begins, and every three years thereafter, the Permittee, shall submit a progress report to the Executive Officer. The Permittee shall participate in the Exposure Reduction Program until they comply with all requirements related to their methylmercury allocation.

27. In support of the Water Quality Based Programs, the Permittee shall develop and implement the storm water monitoring program as defined in the Monitoring and Reporting Program R5-2011-0005-01, which is part of this Order, and any revisions thereto adopted by the Central Valley Water Board.

The storm water monitoring program consists of the following elements:

- Baseline Monitoring
  - Urban Discharge Monitoring
  - Receiving Water Monitoring
  - Water Column Toxicity Monitoring
  - Dry Weather Field screening

- Water Quality Based Programs
  - Pesticide Plan
  - Low Dissolved Oxygen Plan
  - Total Mercury and Methylmercury Control Program

- Special Studies
  - Retention Basin Studies
  - BMP Effectiveness Studies

The Permittee shall implement the Water Quality Monitoring program pursuant to the MRP and SWMP. Ultimately, the results of the MRP will be used to identify necessary BMPs, refine the SWMP to reduce pollutant loads, and protect and enhance the beneficial uses of the Port's receiving waters.

For the constituents that the data submitted as required in Section II.B. of the MRP show that the values for the pollutants of concern have been consistently below the

WQOs, TMDL WLAs, and benchmark levels (if available or applicable) and after the Central Valley Water Board's staff evaluation and concurrence, the Permittee shall discontinue to monitor those constituents, except once during the annual comprehensive confirmation monitoring event in the year 3 of the permit.

28. **Program Effectiveness Assessment**

    a. The Permittee shall describe their approach to program effectiveness assessment in their SWMP and report the results of the assessment in their Annual Reports. The assessment shall identify the direct and indirect measurements that the Permittee used to track the effectiveness of their programs as well as the outcome levels at which the assessment is occurring consistent with this Order. Direct and indirect measurements shall include, but not limited to, conformance with established Performance Standards, quantitative monitoring to assess the effectiveness of Control Measures, measurements or estimates of pollutant load reductions or increases from identified sources, raising awareness of the public, and/or detailed accounting/documentation of SWMP accomplishments.

    b. The Permittee shall track the long-term progress of their SWMP towards achieving improvements in receiving water quality.

    c. The Permittee shall use the information gained from the program effectiveness assessment to improve their SWMP and identify new BMPs, or modification of existing BMPs. This information shall be reported within the Annual Reports consistent with this Order.

    d. Long Term Effectiveness Assessment (LTEA) Strategy: The Permittee shall develop a LTEA strategy, which shall build on the results of the Permittee's Annual Reports and the initial program effectiveness assessments. The LTEA shall be submitted to the Central Valley Water Board **no later than 180 days prior to the permit expiration date** (by 29 August 2015) and shall identify how the Permittee will conduct a more comprehensive effectiveness assessment of the storm water program as part of the SWMP. The strategy will address the storm water program in terms of achieving both programmatic goals (raising awareness, changing behavior) and environmental goals (reducing pollutant discharges, improving environmental conditions).

ADDITIONAL REQUIREMENTS

29. **Monitoring and Reporting Program**: The Permittee shall comply with Monitoring and Reporting Program R5-2011-0005-01, which is part of this Order, and any revisions thereto approved by the Board. Because the Permittee operates facilities which discharge waste subject to this Order, this Monitoring and Reporting Program is necessary to ensure compliance with these waste discharge requirements.

30. This Order may be modified, or alternatively, revoked or reissued, prior to the expiration date as follows: a) to address significant changed conditions identified in the technical reports required by the Central Valley Water Board which were unknown at the time of the issuance of this Order; b) to incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plan approved by the State Water Board; or c) to comply with any applicable requirements, guidelines, or regulations issued or approved under Section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirement of the CWA when applicable.

31. The Permittee shall comply with all applicable storm water-related items of the "Standard Provisions and Monitoring Requirements for Waste Discharge Requirements (NPDES)," dated February 2004 (Attachment F), which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions."

32. This Order expires on **1 February 2016**.[19] The Permittee must file a Report of Waste Discharge (RWD) in accordance with Title 23, California Code of Regulations, not later than 180 days prior to the expiration date as application for re-issuance of waste discharge requirements. US EPA 40 C.F.R. Part 122 *Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems* states the fourth year annual report may be used as the RWD reapplication package. The reapplication package must identify any proposed changes or improvement to the SWMP, an assessment of the effectiveness of the program, and monitoring activities for the upcoming five year term of the permit, if those proposed changes have not already been submitted pursuant to 40 C.F.R. 122.42 (c).

I, PAMELA C. CREEDON, 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, Central Valley Region, on **3 February 2011** and amended on 10 October 2014 by Order R5-2014-0130.

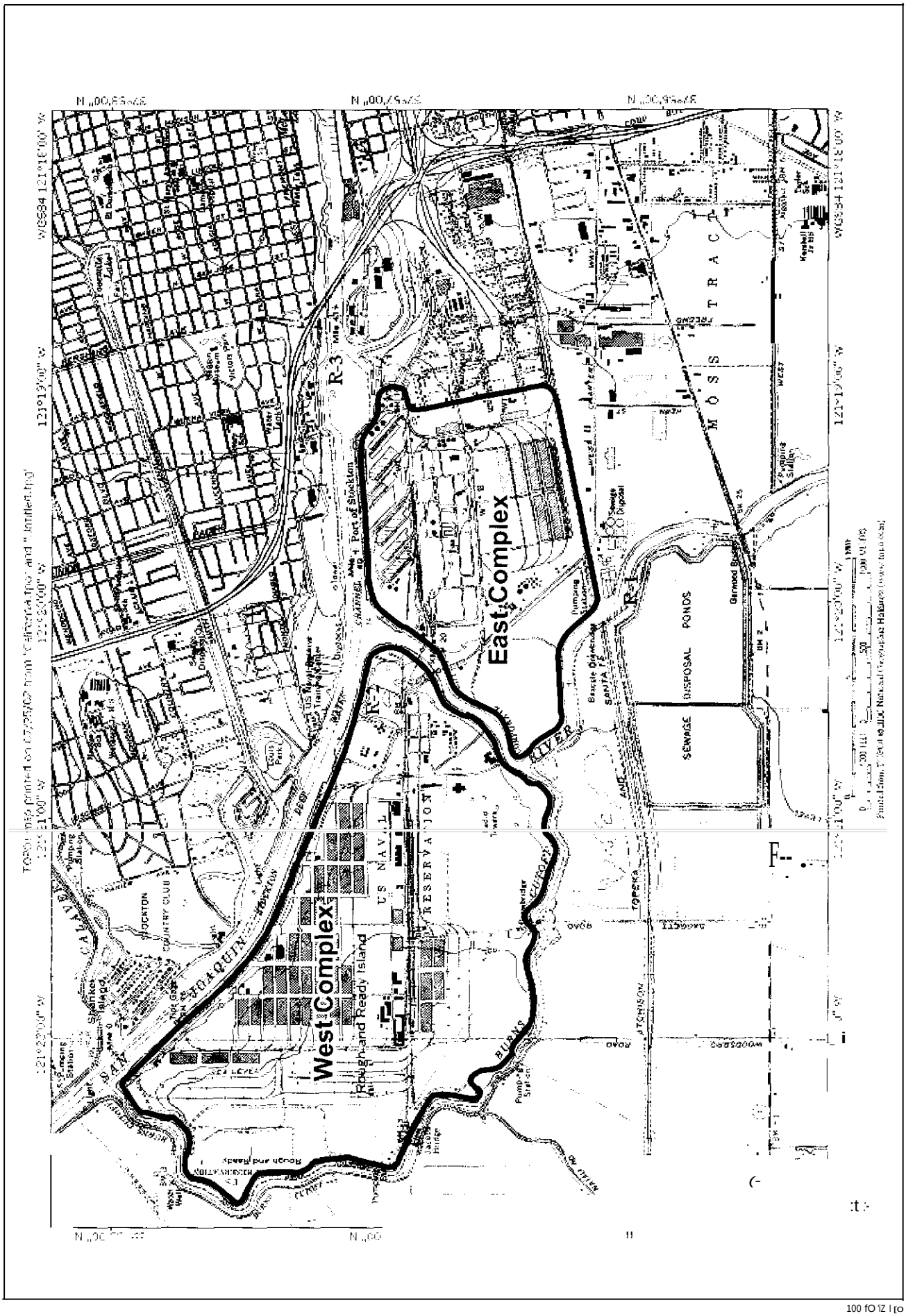
Original signed by Pamela C. Creedon

_____

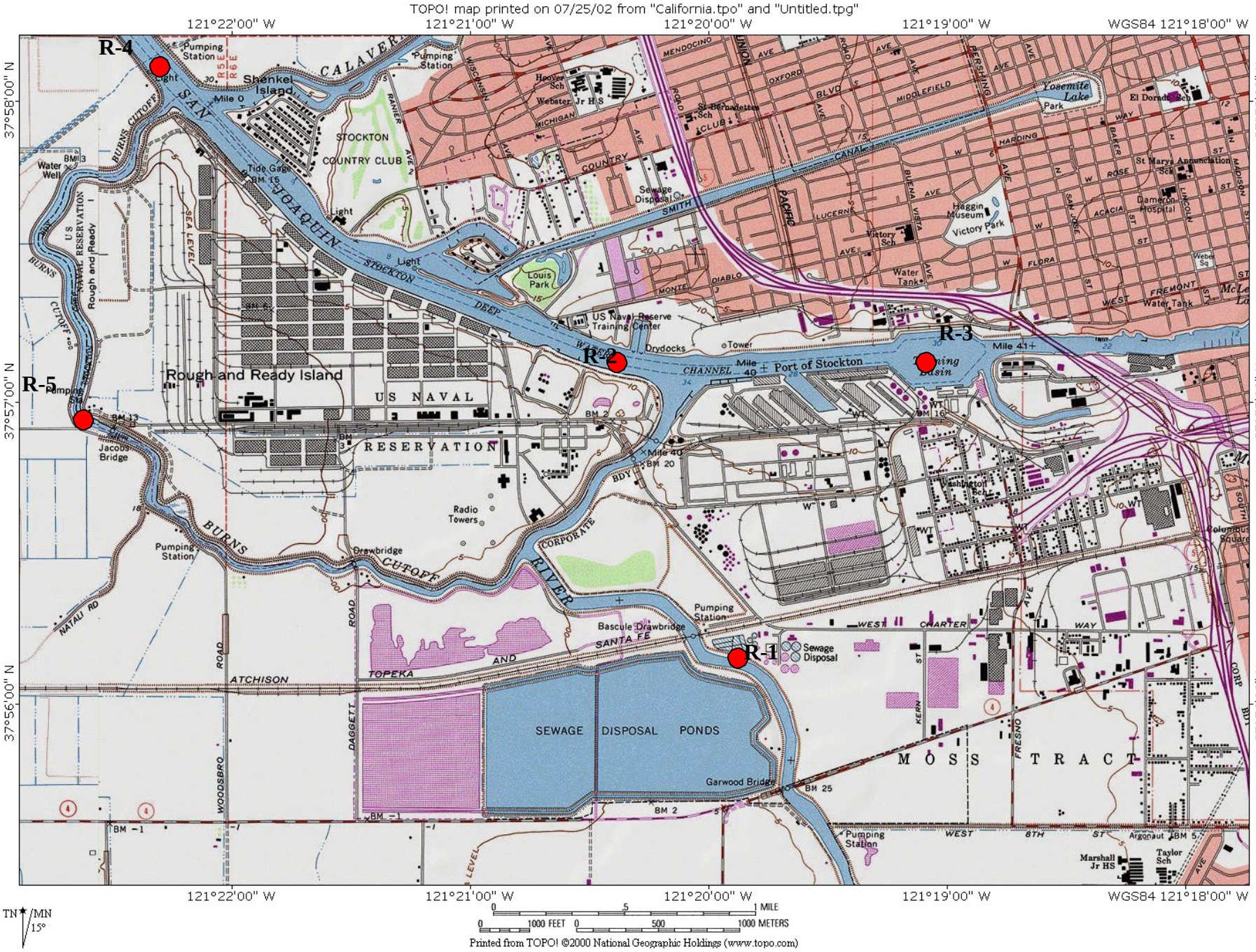
PAMELA C. CREEDON, Executive Officer

[19] The effective date is calculated 50 days after the adoption date of 3 February 2011 in accordance with the SWRCB/USEPA's Memorandum of Agreement.

ATTACHMENT A



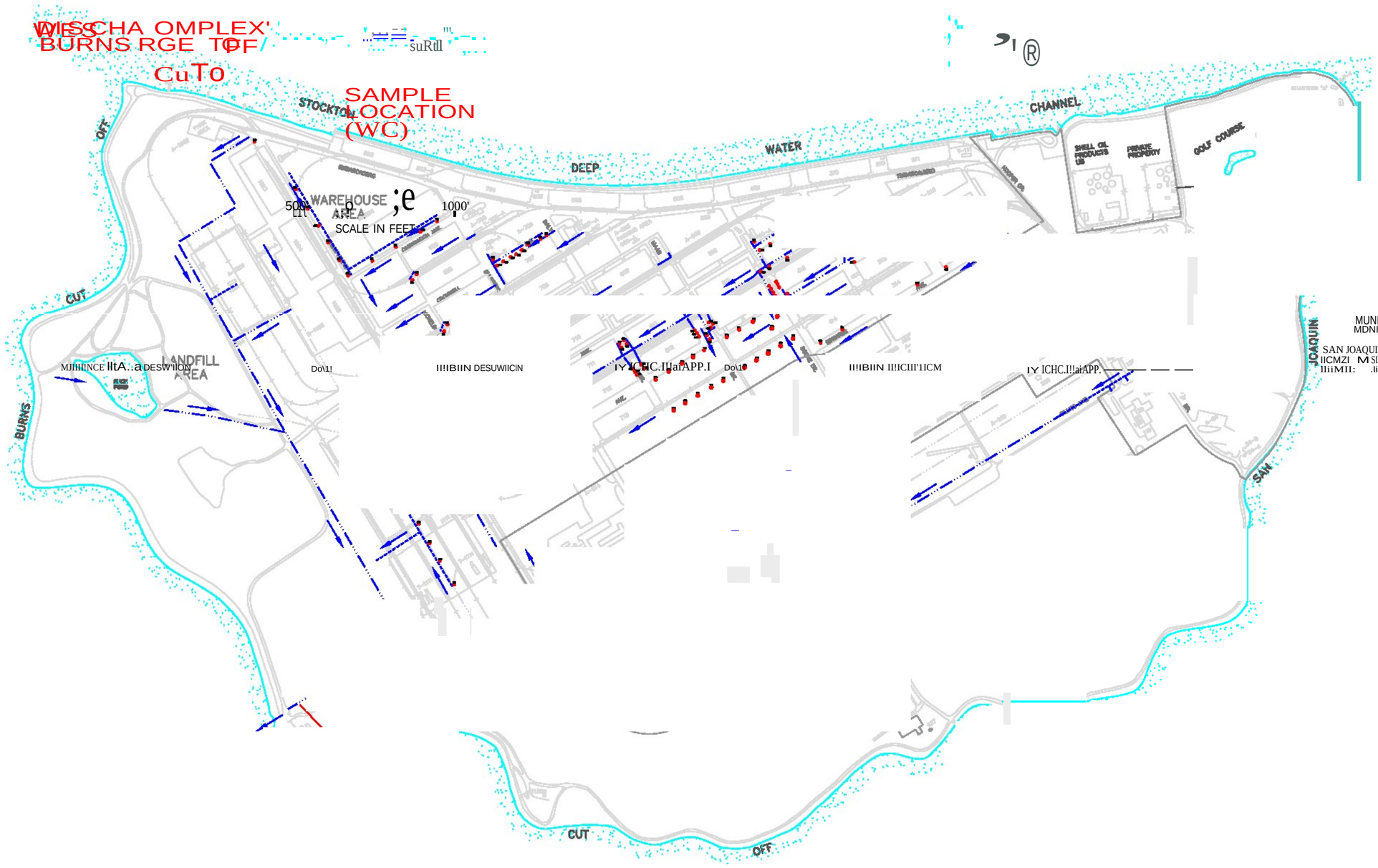
PORT OF STOCKTON RECEIVING WATER
SAMPLE LOCATIONS Figure 3



ATTACHMENT B

AGRICULn.JRAL
AREA
LEGEND:
OPDI CHANNEL – CCliB.E UNED
OPDI CHANNEL – GRA'tS. FILLm
OPEN Q!ANNEL – UNUNED
UNDERGROUND DRAINAGE PI'E
D1ll CAlat !UIP
WATER FLOW DIIEC1ICIN

ATTACHMENT C



PORT OF STOCKTON

WEST COMPLEX
MUNICIPAL SEPARATE STORM SEWER SYSTEM
MONITORING STATIONS AND DRAINAGE AREAS
2201 W.WASHINGTON STREET
SAN JOAQUIN CA

FIGURE 2

LOCATION CODE

0

ATTACHMENT D

DWG. NUMBER	REFERENCE DRAWING DESCRIPTION	REV. NO.	DATE	REVISION DESCRIPTION	BY	CHK.	ENGR.	APP.	REV. NO.	DATE	REVISION DESCRIPTION	BY	CHK.	ENGR.	APP.

PORT OF STOCKTON

EAST COMPLEX
MUNICIPAL SEPARATE STORM SEWER SYSTEM
2201 W. WASHINGTON STREET
SAN JOAQUIN COUNTY, CA
STOCKTON

FIGURE 1

REV. 0

ATTACHMENT E

DEFINITIONS ORDER
R5-2011-0005-01
STOCKTON PORT DISTRICT
FACILITY-WIDE STORM WATER DISCHARGES FROM
MUNICIPAL SEPARATE STORM SEWER SYSTEM AND
NON-STORM WATER DISCHARGES FROM THE PORT OF STOCKTON
SAN JOAQUIN COUNTY

Adverse Impact means a detrimental effect upon water quality or beneficial uses caused by a discharge or loading of a pollutant or pollutants.

Anti-degradation Policy means the *Statement of Policy with Respect to Maintaining High Quality Water in California* (State Board Resolution No. 68-16), which protects surface and groundwaters from degradation. In particular, this policy protects water bodies where existing quality is higher than that necessary for the protection of beneficial uses including the protection of fish and wildlife propagation and recreation on and in the water.

Applicable Standards and Limitations means all state, interstate, and federal standards and limitations to which a discharge or a related activity is subject under the Clean Water Act (CWA), including effluent limitations, water quality standards, standards of performance, toxic effluent standards or prohibitions, best management practices, and pretreatment standards under CWA Sections 301, 302, 303, 304, 306, 307, 308, 403 and 404.

Authorized Discharge means any discharge that is authorized pursuant to a National Pollutant Discharge Elimination System (NPDES) permit or meets the conditions set forth in this Order.

Automotive Service Facilities means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 5511, 7532-7534, or 7536-7539.

Basin Plan means the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins*. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin.

Beneficial Uses means the existing or potential uses of receiving waters in the permit area as designated by the Regional Board in the Basin Plan.

Best Management Practices (BMPs) means methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and nonstructural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technologies (BCT) or Best Practicable Treatment or Control (BPTC): is a requirement of State Water Resources Control Board Resolution 68-16 - “Statement of

Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to assure that, "(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained." Pollution is defined in CWC Section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

Commercial Development means any development on private land that is not heavy industrial or residential. The category includes, but is not limited to hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, car wash facilities, mini-malls, business complexes, shopping malls, hotels, office buildings, public warehouses, and light industrial complexes.

Commercial/Industrial Facility means any facility involved and/or used in the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facilities includes, but is not limited to, any facility defined by the SIC Code. Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

Construction means clearing, grading, excavating, etc. that results in soil disturbance. Construction includes structure teardown. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility; emergency construction activities required to immediately protect public health and safety; interior remodeling with no outside exposure of construction material or construction waste to storm water; mechanical permit work; or sign permit work.

Control means to minimize, reduce, eliminate, or prohibit by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

Dechlorinated/Debrominated Swimming Pool Discharge means swimming pool discharges which have no measurable chlorine or bromine and do not contain any detergents, wastes, or additional chemicals not typically found in swimming pool water. The term does not include swimming pool filter backwash.

Development means any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Director means the Director of a municipality and Person(s) designated by and under the Director's instruction and supervision.

Discharge means when used without qualification the discharge of a pollutant.

Discharging Directly means outflow from a drainage conveyance system that is composed entirely or predominantly of flows from the subject, property, development, subdivision, or industrial facility, and not commingled with the flows from adjacent lands.

Discharge of a Pollutant means any addition of any pollutant or combination of pollutants to waters of the United States from any point source or, any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. The term discharge includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

Disturbed Area means an area that is altered as a result of clearing, grading, and/or excavation.

Dry weather day means a day with a rain event too small to generate runoff (typically 0.1 inches or less).

Construction Activities Storm Water General Permit (GCP) means the general NPDES permit adopted by the State Board which authorizes the discharge of storm water from construction activities under certain conditions.

Industrial Activities Storm Water General Permit (IGP) means the general NPDES permit adopted by the State Board which authorizes the discharge of storm water from certain industrial activities under certain conditions.

Hydrology is a scientific discipline concerned with the waters of the Earth, including their occurrence, distribution, and circulation via the hydrologic cycle and interactions with living things. It also deals with the chemical and physical properties of water in all its phases.

Hydromodification means the change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. In addition, alteration of stream and river channels, installation of dams and water impoundments, and excessive stream bank and shoreline erosion are also considered hydromodification, due to their disruption of natural watershed hydrologic processes.

Illicit Connection means any man-made conveyance that is connected to the storm drain system without a permit, excluding roof drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

Illicit Discharge means any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term “illicit discharge” includes all non storm-water discharges except discharges pursuant to an NPDES permit, discharges that are identified in **Discharge Prohibitions** of this Order, and discharges authorized by the Regional Board.

Illicit Disposal means any disposal, either intentionally or unintentionally, of materials or wastes that can pollute storm water.

Infiltration means the downward entry of water into the surface of the soil.

Inspection means entry and the conduct of an on-site review of a facility and its operations, at reasonable times, to determine compliance with specific municipal or other legal requirements. The steps involved in performing an inspection, include, but are not limited to:

a. Pre-inspection documentation research.;
b. Request for entry;
c. Interview of facility personnel;
d. Facility walk-through.
e. Visual observation of the condition of facility premises;
f. Examination and copying of records as required;
g. Sample collection if necessary or required;
h. Exit conference to discuss preliminary evaluation; and,
i. Report preparation, and if appropriate, recommendations for coming into compliance.

In the case of restaurants, a Permittee may conduct an inspection from the curbside, provided that such curbside inspection provides the Permittee with adequate information to determine an operator’s compliance with BMPs that must be implemented per requirements of this Order and the SWMP.

Medium Municipal Separate Storm Sewer System (MS4) means all MS4s that serve a population less than 250,000 (1990 Census) as defined in 40 CFR 122.26 (b)(4).

Local SWPPP means the Storm Water Pollution Prevention Plan required by the local agency for a project that disturbs one or more acres of land.

Low Impact Development (LID) – A storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions.

Maximum Extent Practicable (MEP) – The technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that operators of MS4s must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve; typically by treatment or by a combination of source control and treatment control BMPs. MEP generally emphasizes pollution prevention and source control BMPs primarily (as the first line of defense) in combination with treatment methods serving as a backup (additional line of defense). MEP considers economics and is generally, but not necessarily, less stringent than BAT. A definition for MEP is not provided either in the statute or in the regulations. Instead the definition of MEP is dynamic and will be defined by the following process over time: municipalities propose their definition of MEP by way of their storm water management programs (SWMP). The Permittees' total collective and individual activities conducted pursuant to the storm water management programs (SWMP) becomes their proposal for MEP as it applies both to their overall effort, as well as to specific activities (e.g., MEP for street sweeping, or MEP for MS4 maintenance).

In the absence of a proposal acceptable to the Regional Board, the Regional Board defines MEP. In a memo dated February 11, 1993, entitled *"Definition of Maximum Extent Practicable,"* Elizabeth Jennings, Senior Staff Counsel, SWRCB addressed the achievement of the MEP standard as follows:

> "*To achieve the MEP standard, municipalities must employ whatever Best Management Practices (BMPs) are technically feasible (i.e., are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility. Reducing pollutants to the MEP means choosing effective BMPs, and rejecting applicable BMPs only where other effective BMPs will serve the same purpose, or the BMPs would not be technically feasible, or the cost would be prohibitive. In selecting BMPs to achieve the MEP standard, the following factors may be useful to consider:*
>
> *a. Effectiveness: Will the BMPs address a pollutant (or pollutant source) of concern?*
>
> *b. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?*
>
> *c. Public Acceptance: Does the BMP have public support?*
>
> *d. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?*

e. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc?

The final determination regarding whether a municipality has reduced pollutants to the maximum extent practicable can only be made by the Regional or State Water Boards, and not by the municipal discharger. If a municipality reviews a lengthy menu of BMPs and chooses to select only a few of the least expensive, it is likely that MEP has not been met. On the other hand, if a municipal discharger employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit derived, it would have met the standard. Where a choice may be made between two BMPs that should provide generally comparable effectiveness, the discharger may choose the least expensive alternative and exclude the more expensive BMP. However, it would not be acceptable either to reject all BMPs that would address a pollutant source, or to pick a BMP base solely on cost, which would be clearly less effective. In selecting BMPs the municipality must make a serious attempt to comply and practical solutions may not be lightly rejected. In any case, the burden would be on the municipal discharger to show compliance with its permit. After selecting a menu of BMPs, it is the responsibility of the discharger to ensure that all BMPs are implemented."

Method Detection Limit (MDL) means the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Appendix B.

Minimum Level (ML) means the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Municipal Separate Storm Sewer System (MS4) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, alleys, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned by a State, city, county, town or other public body, that is designed or used for collecting or conveying storm water, which is not a combined sewer, and which is not part of a publicly owned treatment works, and which discharges to Waters of the United States.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA §307, 402, 318, and 405.

Natural Drainage Systems means unlined or unimproved (not engineered) creeks, streams, rivers or similar waterways.

New Development means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

Non-Storm Water Discharge means any discharge to a storm drain that is not composed entirely of storm water.

Nuisance means anything that meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.; (3) occurs during, or as a result of, the treatment or disposal of wastes.

Parking Lot means land area or facility for the parking or storage of motor vehicles used for businesses, commerce, industry, or personal use, with a lot size of 5,000 square feet or more of surface area, or with 25 or more parking spaces.

Performance Standard means a narrative or measurable number specifying the minimum acceptable outcome for a pollution control practice.

Permittees means Co-Permittees and any agency named in this Order as being responsible for permit conditions within its jurisdiction. Permittees to this Order include the County of Sacramento, and the Cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova and Sacramento.

Planning Priority Projects means those projects that are required to incorporate appropriate storm water mitigation measures into the design plan for their respective project. These types of projects include:

a. Ten or more unit homes including single family homes, multifamily homes, condominiums, and apartments;
b. A 100,000 or more square feet of impervious surface area industrial/ commercial development (1 acre starting March 2003);
c. Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539);
d. Retail gasoline outlets;
e. Restaurants (SIC 5812);
f. Parking lots 5,000 square feet or more of surface area or with 25 or more parking spaces;
g. Redevelopment projects in subject categories that meet Redevelopment thresholds;
h. Projects located in or directly adjacent to or discharging directly to an ESA, which meet thresholds; and
i. Those projects that require the implementation of a site-specific plan to mitigate post-development storm water for new development not requiring a SUSMP but which may

potentially have adverse impacts on post-development storm water quality, where the following project characteristics exist:

1) Vehicle or equipment fueling areas;
2) Vehicle or equipment maintenance areas, including washing and repair;
3) Commercial or industrial waste handling or storage;
4) Outdoor handling or storage of hazardous materials;
5) Outdoor manufacturing areas;
6) Outdoor food handling or processing;
7) Outdoor animal care, confinement, or slaughter; or
8) Outdoor horticulture activities.

Pollutants means those substances defined in CWA §502(6) (33.U.S.C.§1362(6)), and incorporated by reference into California Water Code §13373.

Potable Water Distribution Systems Releases means sources of flows from drinking water storage, supply and distribution systems including flows from system failures, pressure releases, system maintenance, distribution line testing, fire hydrant flow testing; and flushing and dewatering of pipes, reservoirs, vaults, and minor non-invasive well maintenance activities not involving chemical addition(s). It does not include wastewater discharges from activities that occur at wellheads, such as well construction, well development (i.e., aquifer pumping tests, well purging, etc.), or major well maintenance.

Project means all development, redevelopment, and land disturbing activities. The term is not limited to "Project" as defined under CEQA (Pub. Resources Code §21065).

Receiving Waters means all surface water bodies in the Central Valley Region that are identified in the Basin Plan.

Receiving Water Limitations (RWLs) - Waste discharge requirements issued by the Regional Board typically include both: (1) “Effluent Limitations” (or “Discharge Limitations”) that specify the technology-based or water-quality-based effluent limitations; and (2) “Receiving Water Limitations” that specify the water quality objectives in the Basin Plan as well as any other limitations necessary to attain those objectives. In summary, the “Receiving Water Limitations” provision is the provision used to implement the requirement of CWA section 301(b)(1)(C) that NPDES permits must include any more stringent limitations necessary to meet water quality standards.

Redevelopment means land-disturbing activity that result in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to: the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of a routine maintenance activity; and land disturbing activities related to structural or impervious surfaces. It does not include routine maintenance to maintain original line and

grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Regional Administrator means the Regional Administrator of the Regional Office of the U.S. Environmental Protection Agency (EPA) or the authorized representative of the Regional Administrator.

Restaurant means a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812).

Retail Gasoline Outlet means any facility engaged in selling gasoline and lubricating oils.

Runoff means any runoff including storm water and dry weather flows from a drainage area that reaches a receiving water body or subsurface. During dry weather it is typically comprised of base flow either contaminated with pollutants or uncontaminated, and nuisance flows.

Screening means using proactive methods to identify illicit connections through a continuously narrowing process. The methods may include: performing baseline monitoring of open channels, conducting special investigations using a prioritization approach, analyzing maintenance records for catch basin and storm drain cleaning and operation, and verifying all permitted connections into the storm drains. Special investigation techniques may include: dye testing, visual inspection, smoke testing, flow monitoring, infrared, aerial and thermal photography, and remote control camera operation.

Sidewalk Rinsing means pressure washing of paved pedestrian walkways with average water usage of 0.006 gallon per square foot, with no cleaning agents, and properly disposing of all debris collected.

Significant Natural Area (SNA) means an area defined by the California Department of Fish and Game (DFG), Significant Natural Areas Program, as an area that contains an important example of California's biological diversity. The most current SNA maps, reports, and descriptions can be downloaded from the DFG website at ftp://maphost.dfg.ca.gov/outgoing/whdab/sna/. These areas are identified using the following biological criteria only, irrespective of any administrative or jurisdictional considerations:

a. Areas supporting extremely rare species or habitats;
b. Areas supporting associations or concentrations of rare species or habitats; and
c. Areas exhibiting the best examples of rare species and habitats in the state.

Site means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

Source Control BMP means any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

State Storm Water Pollution Prevention Plan (State SWPPP) means a plan, as required by a State Construction General Permit (CGP), identifying potential pollutant sources and describing the design, placement and implementation of BMPs, to effectively prevent non-stormwater Discharges and reduce Pollutants in Stormwater Discharges during activities covered by the General Permit.

Storm Event means any rain event greater than 0.25 inch in 24 hours except where specifically stated otherwise.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Discharge Associated with Industrial Activity means industrial discharge as defined in 40 CFR 122.26(b)(14)

Storm Water Management Plan (SWMP) is the Permittee's program, which includes all elements and descriptions, collectively developed by the Permittees in accordance with provisions of the NPDES Permit, to comply with applicable federal and state law.

Structural BMP means any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both Treatment Control BMPs and Source Control BMPs.

Development Standards means standards which the Permittees must develop and implement for new development and significant redevelopment projects to control the discharge of storm water pollutants in post-construction storm water.

Total Maximum Daily Load (TMDL) means the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background.

Toxicity Identification Evaluation (TIE) means a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

Toxicity Reduction Evaluation (TRE) means a study conducted in a step-wise process to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity.

Treatment means the application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to,

filtration, gravity settling, media absorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

Treatment Control BMP means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

U.S. EPA Phase I Facilities means facilities in specified industrial categories that are required to obtain an NPDES permit for storm water discharges, as required by 40 CFR 122.26(c). These categories include facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N); manufacturing facilities; oil and gas/mining facilities; hazardous waste treatment, storage, or disposal facilities; landfills, land application sites, and open dumps; recycling facilities; steam electric power generating facilities; transportation facilities sewage of wastewater treatment works; and light manufacturing facilities.

Vehicle Maintenance/Material Storage Facilities/Corporation Yards means any Permittee owned or operated facility or portion thereof that conducts industrial activity, operates equipment, handles materials, and provides services similar to Federal Phase I facilities; performs fleet vehicle service/maintenance on ten or more vehicles per day including repair, maintenance, washing, and fueling; performs maintenance and/or repair of heavy industrial machinery/equipment; and stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Counter-measures (SPCC) plan.

Water Quality Objectives means the limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area. Water quality objectives may be numeric or narrative.

Water Quality Standards means State-adopted and USEPA-approved water quality standards for waterbodies. The standards prescribe the use of the waterbody and establish the water quality criteria that must be met to protect designated uses. Water quality standards also include the federal and state anti-degradation policy.

Waters of the State means any surface water or groundwater, including saline waters, within boundaries of the state.

Waters of the United States means:

a. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

b. All interstate waters, including interstate wetlands;

c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

    1. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    2. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    3. Which are used or could be used for industrial purposes by industries in interstate commerce;

d. All impoundments of waters otherwise defined as waters of the United States under this definition;

e. Tributaries of waters identified in paragraphs (a) through (d) of this definition;

f. The territorial sea; and
g. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraph (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.22(m), which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to man-made bodies of water, which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with U.S. EPA.

Wet Season means the calendar period beginning October 1 through May 31.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2011-0005-01

NPDES NO. CAS0084077

MONITORING AND REPORTING PROGRAM
FOR
STOCKTON PORT DISTRICT
FACILITY-WIDE STORM WATER DISCHARGES FROM
MUNICIPAL SEPARATE STORM SEWER SYSTEM AND
NON-STORM WATER DISCHARGES FROM THE PORT OF STOCKTON
SAN JOAQUIN COUNTY

I. MONITORING AND REPORTING PROGRAM REQUIREMENTS

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code Section 13267. MRP Order R5-2011-0005-01 is necessary to determine compliance with Order R5-2011-0005-01 and to determine the effectiveness of the storm water program.

The Permittee shall not implement any changes to this MRP unless and until the Central Valley Water Board or Executive Officer issues a revised MRP. Attachment A shows the Port of Stockton (Port) jurisdictional limits, which are covered under this Order. To save time and money, and avoid duplication of efforts, the Permittee shall coordinate their monitoring program with local, state, and federal agencies whenever possible.

A. Annual Work Plan: By **1 April 2011**, the Permittee shall submit an Annual Work Plan, in printed and electronic format, that supports the development, implementation, and effectiveness of the approved Storm Water Management Plan (SWMP) and Order R5-2011-0005-01. The Annual Monitoring Plan shall be deemed to be final and enforceable under this Order as of **1 July** of each year unless determined to be unacceptable by the Executive Officer.

B. Annual Report: The Permittee shall submit, in both <u>electronic and paper formats</u> and no later than **1 September** of each year, an Annual Report documenting the progress of the Permittee's implementation of the SWMP and the requirements of Order R5-2011-0005-01. The Annual Report shall cover each fiscal year from **1 July through 30 June**. The status of compliance with permit requirements including implementation dates for all time-specific deadlines should be included for each program area. If permit deadlines are not met, the Permittee shall report the reasons why the deadline was not met and how the requirements shall be met in the future, including projected

implementation dates. A comparison of program implementation results to performance standards established in the SWMP and
Order R5-2011-0005-01 shall be included for each program area. Specific requirements that must be addressed in the Annual Reports are listed below.

1. An Executive Summary discussing the effectiveness of the SWMP to reduce storm water pollution to the maximum extent practicable (MEP) and to achieve compliance with water quality objectives in receiving waters;

2. Summary of activities conducted by the Permittee;

3. Identification of best management practices (BMPs) and a discussion of their effectiveness at reducing urban runoff pollutants and flow, where applicable; and

4. Summary of the monitoring data and an assessment of each component of the MRP. To comply with Provisions C.1 and C.2 of the Order R5-2011-0005-01 the Permittee shall compare receiving water and discharge data with applicable water quality objectives and/or water quality criteria correlated with the beneficial uses of the San Joaquin Delta. The most stringent applicable objective and/or criteria from the Basin Plan, California Toxics Rule (CTR), California Title 22 drinking water maximum contaminant levels (Title 22), the California Department of Fish and
Game pesticide objectives, and/or other applicable public health, agriculture, or national standards shall be used for comparison.

   The Permittee shall also compare wet weather discharge data with the Storm Water Parameter Benchmark Values and effluent limitation guidelines put forth in Part 8 of the 2008 U.S. EPA Multi-Sector Permit (MSGP) and the NPDES No. CAS000001, General Industrial Activity Storm Water Permit (General Industrial Permit). Wet weather discharge constituents not listed in the MSGP Part 8 and the General Industrial Permit shall be compared to the most stringent applicable water quality objectives and/or criteria listed above.

   The Permittee shall additionally provide a summary of monitoring data for the discharges to assess the effectiveness of BMPs in reducing pollutants in the discharge and in assessing whether a discharge may have caused or contributed to an exceedance of water quality objectives in the receiving waters.

   When monitoring data indicates that discharges are causing or contributing to exceedances of applicable water quality objectives, benchmark concentration values, and/or effluent limits the Permittee

shall prepare a Report of Water Quality Exceedance (RWQE), identify potential sources of the problems, and recommend future monitoring and BMP implementation measures to identify and address the sources of pollution.

5. For each water quality program plan requirement (e.g., Dissolved Oxygen Plan) the Annual Reports shall include the following results and information:

   a. All physical, chemical and biological data collected in the assessment;

   b. All graphs, charts, statistical analysis, modeling, and any other analytical analyses in support of the Permittee's evaluation of the data and conclusions derived from that analysis; and

   c. Documentation of quality assurance and control procedures (QA/QC).

6. Effectiveness assessment for each program element, as defined in the SWMP, shall be conducted annually, shall be built upon each consecutive year, and shall identify any necessary modifications. The SWMP shall describe, in detail, the performance standards or goals to use to gauge the effectiveness of the storm water management program. The primary questions that must be assessed for each program element include the following:

   a. Level 1 Outcome: Was the Program Element implemented in accordance with the Permit Provisions, SWMP Control Measures and Performance Standards?

   b. Level 2 Outcome: Did the Program Element raise the target audience's awareness of an issue?

   c. Level 3 Outcome: Did the Program Element change a target audience's behavior, resulting in the implementation of recommended BMPs?

   d. Level 4 Outcome: Did the Program Element reduce the load of pollutants from the sources to the storm drain system?

   e. Level 5 Outcome: Did the Program Element enhance or change the urban runoff and discharge quality?

f. Level 6 Outcome: Did the Program Element enhance or change receiving water quality?

7. A summary of any RWQEs that have been completed during the year, and a status update for those in progress. The summary shall include the conclusions and recommendations of completed RWQEs and the status of any additional BMP implementation pursuant to RWQEs;

8. Pursuant to 40 CFR 122.42(c)(7), the Permittee shall identify water quality improvements in, or degradation of, urban storm water;

9. For each monitoring component, photographs and maps of all monitoring station locations and descriptions of each location;

10. Recommendations to improve the monitoring program, BMPs, Performance Standards, and the SWMP to address potential receiving water quality exceedances and potential pollutant sources, and to meet the MEP standard; and

11. Provide operating data from all pump stations as an appendix in electronic format as necessary and estimate discharge volumes unless other technically defensible means to estimate urban runoff discharge volumes can be substituted.

13. In addition to the requirements listed above, the final Annual Report of this Order's permit term shall include:

a. An estimate of total pollutant loads attributable to urban runoff for target pollutants at each discharge monitoring station;

b. An evaluation of the long-term trends in MS4 discharges and receiving water quality. Several factors need to be considered when evaluating trends, such as changes in sample collection methods, data quality differences, and changes in analytical methods.

c. An evaluation of significant correlations of target pollutants with related constituents or water quality parameters.

C. Notification of Water Quality Exceedances (NWQE): The Permittee shall notify the Central Valley Water Board, in writing, of any exceedance in receiving waters of applicable water quality objectives within **90 days** of the monitoring event from which the exceedance was detected. The Permittee shall notify the Central Valley Water Board electronically within **48 hours** of

Water Column Toxicity monitoring data in receiving waters that indicates 50% mortality.

D. Certification: All work plans and reports submitted to the Central Valley Water Board shall be signed and certified pursuant to federal regulations at 40 CFR 122.41(k). Each report shall contain the following completed declaration:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility, of a fine and imprisonment for knowing violations.

Executed on the __ day of, 2011, at _____.

(Signature)_____(Title)_____";

The Permittee shall mail the original of the annual report to:

CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD – CENTRAL VALLEY REGION
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

A copy of the annual report shall also be mailed to:

REGIONAL ADMINISTRATOR
ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105

II. MONITORING PROGRAM

The primary objectives of the Monitoring Program include, but are not limited to:

- Assessing compliance with this Order;
- Measuring and improving the effectiveness of the SWMP;
- Assessing the chemical, physical, and biological impacts on receiving waters resulting from urban runoff;
- Characterization of urban runoff;
- Identifying sources of pollutants; and
- Assessing the overall health and evaluating long-term trends in receiving water quality.

Ultimately, the results of the monitoring requirements outlined below should be used to refine the SWMP to reduce pollutant loadings and protect and enhance the beneficial uses of the receiving waters of the Port. The Monitoring Program consists of the following elements:

- Baseline Monitoring
  - Urban Discharge Monitoring
  - Receiving Water Monitoring
  - Water Column Toxicity Monitoring
  - Dry Weather Field Screening Monitoring

- Water Quality Based Programs
  - Pesticide Monitoring Plan
  - Low Dissolved Oxygen Monitoring Plan
  - Total Mercury and Methylmercury Control Program

- Special Studies
  - Retention Basin Monitoring
  - BMP Effectiveness Studies

The Permittee shall implement the Monitoring Program as follows:

Baseline Monitoring

A. The Permittee shall conduct water column monitoring in both urban discharge outfalls (see Section C – Urban Discharge Monitoring) and receiving waters (see Section D – Receiving Water Monitoring). Water monitoring shall take place at each receiving water and urban discharge station. The water column monitoring shall include all storm water pollutants of concern (POCs) identified during the 2004-2009 baseline monitoring as identified in Table B1, Table D, and Table G of this Order. The frequency of monitoring shall be in accordance with Table F.

B. Sampling Protocol

1. Samples from each urban discharge and receiving water station described in Sections C and D shall be analyzed for all constituents listed in Table B1, Table D, and Table G. All sample collection and analyses shall follow standard U.S. Environmental Protection Agency (U.S. EPA) protocol. The results of analysis shall be reported in the appropriate standard units. Additionally, the Permittee shall establish minimum analytical detection levels that are at or below the most stringent of the Federal Storm Water Parameter Benchmark Values and effluent limitations, TMDL WLAs, Water Quality Objective Criterion or the minimum levels for priority pollutants found in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*[1] (State Water Resources Control Board, 2000).

2. The constituents listed in Table B1 and Table D represent the Port's targeted pollutants of concern (POCs). The constituents represent POCs in the Port's waterways and POCs in the Port's Industrial sector.

3. The Permittee shall identify storm water pollutant benchmark concentrations for each subwatershed based on specific industry activity. The Permittee shall use the standards and guidelines put forth in the U.S. EPA 2008 Multi-Sector General Permit (MSGP) and the General Industrial Permit.

   The following information shall be included in the SWMP and subsequent Annual Reports :

[1] This document is available at:
http://www.swrcb.ca.gov/water_issues/programs/state_implementation_policy/docs/final.pdf

a. List of all current industry types and bulk material handling activities within each subwatershed, grouped into the MSGP's and the General Industrial Permit's industry sector-specific categories;

b. Identify sector-specific storm water pollutant benchmark concentrations found in the MSGP Part 8 and the General Industrial Permit. Concentration values shall be adjusted to water hardness for each outfall as applicable. If more than one parameter concentration value exists in a subwatershed the most stringent value shall be used;

c. The parameters shall be added to the current list of POCs associated with the respective subwatershed outfall (Table B1) and to the receiving water monitoring list (Table D). The parameters shall also be added to Table G and the minimum levels shall be consistent with those put forth in Appendix 4 of *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.* Sampling techniques shall follow standard U.S. EPA protocol and the guidelines put forth in the MSGP and the General Industrial Permit; and

d. The Permittee shall append the current monitoring database to include, at a minimum:

i. Date of Sample (specify "first-flush")
ii. Constituent
iii. Minimum Level
iv. Method Detection Limit
v. Unit of Measure
vi. Test Method
vii. Benchmark Value
viii. Benchmark Exceedance (Y/N)
ix. Water Quality Objective Criterion
x. Water Quality Source and Reference (e.g. CA Primary MCL)
xi. Water Quality Objective Exceedance (Y/N)
xii. Waste Load Allocation (Y/N)
xiii. Flow/Tide Direction
xiv. Sampling Results by Station ID No.

The storm water benchmark parameters and Tables B1 and D, shall be updated if a new industrial or bulk material handling activity begins. If an industrial or bulk material handling activity ceases or changes, the associated testing parameters shall be screened for the following two

seasons, during the first monitoring event ("first flush"). If the pollutants of concern associated with the specific terminated industrial activity are below the associated benchmark value, TMDL WLAs, or WQOs the Permittee may propose to the Executive Officer that the constituent(s) be removed from annual sampling. If the constituent is detected above the benchmark value, TMDL WLAs, or WQOs, it must continue to be monitored.

The benchmark values shall be used to analyze wet weather discharges only. If a parameter from Table B1 and B2 does not have a corresponding benchmark value, then the TMDL WLAs and/or the Water Quality Objectives (WQOs) shall be used to evaluate the sampling data. Dry weather monitoring events shall use the WQOs to analyze all sampling data.

Benchmark values, TMDL WLAs, and WQO concentrations are not effluent limitations; an exceedance, therefore, is not a permit violation. Benchmark values, TMDL WLAs, and WQO monitoring data shall be used to determine the overall effectiveness of control measures and assist the Permittee in identifying potential sources of problems, improve BMP implementation measures, and reduce pollutants to the MEP.

4. If a constituent listed in Table(s) B1, and/or D is detected below an applicable benchmark value, any applicable TMDL WLA, and WQO at the method detection limit for its respective test method in at least 9 of 12 consecutive sampling events since 2005-2006, that constituent need not be further analyzed unless the observed occurrences show concentrations greater than applicable receiving water quality objectives. The Permittee shall conduct annual confirmation sampling for constituents below an applicable benchmark value, TMDL WLA, and WQO during the first storm event monitored every year at each station. However, if confirmation sampling shows a constituent is below the applicable benchmark value, TMDL WLA, and WQO for two successive years, the Permittee may remove the constituent from annual sampling. If the constituent is detected, it must continue to be monitored.

   The Port may demonstrate that certain US EPA benchmarks should not be applicable at all monitoring sites because of high natural concentrations. Constituents, such as aluminum and EC, may be naturally occurring in higher levels in groundwater and the receiving waters.

5. The Permittee shall, provide in the SWMP and in subsequent Annual Reports, an analysis of the data collected for all constituents listed in Table G at each station, including those removed from annual sampling

by the processes listed in B4 above, during the first storm event (i.e., "first flush") monitored since 2008. If constituents from annual sampling are detected above benchmark values, TMDL WLAs, or WQOs, they must continue to be monitored and added to the respective Table(s) B1 and/or D.

6. Grab samples shall be used for receiving water monitoring. For monitoring of urban discharge outfalls during wet weather, the Permittee shall collect grab samples and flow-weighted composite samples in accordance with the revised sampling and analysis plan for the Port's storm water monitoring program.

7. The Permittee shall collect flow data at the time of sampling for all monitoring stations sampled during a given year. Receiving water or urban discharge flow may be estimated using U.S. EPA methods[2] at sites where flow measurement devices are not in place.

8. Each year[3], samples shall be collected from urban discharge[4] and receiving water[4] monitoring sites **during three qualifying storm events[4,5]** and **two dry weather events[6]**. The Permittee shall monitor the first storm event of the year preceded by at least 30 days of dry weather.[7] The second and third storm events to be monitored shall be preceded by at least three dry weather days. The monitoring events shall be separated by at least 20 days.

9. The Permittee shall submit a revised sampling and analysis plan, as part of the SWMP, by **3 August 2011 (or 6 months after the adoption date of this Order, whichever is later)**.

C. Urban Discharge Monitoring

Since 1997, the Permittee has monitored eight outfalls, shown in Attachments C and D. Beginning in the 2007-2008 season, three direct discharge monitoring locations were eliminated, D7, D8, and D15, because they were plugged or otherwise eliminated from the drainage system. For

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[2] NPDES Storm Water Sampling Guidance Document, U.S. EPA 833-B-92-001, July 1992

[3] This refers to the permit year of July 1 to June 30.

[4] Samples for chlorpyrifos and diazinon shall be collected during **one (1) qualifying storm event** and **one (1) dry weather event**.

[5] A qualifying storm event is one that occurs during normal daylight business hours (when the Port Docks are open for business), **except for the first-flush even if it occurs on weekends and holidays**; and when there is sufficient rainfall to produce a continuous discharge of storm water for an hour or more; the Permittee shall target storm events with a predicted probability of and at least a fifty percent chance of rainfall according to the NOAA website for the zip code of 95203 (http://forecast.weather.gov/MapClick.php?CityName=Stockton&state=CA&site=STO&lat=37.9527&lon=-121.328)

[6] Dry weather monitoring events shall be preceded by at least seven days of no rainfall; the two dry weather monitoring events shall be separated by at least 14 days of no rainfall. Dry weather monitoring events shall occur in the dry season (June 1 through September 30).

[7] A day with a storm event too small to generate runoff (typically 0.1 inches or less) shall be considered a dry weather day.

this permit term, samples shall be taken from representative outfalls at the following locations, D-2, D-10, the East Complex retention basin outfall (RB), and the outfall of the West Complex pump station (WC). Samples are only required to be collected from RB according to Section E below. The locations of these outfalls are shown in Attachment C and D.

Direct discharge monitoring shall include at least the following:

Table A. Urban Discharge Monitoring Stations

Station ID No.	Drainage Description or Location
East Complex Runoff	
D-2	Calaveras Cement Company / Lehigh site; drainage to a discharge pipe
D-10	Dock 8 and area along Road 5 and Road C; drainage to a discharge pipe
Retention Basin Outfall Pump Station (RB)	Area of East Complex south of Road A (495 acres)

West Complex Runoff	
West Complex Pump Station (WC)	Southwest corner of island; discharges to Burns Cutoff

The Permittee shall notify the Central Valley Water Board within 30 days if any outfalls are opened, re-opened, or eliminated from the drainage system. If additional monitoring stations are needed, they shall be established under the direction of the Executive Officer.

Urban discharge monitoring shall be consistent with Table G.

The Permittee shall analyze storm water samples collected from monitoring stations as follows:

Table B1. Urban Discharge Station Sampling Parameters

Station ID No.	Parameter	Sample Type
All Stations[a]	Chemical oxygen demand	composite[9]
	Biochemical oxygen demand	composite
	Dissolved oxygen	grab
	pH	grab
	Specific conductance	grab
	Temperature	grab
	Total dissolved solids	composite
	Total suspended solids	composite
	Turbidity	composite
	Oil and Grease	composite
	Heavy metals[8]	composite
	Ammonia	composite
	Nitrate/Nitrite as N	composite
	Phosphorous	composite
	Diazinon [b]	composite
	Chlorpyrifos[b]	composite
	Mercury	grab
	Methylmercury	grab
D-2	Same as All Stations	Same as All Stations
D-10	Same as All Stations	Same as All Stations
	Sulfate	composite
	Sulfide	composite
	Sulfur	composite

a. Parameters listed under "All Stations" shall be sampled as a grab from RB, not as composite.

b. Samples for chlorpyrifos and diazinon sites shall be collected during **one (1) qualifying storm event** and **one (1) dry weather event.**

[8] These are aluminum, antimony, arsenic, barium, beryllium, cadmium, total chromium, hexavalent chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. The concentration values for cadmium, copper, lead, nickel, silver, and zinc are hardness dependent. For these parameters, the Permittee must adjust the WQO and Benchmark values (following standard EPA Protocol) to reflect the hardness of the receiving waters.

[9] Reported as event mean concentration for composites.

Station ID No.	Parameter	Sample Type
RB	TKN Pesticides[10] Sulfate Sulfur Total Coliform bacteria E. Coli bacteria	grab grab grab grab grab grab
WC	Pesticides[10] Total Coliform bacteria E. Coli bacteria	composite grab grab

For the purpose of pollutant source identification, the Permittee shall analyze storm water samples collected from up-gradient monitoring stations (i.e., culverts, manholes, the south ditch) as follows:

Table B2. RBI and Up-gradient Monitoring Station Sampling Parameters

Station ID No.	Parameter	Sample Type
Retention Basin Inlet (RBI)	Chemical oxygen demand Biochemical oxygen demand Dissolved oxygen pH Specific conductance Temperature Total dissolved solids Total suspended solids Turbidity Oil and Grease Heavy metals[11] Ammonia Nitrate/Nitrite as N Phosphorous	composite[12] composite grab grab grab grab composite composite composite composite composite composite composite composite

[10] These shall include organophosphorus pesticides and triazine pesticides.

[11] These are aluminum, antimony, arsenic, barium, beryllium, cadmium, total chromium, hexavalent chromium, cobalt, copper, lead, , molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. The concentration values for cadmium, copper, lead, nickel, silver, and zinc are hardness dependent. For these parameters, the Permittee must adjust the WQO and Benchmark values (following standard EPA Protocol) to reflect the hardness of the receiving waters.

[12] Reported as event mean concentration for composites.

Station ID No.	Parameter	Sample Type
	Diazinon[a] Chlorpyrifos[a] Mercury Methylmercury TKN Pesticides[13] Sulfate Sulfide Sulfur Total Coliform bacteria E. Coli bacteria	composite composite grab grab composite composite composite composite composite grab grab
Other up-gradient locations as identified in the Annual Work Plans	Parameters to be tested will be dependent on the pollutant being investigated and will be identified in the Annual Work Plan	Specified in the Annual Work Plan

a. Samples for chlorpyrifos and diazinon shall be collected during **one (1) qualifying storm event** and **one (1) dry weather event**.

D. Receiving Water Monitoring

All receiving water samples shall be grab samples, collected at mid-depth, in mid-stream of the receiving water, and in a manner that measures the water quality impacts of corresponding urban discharge outfalls. Receiving water monitoring shall be taken after discharges from D-2, D-10, RB (if discharging), and WC have occurred. Attachment B shows the approximate locations of the receiving water sampling stations. Each year, samples shall be collected **coinciding with the three qualifying storm events** and **two monitoring events during the dry season** [14] in accordance with the Port's sampling and analysis plan. Receiving water monitoring shall include at least the following:

[13] These shall include organophosphorus pesticides and triazine pesticides.

[14] Receiving water sampling and toxicity testing is only required to be done during dry weather monitoring events where a discharge is observed to be occurring. For safety reasons, receiving water monitoring is not required to be performed during dangerous weather conditions, unsafe flood conditions, before sunrise, or after sunset.

Table C. Receiving Water Monitoring Stations

Station ID No.	Drainage Description or Location
Receiving Water	
R-1	In the San Joaquin River upstream of the East Complex retention basin discharge, and south of the Santa Fe Railroad bridge
R-2	In the DWSC downstream of the east Burns Cutoff confluence, and downstream of the East Complex outfalls but upstream of the West Complex outfall
R-3	In the DWSC turning basin, east and upstream of the Port's East Complex outfalls, and downstream of the City of Stockton's industrial discharges
R-4	In the DWSC downstream (west) of the west Burns Cutoff confluence
R-5	In the Burns Cutoff upstream of the West Complex pump station

The upstream receiving locations shall be representative of what is entering each waterbody from the upstream sources (tidal stage dependant) of the Port, shown on Attachment B. The sampling and analysis plan shall require the tidal stage be identified in field notes.

The Discharger shall analyze storm water samples collected from monitoring stations as follows:

Table D. Receiving Water Station Sampling Parameters

Station ID No.	Parameter	Sample Type
R-1	Chemical oxygen demand	grab
	Dissolved oxygen	grab
	pH	grab
	Specific conductance	grab
	Temperature	grab
	Total dissolved solids	grab
	Total suspended solids	grab
	Turbidity	grab
	Biochemical oxygen demand	grab
	Nitrate/Nitrite as N	grab
	Ammonia	grab
	TKN	grab
	Oil & grease	grab
	Phosphorus	grab
	Sulfate	grab

Station ID No.	Parameter	Sample Type
	Sulfur Heavy metals Pesticides[b] Diazinon[a]Chlor pyrifos[a] Mercury Methylmercury Total Coliform bacteria E. Coli bacteria	grab grab grab grab grab grab grab grab grab
R-2	Same as for R-1	Same as for R-1
R-3	Same as for R-1	Same as for R-1
R-4	Same as for R-1	Same as for R-1
R-5	Same as for R-1	Same as for R-1

a. Samples for chlorpyrifos and diazinon shall be collected during **one (1) qualifying storm event** and **one (1) dry weather event**.

b. These shall include organophosphorus pesticides and triazine pesticides.

E. East Complex Retention Basin Monitoring

The retention basin shall be monitored via grab samples collected at the RB sampling station (Table A). This monitoring shall occur during each outfall discharge event. If urban discharges enter the retention basin while it is discharging to the San Joaquin River, then the Permittee shall resample the RB station basin at least daily as long as inlet discharges are occurring. Samples shall be analyzed for the parameters listed for RB specified in Table B-1. For RB, “first flush” shall be considered to be the first discharge event occurring during the storm water year. Monitoring RB shall be consistent with the frequency of urban discharge monitoring described in Section II.B.8.

The Permittee shall also collect and analyze upstream and downstream monitoring of receiving water samples during discharge events from the East Complex retention basin to the San Joaquin River. If urban discharges enter the retention basin at RBI while it is discharging, then the Permittee shall resample the upstream and downstream receiving water sites at least daily as long as inlet discharges are occurring. Sampling and analytical protocols for this monitoring shall be the same as for the receiving water monitoring described in MRP Section II.D.

F. Industrial Activities Monitoring

The Permittee shall develop a Facility Water Pollution Prevention Plan

(FPPP), including storm water quality monitoring plans, for the Permittee-

operated industrial areas that would otherwise qualify for coverage under the General Industrial Permit. The FPPP shall be consistent with the General Industrial Permit. Qualifying industrial areas identified by the Permittee include its maintenance shop, fleet vehicle fueling area, equipment wash pad, and fertilizer warehouses.[15]

G. Monitoring during Loading and Unloading of Bulk Materials

This monitoring shall consist of water quality analysis and visual observations as follows:

1. During all bulk material loading and unloading events, the Permittee shall conduct visual observations of these activities to monitor the effectiveness of spill prevention BMPs to protect the Port's storm water conveyance system and subsequent discharges. Documentation shall include the date and time of inspection, the name and title of the inspector, the dock where material transfer occurred, the material and quantity spilled, a description of efforts to cleanup any spills, and weather conditions.

2. In the event of an observed spill onto the Port's property and subsequently discharged to a water body, the Permittee shall collect grab samples of the appropriate water body at points upstream, downstream, and beneath the loading dock. Samples shall be collected at a time that would best represent any water quality impacts caused by this spill. The Permittee shall also (1) document the location, date and time of sampling, the material and quantity spilled, when material spill began and ended, and weather conditions; and (2) evaluate analytical results to determine the effectiveness of BMPs in controlling spills into receiving waters, and any associated water quality impacts.

H. Water Column Toxicity Monitoring

The Permittee shall conduct short-term chronic toxicity monitoring and reporting according to the following requirements:

1. <u>Toxicity Sampling Locations and Procedures</u>

   a. The Permittee shall collect toxicity samples at receiving water monitoring stations R-1 through R-5, the West Complex pump station (Station WC), and the East Complex Retention Basin (when it is discharging to the San Joaquin River) for three qualifying storm events separated by 7 days of dry weather, and two dry weather monitoring events (if a discharge is occurring). The sampling frequency shall be conducted during two non-consecutive years

[15] These areas were identified in the Port's 31 August, 2009 Proposed Storm Water Management Plan and Report of Waste Discharge

during the permit term. If statistically significant chronic toxicity, as defined in paragraph 2.d. below, is observed at any downstream sampling location, an additional round of sampling shall take place in a non-consecutive year during the permit term with the species that exhibited toxicity. The Permittee shall target the first storm event that produces a rainfall of at least 0.25 inches.

b. The Permittee shall collect toxicity samples pursuant to 40 C.F.R. Part 136 and Attachment C of Permittee's "Sampling and Analysis Plan 2008-2009 Storm Season – Port of Stockton," or revision thereof, which shall be included in the revised SWMP.

c. The Permittee shall collect sufficient sample volume to perform the required toxicity tests and any potential Toxicity Identification Evaluation (TIE) as required in section II.H.3. below.

2. Toxicity Testing Protocols

a. Toxicity tests shall comply with 40 C.F.R. Part 136.3, Table 1A and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (2002), EPA/821/R-02/013. ("2002 Short Term Chronic Toxicity Method")* or the most recent edition.

b. The Permittee shall test with all three test species and endpoints: (1) the fathead minnow survival and growth endpoints, (2) the *Ceriodaphnia dubia* survival and reproduction endpoints, and (3) Green alga, *Selenastrum capricornutum.* The preceding toxicity test species shall not be substituted with another organism except with prior written authorization from Central Valley Water Board staff.

c. The Permittee shall use the short-term test methods for estimating the chronic toxicity of NPDES effluents found in the 2002 Short Term Toxicity Method (or the most recent edition); and 40 C.F.R. Part 136.3 Table IA. The Permittee shall conduct:

i. a static renewal toxicity test with the fathead minnow, *Pimephales promelas* (Larval Survival and Growth Test Method 1000.0-daily observations for mortality to calculate toxicity for survival and measure growth endpoints of the test);

ii. a static renewal toxicity test with the daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0-daily

reproduction endpoints of the test); and

iii. a static renewal toxicity test with the green alga, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*) (Growth Test Method 1003.0).

d. The Permittee shall analyze the survival and sub-lethal endpoint data from the chronic tests using a standard t-test approach and statistical analysis methods consistent with *Methods for Measuring the Acute toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (2002),* EPA/821/R-02/012, page 86). The Permittee shall compare toxicity of each undiluted sample to a laboratory control. Additionally, Permittee shall compare the toxicity of downstream receiving water sample(s) to corresponding upstream receiving water sample(s), if available, as defined in paragraph e. below. Statistically significant chronic toxicity is thus defined as toxicity of downstream receiving water sample(s) relative to the upstream receiving water sample, if available, and relative to the laboratory control. If an upstream location is not available, statistically significant chronic toxicity is defined as toxicity of downstream receiving water sample(s) relative to the laboratory control.

e. Receiving water locations denoted as “upstream” and “downstream” will be dependent on the tidal stage and, therefore, direction of flow present at the time of discharge and sampling. Due to the nature of the tides, in some cases all five receiving water locations will be influenced by Port discharges and, therefore, will be designated “downstream” locations.

f. The Permittee must conduct all sampling, sample preservation, and analyses according to the test procedures under 40 C.F.R. Part 136. Therefore, for toxicity testing, the Permittee must follow the sample integrity protocol, test acceptability criteria, and quality assurance and quality control (QA/QC) measures set forth in US EPA’s most current (i.e. 2002) Part 136 toxicity test procedures. Furthermore, the SWMP must identify the QA/QC performance procedures established in its Quality Assurance Plan for Sample Collection and Analysis appended to its Annual Monitoring Work Plan.

g. Upon detection of chronic toxicity in a sample as defined in paragraph 2.d. above, the Permittee shall include a multi-

concentration test design in the preceding tests and perform requirements under paragraph 3.a. below.

3. Toxicity Identification Evaluation (TIE) Protocols

a. Upon detection of statistically significant chronic toxicity, as defined in paragraph 2.d. above, the Permittee shall perform a TIE using the same species and test method and according to the following U.S. EPA test method manuals: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I (1992)* EPA/600/6-91/005F; *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity (1993),* EPA/600/R-92.080; and *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity (1993),* EPA/600/R-92/081.

b. The Permittee shall complete chronic Phase I (Toxicity Characterization Procedures) TIEs for all sites demonstrating a statistically significant result to any 1-test organism.

c. The Permittee shall conduct a TIE on any test species demonstrating a statistically significant toxicity result at any sampling station. The Permittee may utilize TIE Prioritization Metric to rank sites for TIEs.

4. Toxicity Reduction Evaluation (TRE) Protocols

a. When the same pollutant or class of pollutants is identified through two TIE evaluations at a monitoring location, the Permittee shall perform a TRE of the toxic pollutant or the class of pollutants that has been identified through the TIE process in accordance with *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (1989)* (EPA/600/2-88/070).

b. No later than 90 days following the identification of a pollutant or class of pollutant, as described in paragraph 4.a. above, the Permittee shall submit to the Central Valley Water Board staff a TRE Corrective Action Plan that shall, at a minimum, discuss the following items:

i. the potential sources of pollutant(s) causing toxicity;

ii. a list of municipalities or other entities that may have jurisdiction over sources of pollutant(s) causing toxicity;

iii. recommended BMPs to reduce the pollutant(s) causing toxicity;

iv. proposed control measures to reduce the pollutant(s) causing toxicity for new development and redevelopment projects; and

v. proposed follow-up monitoring to demonstrate that toxicity has been removed.

d. The Permittee shall implement the TRE Corrective Action Plan and take all reasonable steps to eliminate toxicity.

e. If TRE implementation for a specific pollutant coincides with Total Maximum Daily Load ("TMDL") implementation for the pollutant, the efforts must be coordinated. (For instance, if a TMDL for diazinon is being implemented at the same time a TRE for diazinon is required, the efforts shall be coordinated to avoid overlap). If applicable, the Permittee may use the same TRE for the same toxic pollutant or pollutant class in different watersheds or basins.

5. Toxicity Testing Notification and Reporting Requirements:

a. If the Permittee is unable to perform any toxicity test and comply with the requirements under this Section II.H, it shall be considered a "Triggering Event." The Permittee shall, within 48 hours of the missed test, submit the following to the Central Valley Water Board:

i. a written explanation, with documentation, of the Triggering Event; and

ii. a plan, including measures to be taken and the timetable for implementing the measures, to correct, prevent or avoid the circumstances giving rise to the Triggering Event.

b. The Permittee shall submit the following toxicity data and reports to the Central Valley Water Board:

i. Summary of toxicity results.

ii. A finding for each sample of whether statistically significant chronic toxicity (as defined in paragraph 2.d. above) was observed.

iii. Within 45 days of completion of toxicity tests, the Permittee shall provide a copy of all sample documents, including chain of custody forms, the toxicity test results and all associated laboratory documents.

iv. Within 30 days of completion of the TIE, the Permittee shall provide a copy of the TIE results and all associated laboratory documents.

v. Within 30 days of completion of TRE, the Permittee shall provide a copy of the TRE results and all associated laboratory documents.

c. The Permittee shall submit the following information in the Annual Report:

i. the dates of sample collection and initiation of each toxicity test;

ii. a summary of the reported toxicity test results according to the test methods manual chapter on report preparation and test review;

iii. all results for urban runoff parameters monitored concurrently with the toxicity test(s);

iv. TIE Phase testing (Phase I, Phase II, and Phase III) conducted for each monitoring station; and

v. the development, implementation, and results for each TRE Corrective Action Plan.

I. Dry Weather Field Screening

The Permittee shall conduct dry weather field screening to identify and eliminate unauthorized non-storm water discharges if they are occurring. Representative upgradient locations and outfalls having sufficient flow shall be analyzed for temperature, specific conductance (EC), turbidity, total residual chlorine[2][16] and pH (field measurements); and phenols, , total copper, and methyl blue activated substances (MBAS, i.e. detergents/ surfactants) which are required to be tested by a certified laboratory. In addition, as described in Section B, Sampling Protocol above, two dry-

[16] A handheld field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance record for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained by the Permittee. Total chlorine residual must be monitored with a method sensitive to and accurate at a reporting level of 0.1 mg/L.

season discharges per year from urban discharge outfalls must be tested for the constituents listed on Table B1 if non-storm water discharges are occurring. The Permittee shall provide follow- up investigation to verify the presence of an illicit connection if the following action levels on Table E are exceeded:

Table E. Dry Weather Field Screening Action Levels

Constituent	**Units**	**Action Levels**
Phenols	mg/L	>0.017
Total copper	mg/L	>2
Electrical Conductivity	µmhos/cm	>700
Methyl Blue Activated Substances (MBAS)	mg/L	>0.275
Turbidity	NTU	>55

Sampling Schedule

The Baseline Monitoring Program shall implement the monitoring schedule shown in Table F:

Table F. 2011-2016 Schedule for Baseline Monitoring Program[17]

	2011/2012					2012/2013					2013/2014					2014/2015					2015/2016				
Baseline Monitoring Program Element	**E[a]**	**M[b]**	**L[c]**	**D1[d]**	**D2[d]**	**E**	**M**	**L**	**D1**	**D2**	**E**	**M**	**L**	**D1**	**D2**	**E**	**M**	**L**	**D1**	**D1**	**E**	**M**	**L**	**D1**	**D2**
Urban Discharge[18]																									
Water Quality Parameters (Table B1)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Water Quality Parameters (Table G)											X														
Receiving Water[18]																									
Water Quality Parameters (Table D)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Water Quality Parameters (Table G)											X														
Water Column Toxicity	X	X	X	X	X						X	X	X	X	X										
Dry Weather Field Screening [e]				X	X				X	X				X	X				X	X				X	X

Notes:

a. **E** = Early season storm event (Capture the "first flush")

b. **M** = Midseason storm event

c. **L** = Late season storm event

d. Dry weather monitoring events **D1** and **D2** (if a discharge is occurring)

e. Field screening is conducted during two events per dry season with sampling only required if non-storm water is discharging to the receiving water or retention pond

[17] Frequency may be adjusted based on the analysis outlined in Section II.B. of this MRP.

[18] Samples for chlorpyrifos and diazinon shall be collected during **one (1) qualifying storm event** and **one (1) dry weather event**.

J. Water Quality-Based Programs

1. Monitoring and assessment for the water quality based programs (i.e., pesticides, dissolved oxygen, and total mercury and methylmercury) for the Port will be addressed in this Order. Any data obtained by other programs shall be incorporated, evaluated, and included in each annual report.

2. As applicable, the Permittee shall submit a comprehensive analysis for the **Low Dissolved Oxygen Plan, Pesticide Plan, Total Mercury and Methylmercury Control Program** water quality based programs in the Annual 2016 Report. The final report shall include: summary of the project, map of sampling locations, description of activities performed, methods used, results, and conclusions. The final report shall include BMP selection and an implementation schedule for each program, as applicable.

III. SPECIAL STUDIES

A. Retention Basin Monitoring

The Permittee shall submit a Retention Basin Monitoring Work Plan, as part of the SWMP, to reflect additional monitoring of the following constituents: pyrethroids; total mercury and methylmercury in water; pyrethroids and total mercury in sediment. The work plan is designed to perform influent, effluent, and sediment chemistry/toxicity monitoring of one retention basin serving multiple land uses. Constituents that shall continue to be sampled include: total suspended solids (TSS), bacteria, turbidity, total dissolved solids (TDS) and organophosphate pesticides (chlorpyrifos and diazinon). Monitoring shall be designed to evaluate the effectiveness of the retention basin(s) in removing pollutants of concern and determining whether basin(s) stimulate methylmercury production. Monitoring shall be conducted during at least two wet seasons and two dry seasons within the five (5) year period. The Permittee may propose a joint study with other Central Valley MS4 permittees if the Port can demonstrate that data collected in other jurisdictions is applicable to retention basins in the Permittee’s jurisdictions.

B. BMP Effectiveness Study

The Permittee shall conduct studies to evaluate the effectiveness of source or treatment control BMPs. The objective of these studies shall include the following:

1. Monitor the reduction of pollutants of concern in storm water including, but not limited to, pathogen indicators, nutrients, heavy metals, mercury and pesticides from a minimum of one BMP. Monitoring shall be continued until the effectiveness of the BMP can be determined;

2. Evaluate the requirements for and installation and maintenance cost of each BMP; and

3. Develop recommendations for appropriate BMPs for the reduction of pollutants of concern in storm water in the Port.

IV. STANDARD MONITORING PROVISIONS

All monitoring activities shall meet the following requirements:

A. Monitoring and Records [40 CFR 122.41(j)(1)]
Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

B. Monitoring and Records [40 CFR 122.41(j)(2)] [California Water Code §13383(a)]

The Permittee shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge and application for this Order, for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Central Valley Water Board or U.S. EPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge.

C. Monitoring and Records [40 CFR 122.41(j)(3)]. Records of monitoring information shall include:

1. Date, location, and time of sampling or measurements;
2. Individual(s) who performed the sampling or measurements;
3. Date analyses were performed;
4. Individual(s) who performed the analyses;
5. The analytical techniques or methods used; and

6. Results of such analyses.

D. Monitoring and Records [40 CFR 122.41(j)(4)]

All sampling, sample preservation, and analyses must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this Order.

E. Monitoring and Records [40 CFR 122.41(j)(5)]

The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by both.

F. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.

G. For priority toxic pollutants that are identified in the CTR (40 CFR 131.38), the MLs published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California 2005 (SIP) shall be used for all analyses, unless otherwise specified. The lowest MLs from Appendix 4 of the SIP are included as Table G. For Priority Pollutants, in accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Permittee may select any SIP ML that is less than the water quality objective instead of the MLs listed in Table G. If no ML value is below the water quality objective, the Permittee shall select the lowest SIP ML value, and its associated analytical method.

For pollutants not contained in Appendix 4 of the SIP, the test method and method detection limit (MDL) listed in Table G shall be used for all analyses. For these constituents, the Permittee may propose different MLs and/or ELODs as described below under H.4 for Executive Officer approval.

H. The Monitoring Report shall specify the analytical method used, the MDL and the ML for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported with one of the following methods, as appropriate:

1. An actual numerical value for sample results greater than or equal to the ML;

2. "Not-detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used; or

3. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML. The estimated chemical concentration of the sample shall also be reported. This is the concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

4. For Table G pollutants,, if the Permittee can demonstrate that a particular ML or ELOD is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP or Table G. The Permittee must submit documentation from the laboratory to the Central Valley Water Board Executive Officer for approval prior to raising the ML or ELOD for any constituent. Justification for using an alternative ELOD should describe the procedure used by the available laboratory(ies) to determine the ELOD and the reason that the Table G ELOD could not be attained using the procedure.

I. Monitoring Reports [40 CFR 122.41(l)(4)(ii)]

If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Annual Report.

J. Monitoring Reports [40 CFR 122.41(l)(4)(iii)]

Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.

K. If no flow occurred during the reporting period, the Monitoring Report shall so state.

L. The Executive Officer or the Central Valley Water Board, consistent with 40 CFR 122.41, may approve changes to the Monitoring Program, after providing the opportunity for public comment, either:

1. By petition of the Permittee or by petition of interested parties after the submittal of the Annual Report. Such petition shall be filed not later than 60 days after the Annual Report submittal date, or

2. As deemed necessary by the Executive Officer following notice to the Permittee.

I, PAMELA C. CREEDON, 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, Central Valley Region, on **3 February 2011** and amended on 10 October 2014 by Order R5-2014-0130.

Ordered by *Original signed by Pamela C. Creedon*
PAMELA C. CREEDON, Executive Officer

10/10/2014
Date

Attachments: Table G – List of Constituents

Attachment A – Permit Area Map

Attachment B – River Monitoring Locations Map

Attachment C – West Complex Monitoring Locations Map

Attachment D – East Complex Monitoring Locations Map

Attachment E – Definitions

Attachment F – Standard Provisions and Reporting Requirements (February 2004)

TABLE G

LIST OF CONSTITUENTS AND ASSOCIATED MINIMUM LEVELS MLs)[19]
ORDER R5-2011-0005-01
STOCKTON PORT DISTIRCT MUNICIPAL SEPARATE STORM SEWER SYSTEM

CONSTITUENTS	MLs
FIELD MEASUREMENTS	
Date	mm/dd/yyyy
Sample Time	hr:min (regular time)
Weather	degrees F
CONVENTIONAL POLLUTANTS	**mg/L**
Oil and Grease	5
pH	0 - 14
Water Temperature	degrees C
Dissolved Oxygen	Sensitivity to 5 mg/L
Cyanide	0.005
BACTERIA	
Fecal coliform	<20mpn/100ml
E. coli (fresh waters)	<20mpn/100ml
GENERAL	**mg/L**
Total Petroleum Hydrocarbons	5
Total Suspended Solids	3
Total Dissolved Solids	10
Volatile Suspended Solids	3
Total Organic Carbon	1
Dissolved Organic Carbon	1
Biochemical Oxygen Demand	2
Chemical Oxygen Demand	20-900
Total Kjeldahl Nitrogen	1
Alkalinity	10
Total Ammonia-Nitrogen	0.5
Nitrate-Nitrite as N	0.2

[19] For Priority Pollutants, the MLs represent the lowest value listed in Appendix 4 of the SIP. Reporting Levels (RL) must be lower than or equal to the ML value. For Priority Pollutants, in accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Permittee may select any SIP ML that is less than the water quality objective instead of the MLs listed in Table G. If no ML value is below the water quality objective, the Permittee shall select the lowest SIP ML value, and its associated analytical method. If a particular ML is not attainable in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead.

CONSTITUENTS	MLs
Dissolved Phosphorus	0.05
Total Phosphorus	0.1
Total Hardness	5
MBAS	0.5
Chloride	2
Fluoride	1
Methyl tertiary butyl ether (MTBE)	1
Perchlorate	4 µg/L
Turbidity	0.1 NTU
Specific Conductance	20 µmhos/cm
Methylmercury	0.05 ng/L
VOLATILE SUBSTANCES	**µg/L**
1,1-Dichloroethane	0.5
1,1-Dichloroethene	0.5
1,1,1-Trichloroethane	0.5
1,1,2-Trichloroethane	0.5
1,1,2,2-Tetrachloroethane	0.5
1,2-Dichlorobenzene (volatile)	0.5
1,2-Dichloroethane	0.5
1,2-Dichloropropane	0.5
1,3-Dichlorobenzene (volatile)	0.5
1,3-Dichloropropene (volatile)	0.5
1,4-Dichlorobenzene (volatile)	0.5
Acrolein	2.0
Acrylonitrile	2.0
Benzene	0.5
Bromoform	0.5
Bromomethane	1.0
Carbon Tetrachloride	0.5
Chlorobenzene	0.5
Chlorodibromo-methane	0.5
Chloroethane	0.5
Chloroform	0.5
Chloromethane	0.5
Dichlorobromo-methane	0.5
Dichloromethane	0.5
Ethylbenzene	0.5
Tetrachloroethene	0.5
Toluene	0.5

CONSTITUENTS	MLs
trans-1,2 Dichloroethylene	0.5
Trichloroethene	0.5
Vinyl Chloride	0.5
SEMI-VOLATILE SUBSTANCES	**µg/L**
1,2-Benzanthracene	5
1,2-Dichlorobenzene (semi-volatile)	2
1,2-Diphenylhydrazine	1
1,2,4-Trichlorobenzene	1
1,3-Dichlorobenzene (semi-volatile)	1
1,4-Dichlorobenzene (semi-volatile)	1
2-Chlorophenol	2
2,4-Dichlorophenol	1
2,4-Dimethylphenol	1
2,4-Dinitrophenol	5
2,4-Dinitrotoluene	5
2,4,6-Trichlorophenol	10
2,6-Dinitrotoluene	5
2- -Nitrophenol	10
2-Chloroethyl vinyl ether	1
2-Chloronaphthalene	10
3,3-Dichlorobenzidine	5
3,4-Benzofluoranthene	10
4-Chloro-3-methylphenol	1
4,6-Dinitro-2-methylphenol	5
4-Nitrophenol	5
4-Bromophenyl phenyl ether	5
4-Chlorophenyl phenyl ether	5
Acenaphthene	0.5
Acenaphthylene	0.2
Anthracene	2
Benzidine	5
Benzo(a) pyrene(3,4 Benzopyrene)	2
Benzo(g,h,i)perylene	0.1
Benzo(k)fluoranthene	2
bis 2-(1-Chloroethoxyl) methane	5
bis(2-chloroethyl) ether	1
bis(2-Chloroisopropyl) ether	2
bis(2-Ethylhexyl) phthalate	5
Butyl benzyl phthalate	10

CONSTITUENTS	MLs
Chrysene	5
di-n-Butyl phthalate	10
di-n-Octyl phthalate	10
Dibenzo(a,h)-anthracene	0.1
Diethyl phthalate	2
Dimethyl phthalate	2
Fluoranthene	0.05
Fluorene	0.1
Hexachloro-cyclopentadiene	5
Hexachlorobenzene	1
Hexachlorobutadiene	1
Hexachloroethane	1
Indeno(1,2,3,cd)-pyrene	0.05
Isophorone	1
N-Nitroso diphenyl amine	1
N-Nitroso-dimethyl amine	5
N-Nitroso -di n-propyl amine	5
Naphthalene	0.2
Nitrobenzene	1
Pentachlorophenol	1
Phenanthrene	0.05
Phenol	1
Pyrene	0.05
METALS (Dissolved and Total)	**µg/L**
Aluminum	50
Antimony	0.5
Arsenic	1
Beryllium	0.5
Cadmium	0.25
Chromium	0.5
Chromium VI	5
Copper	0.5
Cyanide	5
Iron	100
Lead	0.5
Mercury	0.5 ng/L
Nickel	1
Selenium	1
Silver	0.25

CONSTITUENTS	MLs
Thallium	1
Zinc	1
PESTICIDES - PCBs	**µg/L**
4,4'-DDD	0.05
4,4'-DDE	0.05
4,4'-DDT	0.01
a-Endosulfan	0.02
a-Hexachloro-cyclohexane	0.01
Aldrin	0.005
alpha-BHC	0.01
beta-BHC	0.005
delta-BHC	0.005
b-Hexachloro-cyclohexane	0.005
alpha-chlordane	0.1
Gamma-chlordane	0.1
d-Hexachloro-cyclohexane	0.005
Dieldrin	0.01
Alpha-Endosulfan	0.02
Beta-Endosulfan	0.01
Endosulfan Sulfate	0.05
Endrin	0.01
Endrin Aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
Lindane(g-Hexachloro-cyclohexane)	0.02
PCB 1016	0.5
PCB 1221	0.5
PCB 1232	0.5
PCB 1242	0.5
PCB 1248	0.5
PCB 1254	0.5
PCB 1260	0.5
Toxaphene	0.5
ORGANOPHOSPHATE PESTICIDES	**µg/L**
Chlorpyrifos	0.015
Diazinon	0.05
Malathion	0.05
Atrazine	2

CONSTITUENTS	MLs
Cyanazine	2
Prometryn	2
Simazine	2
HERBICIDES	**µg/L**
2,4-D	10
Glyphosate	5
2,4,5-TP-SILVEX	0.5

PYRETHROID PESTICIDES IN WATER[20]	Estimated Limit of Detection (ELOD) (ng/L)
Bifenthrin	0.10
Cyfluthrin	0.20
Cypermethrin	0.20
Deltamethrin/Tralomethrin	0.15
Esfenvalerate/Fenvalerate	0.05
Fenpropathrin	0.50
Lambda-cyhalothrin	0.20
Permethrin	1.00

[20] Unfiltered, grab sample using glass jars

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2011-0005-01

NPDES NO. CAS0084077

FACT SHEET
FOR
STOCTON PORT DISTRICT
FACILITY-WIDE STORM WATER DISCHARGES FROM
MUNICIPAL SEPARATE STORM SEWER SYSTEM AND
NON-STORM WATER DISCHARGES FROM THE PORT
SAN JOAQUIN COUNTY

I. PURPOSE

The Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will be considering adoption of a renewal of the Port's (hereafter "Permittee") Municipal Separate Storm Sewer System National Pollutant Discharge Elimination System (NPDES) Permit (hereinafter referred to as "Permit"). The purpose of this Fact Sheet is to provide the Permittee and interested persons an overview of the proposed permit as well as to provide the regulatory, technical, and background basis for the Permit requirements. Sections II through IV describe water quality problems from storm water and urban runoff, and Permit conditions designed to address these problems. Sections V and VI discuss each major element of the Permittee's Storm Water Management Plan (SWMP) that will be adopted by the Central Valley Water Board and is considered an integral and enforceable component of the proposed permit.

The proposed permit specifies requirements necessary for the Permittee to reduce the discharge of pollutants in urban runoff to the Maximum Extent Practicable (MEP). However, since compliance with the MEP standard is an iterative process, the Permittee's storm water programs must continually be assessed and modified as urban runoff management knowledge increases, to incorporate improved programs, control measures, best management practices (BMPs), etc. in order to achieve the MEP standard. This continual assessment, revision, and improvement of storm water management program implementation are expected to achieve compliance with water quality standards.

II. THE NEED TO REGULATE STORM WATER DISCHARGES

A. Impacts

The quality of storm water and urban runoff are fundamentally important to the health of the environment and the quality of life in the Central Valley Region. Polluted storm water runoff is a leading cause of water quality impairment in the Port area, as well as other potential sources such as aerial deposition and runoff from sources outside the

urban area. Storm water and urban runoff (during dry and wet weather) are often polluted with pesticides, fertilizers, animal droppings, trash, food wastes, automotive byproducts, and many other toxic substances generated by urban environments. Water that flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas carries these pollutants through the storm drain systems directly into receiving waters.

The water quality impacts and increased public health risks from municipal separate storm sewer system (MS4) discharges are well documented. According to receiving water monitoring data collected since the early 1990s, the pollutants of greatest concern that are discharged by the Port are biochemical and chemical oxygen demand, dissolved solids, nitrate, sulfate, and possibly pesticides and mercury. These are the pollutants that are most likely to periodically cause or contribute to an exceedance of applicable water quality standards in receiving waters.

The **National Urban Runoff Program** (NURP) Study [U.S. Environmental Protection Agency (USEPA) 1983], performed before MS4 discharges were regulated under the CWA, showed that MS4 discharges draining from residential, commercial, and light industrial areas contained significant loadings of total suspended solids. Although the NURP Study did not cover industrial sites, the study suggested that runoff from industrial sites may have significantly higher contaminant levels than runoff from other urban land use sites. Several studies tend to support this observation. For example, in Fresno, a NURP project site, industrial areas had the poorest storm water quality of the four land uses evaluated. The study found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality, and threaten aquatic life, wildlife, and human health.

The 1992, 1994, and 1996 National Water Quality Inventory Reports to Congress prepared by USEPA showed a trend of impairment in the nation's waters from contaminated storm water and urban runoff. The 1998 National Water Quality Inventory [305(b) Report][1] showed that urban runoff/storm water discharges affect 11% of rivers, 12% of lakes, and 28% of estuaries. The report notes that urban runoff and storm water discharges are the leading source of pollution and the main factor in the degradation of surface water quality[2] in California's rivers and streams.

The Natural Resources Defense Council (NRDC) 1999 report, *Stormwater Strategies, Community Responses to Runoff Pollution*[3] identifies two main causes of the storm

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[1] *Quality of Our Nation's Waters: Summary of the National Water Quality Inventory 1998 Report to Congress* - USEPA 841-S-00-001 - June 2000; *Water Quality Conditions in the United States: Profile from the 1998 National Water Quality Inventory Report to Congress* - USEPA 841-F-00-006 - June 2000

[2] *Quality of Our Nation's Waters: Summary of the National Water Quality Inventory 1998 Report to Congress,* Chapter 12 State and Territory Summaries, California., pp. 282-83: 1998.

[3] *Clean Water & Oceans: Water Pollution: In Depth Report Stormwater Strategies, Community Responses to Runoff Pollution*. Natural Resources Defense Council (NRDC), 1999.

water pollution problem in urban areas. Both causes are directly related to development in urban and urbanizing areas:

1. Increased volume and velocity of surface runoff. There are three types of human-made impervious covers that increase the volume and velocity of runoff: (i) rooftop, (ii) transportation imperviousness, and (iii) non-porous (impervious) surfaces. As these impervious surfaces increase, infiltration will decrease, forcing more water to run off the surface, picking up speed and pollutants.

2. High concentration of pollutants in the runoff. Certain activities, such as those from industrial sites, are large contributors of pollutant concentrations to the storm water system.

The report also identified several activities causing storm water pollution from urban areas, practices of homeowners, businesses, and government agencies.

Studies conducted by United States Geological Survey (USGS)[4] confirm the link between urbanization and water quality impairments in urban watersheds due to polluted storm water runoff. Furthermore, the water quality impacts of urbanization and urban storm water discharges have been summarized by several other U.S. EPA reports.[5] Urbanization causes changes in hydrology and increases pollutant loads that adversely impact water quality and impairs the beneficial uses of receiving waters.

Increases in population density and imperviousness result in changes to stream hydrology including:

1. Increased peak discharges compared to predevelopment levels;

2. Increased volume of storm water runoff with each storm compared to pre-development levels;

3. Decreased travel time to reach receiving water; increased frequency and severity of floods;

4. Reduced stream flow during prolonged periods of dry weather due to reduced levels of infiltration;

5. Increased runoff velocity during storms due to a combination of effects of higher discharge peaks, rapid time of concentration, and smoother hydraulic surfaces from channelization; and

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[4] *Water Quality in the Puget Sound Basin, Washington and British Columbia, 1996-98,*Circular 1216 - USGS 2000; *Water Quality in the Long Island-New Jersey Coastal Drainages, New Jersey and New York, 1996-98,* Circular 1201 - USGS 2000

[5] *Storm Water Phase II Report to Congress* (USEPA 1995); Report to Congress on the Phase II Storm Water Regulations (USEPA 1999); Coastal Zone Management Measures Guidance (USEPA 1992)

6. Decreased infiltration and diminished groundwater recharge.

In order to reduce pollutants and runoff flows from new development and redevelopment to the MEP, the Permittee is required to ensure that all feasible BMPs are considered. The MEP standard involves applying BMPs that are effective in reducing the discharge of pollutants in storm water runoff. In discussing the MEP standard, the State Water Board has said the following: "There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive." (Order WQ 2000-11, at p.20.) MEP is the result of the cumulative effect of implementing, continuously evaluating, and making corresponding changes to a variety of technically and economically feasible BMPs that ensure the most appropriate controls are implemented in the most effective manner. This process of implementing, evaluating, revising, or adding new BMPs is commonly referred to as the iterative approach. For Small MS4s, EPA has stated that pollutant reductions to the MEP will be realized by implementing BMPs through the six minimum measures described in the permit. (64 Federal Register 68753.)

B. Benefits of Permit Program Implementation

Implementation of BMPs will reduce pollutant discharges and improve surface water quality to the MEP. The expected benefits of implementing the provisions of the Port MS4 NPDES permit include:

1. **Enhanced Aesthetic Value**: Storm water affects the appearance and quality of a water body, and the desirability of working, living, traveling, or owning property near that water body. Reducing storm water pollution will increase aesthetic benefits as these water bodies recover and become more desirable.

2. **Enhanced Opportunities for Boating**: reducing sediment and other pollutants, and increasing water clarity, which enhances the boating experience for users, offer additional benefits.

3. **Enhanced Commercial Fishing**: Important because commercial fisheries are a significant part of the nation's economy, and 28% of the estuaries nationwide in the 1998 305(b) Report were impacted by storm water/urban runoff.

4. **Enhanced Recreational and Subsistence Fishing**: Pollutants in storm water can eliminate or decrease the numbers, or size, of sport fish and shellfish in receiving waters.

5. **Reduced Flood Damage**: Storm water runoff controls may mitigate flood damage by addressing problems due to the diversion of runoff, insufficient storage capacity, and reduced channel capacity from sedimentation.

6. **Reduced Illness from Consuming Contaminated Fish**: Storm water controls may reduce the presence of pathogens in fish caught by recreational anglers.

7. **Reduced Illness from Swimming in Contaminated Water**: Epidemiological studies indicate that swimmers in water contaminated by storm water runoff are more likely to experience illness than those who swim farther away from a storm water outfall.

8. **Enhanced Opportunities for Non-contact Recreation**: Storm water controls reduce turbidity, odors, floating trash, and other pollutants, which then allow waters to be used as focal point for recreation, and enhance the experience of the users.

9. **Drinking Water Benefits**: Pollutants from storm water runoff, such as solids, toxic pollutants, and bacteria may pose additional costs for treatment, or render the water unusable for drinking.

10. **Improved Habitat Benefits**: Storm water can have significant impacts to habitat and aquatic life. Storm water controls can minimize impacts to creek corridors and the wildlife dependent on them.

III. STATUTORY AND REGULATORY HISTORY AND OTHER CONSIDERATIONS OF THE STORM WATER PROGRAM

A. Basis for Permit Conditions

In the 15 years following the introduction of the Clean Water Act in 1972, water pollution control efforts focused primarily on wastewater discharges from facilities such as factories and sewage treatment plants, with less emphasis on diffuse sources. The Federal CWA prohibits the discharge of any pollutant to waters from a point source, unless a NPDES permit authorizes the discharge. Because the focus on reducing pollutants was centered on industrial and sewage treatment discharges, the U.S. Congress amended the CWA in 1987, requiring the USEPA to create phased NPDES requirements for storm water discharges.

In response to the 1987 Amendments to the CWA, the U.S. EPA developed Phase I of the NPDES Storm Water Program in 1990. Phase I required NPDES permits for storm water discharges from: (i) "medium" and "large" MS4s generally serving, or located in incorporated places or counties with, populations of 100,000 or more people; and (ii) eleven categories of industrial activity (including construction activity that disturbs five acres or greater of land).

Phase II, adopted in December 2000 and implemented in March 2003, required operators of small MS4s and small construction sites (construction activity disturbing greater than or equal to 1 acre of land or less than 1 acre if part of a larger common plan of development or sale) in urban areas to control storm water runoff discharges.

B. Statutory Basis for Permit Conditions

The intent of the permit conditions is to meet the statutory mandate of the CWA. The conditions established by this permit are based on Section 402(p)(3)(B) of the CWA which mandates that a permit for discharges from MS4s must: (1) effectively prohibit the discharges of non-storm water to the MS4; and (2) require controls to reduce pollutants in discharges from MS4 to the maximum extent practicable (MEP) including best management practices, control techniques, system design and engineering methods, and such other provisions determined to be appropriate. Compliance with water quality standards is to be achieved over time, through an iterative approach requiring improved BMPs.

The permit requires the implementation of a comprehensive SWMP using a selection of BMPs [see 40 Code of Federal Regulations (CFR) §122.44(k)] as the mechanism for achieving the reduction of pollutants in storm water to the MEP [see CWA. § 402(p)(3)(B)(iii)].

C. Regulatory Basis for Permit Conditions

As a result of the statutory requirements of the CWA, the U.S. EPA promulgated the MS4 Permit application regulations set forth in 40 CFR §122.26(d). These federal regulations described in detail the permit application requirements for MS4 operators. The information in the Report of Waste Discharge was used to develop the permit conditions and determine the Permittee’s status in relationship to these conditions.

D. Discharge Limitations

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality

standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for several constituents including pesticides, metals, toxicity, pH, dissolved oxygen, suspended solids, ammonia, nitrate and sulfate from illicit discharges.

No numeric effluent limitations are proposed at this time. Pursuant to 40 CFR §122.44(k), the U.S. EPA has required a series of increasingly more effective BMPs,[6] in the form of a comprehensive SWMP and performance standards, in lieu of numeric effluent limitations.[7]

E. Permitting Approach

The 1987 amendments to the Clean Water Act required municipalities to apply for MS4 permits that would reduce the pollutants in discharges to the maximum extent practicable. EPA Phase I Final Rule and Regulations then established the regulations for NPDES permit application requirements for large and medium-sized MS4s. EPA discussed how the language of CWA section 402(p)(3) contemplated fundamentally different characteristics of many municipalities and that municipalities would have permits tailored to meet particular geographical, hydrological, and climatic conditions. EPA continued to discuss that if MS4 permit conditions required SWMPs to be developed and implemented, the program elements would be enforceable in accordance with the terms of permit. EPA further pointed out that the permit goal for MS4 discharges is to avoid inflexibility in the types and levels of control. EPA stated that if mandatory requirements were appropriate, these requirements should be established under the authority of 40 CFR Section 402(p)(6), §122.26(d) and §122.33, which addresses permit application requirements.

The SWMP is required as part of the Report of Waste Discharge pursuant to 40 CFR §122.26(2)(d)(iv); therefore is an integral and enforceable component of the MS4 permit. In addition, the California Superior Court ruled, *"Because the Storm Water Management Plan is incorporated and is deemed an integral part of the Permits…any changes to the Plan are actually changes to the Permits. Because these are changes to the Permits, the notice and comment requirements must be complied with."* (*San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region,* Consolidated Case No. 500527, California Superior Court, 14 November 2003).

F. Policy

[6] *Interpretative Policy Memorandum on Reapplication Requirements* of MS4s issued by USEPA (61 Fed. Reg. 41697)
[7] *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits* (61 Fed. Reg. 43761)

State Water Board Resolution 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*) (the "Antidegradation Policy") prohibits the Central Valley Water Board from issuing permits that allow high-quality waters to be degraded, unless the Board makes certain findings regarding the need for the degradation, and also includes requirements in the permit that ensure that best practicable treatment or control measures are implemented to minimize any degradation that may occur. With regard to the need for the degradation, the Central Valley Water Board must find that the change in water quality is consistent with the maximum benefit to the people of the state. Further, the required best practicable treatment and control measures must not allow the discharge to unreasonably affect present and anticipated beneficial uses, create a condition of pollution or nuisance, or result in water quality lower than applicable standards.

For the purposes of an anti-degradation analysis of an MS4 Permit, the Central Valley Water Board is primarily concerned with growth and development in the MS4's service area, as growth and development may result in higher mass loading and concentrations of pollutant constituents that have the potential to degrade high-quality waters. Consistent with the Antidegradation Policy, the Central Valley Water Board considers the economic growth and development of the Port to be consistent with the maximum benefit of the people of the state.

Furthermore, the Central Valley Water Board considers the conditions imposed by this permit to require the Port to implement best practicable treatment and control of the discharges from its MS4 system through the implementation of BMPs. Although the Port has continued to develop since adoption of the previous permit, when combined with the more stringent requirements imposed by the Board in this permit, any increase in the volume and mass of pollutants from the new urban runoff will not have significant impacts on aquatic life, municipal and domestic supply, and recreation uses, which are the beneficial uses most likely affected by the pollutants discharged.

The Port submitted a basic antidegradation analysis on 10 November 2010. The water quality impacts discussed in the analysis reflect the information presented in the Port's 2009-2010 Annual Report. According to the analysis, storm water runoff emanating from urban development projected to occur in the Port area during the next five years will produce only minor changes to the mass loadings and concentrations of the seven pollutants that were evaluated in the analysis. The pollutants evaluated include: pH, chemical oxygen demand (COD), aluminum, specific conductivity, biological oxygen demand (BOD), zinc and nitrate as N. This Order also requires further analysis of several additional constituents, including those identified by the Permittee as pollutants of concern in the Report of Waste Discharge, constituents for which the Central Valley Water Board is developing TMDLs, and constituents considered particularly relevant to the water quality of the Sacramento-San Joaquin Delta. The anti-degradation analysis describes the Port's projected growth as well as its plans to mitigate any potential degradation caused by such growth.

This Order requires the Port to revise it's development standards [a.k.a. *Storm Water Development Standards*, (2005, Revised 2007)],[8] as part of the SWMP, which states that all new urban development and significant redevelopment priority projects are subject to the source control measures, runoff reduction control measures, and treatment control measures (a.k.a. Low Impact Development or LID measures). Site design and site-specific source controls are generally the most effective means to control urban runoff pollution because they minimize the need for treatment and are required for all applicable projects. Treatment controls are required in addition to source controls to minimize the discharge of pollutants to the storm water conveyance system. This Order requires the Port to implement a BMP Effectiveness Study of source or treatment control BMPs. A pilot test system using the CONTECH Storm Water Solutions is currently underway. A large scale system will be installed at outfalls to treat discharges from the East Complex if found successful. The Board finds that the requirements imposed in this Order constitute the best practicable treatment and control of the discharges from the MS4 system.

The discharge from continued urban development may result in some minimal degradation of waters of the State and navigable waters of the United States, but in this case, such degradation will not unreasonably affect present and anticipated beneficial uses, create a condition of pollution or nuisance, or result in water quality lower than applicable standards. Compliance with these requirements will result in the reduction of discharge pollutants from the urban areas to the MEP. Reducing pollutants in the discharge to MEP will result in an insignificant adverse impact and potentially a beneficial impact on existing water quality.

G. Consistency with Other MS4 Permits

In December 2007, the Regional Board adopted Waste Discharge Requirements Order R5-2007-0173 for discharges of urban runoff from the MS4s of the City of Stockton and contiguous developed area in San Joaquin County. We have incorporated appropriate portions of the Stockton MS4 permit into the Port's permit to ensure a regional consistency.

[8] Stockton Port District, *Storm Water Development Standards,* 2005- Revised 2007. WGR Southwest, Inc.

IV. BACKGROUND – STOCKTON PORT DISTRICT MS4

A. Stockton Port District MS4 Permit History

The Permittee is a special district that owns and operates the Port and its storm sewer system. The Port is located within the City of Stockton, which is the largest city in San Joaquin County, with a population of about 287,000. In February 1992, the Permittee filed a Notice of Intent with the State Water Resources Control Board to obtain coverage for the East Complex under the State of California's General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit; Order 91-13-DWQ, as amended by Order 92-12-DWQ).

In February 1997, the Central Valley Water Board issued an administrative civil liability (ACL) against the Permittee for a multitude of General Permit violations that occurred between February 1992 and January 1997. These violations included the Permittee's failure to implement a facility-wide Storm Water Pollution Prevention Plan; failure to implement adequate BMPs to control pollution discharges; failure to document dry and wet weather visual inspections; and the discharge of pollutants (pH and suspended solids) that caused or contributed to the exceedance of applicable water quality standards. The ACL resulted in the payment of a substantial monetary fine by the Permittee.

As part of the outcome of the ACL, the Central Valley Water Board issued an MS4 permit (Order No. 97-042) to the Port that regulated the Port as a medium municipal separate storm sewer system under federal storm water regulations (40 CFR § 122.26(b)(7)). This action was taken in February 1997 with the consent of the Permittee, which wished for its MS4 to be regulated separately from the City of Stockton. The portion of the storm sewer system operated by the City of Stockton is separately regulated under Waste Discharge Requirements Order R5-2007-0173, NPDES No. CAS083470.

In October 2004 the Central Valley Water Board adopted the second Phase I MS4 permit. The Permittee is currently regulated by Waste Discharge Requirements Order R5-2004-0136 NPDES No. CAS0084077, adopted on15 October 2004. The Permittee's SWMP[9] submitted with the Report of Waste Discharge in April of 2009 describes the history and evolution of the Port's program in more detail, including a summary of accomplishments and findings.

U.S. EPA Region 9, with assistance from the Central Valley Water Board, and PG Environmental, LLC conducted an audit of the Port's Municipal Separate Storm Sewer System program on 18-20 March 2008. The purpose of the audit was to assess the Port's compliance with requirements contained in Order R5-2004-0136. The audit

[9] Stockton Port District, *Proposed Storm Water Management Plan and Report of Waste Discharge,* Draft April 2009.

report identified areas in the Port's programs that were deficient or could be improved. The findings from the audit and U.S. EPA's recommendations are incorporated in this Order.

B. Storm Drain System

The Permittee has jurisdiction over and maintenance responsibility for its MS4. The Port is divided into a West Complex (formerly Rough & Ready Island) and an East Complex. The 640-acre East Complex is older and more developed than the 1,460-acre West Complex, which was acquired from the United States Navy in September 2003. The West Complex is being converted and developed for full-scale shipping and manufacturing operations, which will include maritime, industrial, and commercial uses.

The Port's storm sewer discharges consist of urban discharges from areas used for a wide variety of businesses including commercial, light industrial, heavy industrial, agricultural, transportation, and the industrial unloading, warehousing, and loading of goods for production and distribution. The quality and quantity of these storm water discharges varies considerably, owing to the affects of land use, season, geology, and sequence and duration of hydrologic events. The Port's receiving waters are the San Joaquin River, the Deep Water Ship Channel, and Burns Cutoff.

C. Total Maximum Daily Loads (TMDLs)

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR §122.26(d)(2)(i)(B,C,E, and F) and 40 CFR §122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR §122.44(d)(1) requires permits to include any requirements necessary to, "(a)chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality."

Federal NPDES regulation 40 CFR §122.44(d)(1)(i) requires NPDES permits to include limitations to, "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

Federal NPDES regulation 40 CFR §122.44(k) allows MS4 permits to include BMPs in lieu of numeric effluent limitations.

Basin Plan Requirements: Chapter IV. Control Action considerations of the State Water Board, of the Region's Water Quality Control Plan (Basin Plan) *Urban Runoff Policy* requires:

a. Subregional municipal and industrial plans are required to assess the impact of urban runoff on receiving water quality and consider abatement measures if problem exist; and
b. Effluent limitations of storm water runoff are to be included in NPDES permits where it results in water quality problems.

Storm water permits include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives. In the first phase, the Central Valley Water Board requires implementation of technically and economically feasible control measures to reduce pollutants in stormwater to the MEP. If this first phase does not result in attainment of water quality objectives, the Central Valley Water Board will consider permit conditions that might require implementation of additional control measures. For example, the control measures required as a result of TMDLs may go beyond the measures required in the first phase of the program.

Discussion of Requirements in this Permit

Total Maximum Daily Loads (TMDLs) are one of the Central Valley Water Board's highest priorities. The Central Valley Water Board considers storm water discharges from the Port to be significant sources of pollutants. The proposed Permit includes a list of 303(d) listed waterbodies, some of which have TMDLs that are in various stages of completion. NPDES permits must be consistent with approved TMDL waste load allocations. To implement adopted TMDLs, this proposed Permit implements control programs developed to attain waste load allocations.

In compliance with the current Order R5-2004-0136, the Permittee submitted a Pesticide Plan,[10] as a component of the SWMP, which was approved by the Central Valley Water Board. The plan addresses their own use of pesticides including diazinon, chlorpyrifos, and other lower priority pesticides and use of such pesticides by other sources within their jurisdiction. This proposed Order fulfills a component of the TMDL Implementation Plan adopted by this Central Valley Water Board on 23 June 2006 for diazinon and chlorpyrifos for the Sacramento-San Joaquin Delta Waterways and by requiring a management plan which includes BMPs, BMP implementation plan, effectiveness assessment, and compliance schedule that describes actions that will be taken to reduce diazinon and chlorpyrifos discharges and

[10] Port, *Pesticide, Herbicide and Fertilizer Management Plan*, 2005- Revised 2006, 2008). WGR Southwest Inc.

meet the applicable allocations. This proposed Order includes Provisions consistent with the TMDL waste load allocations and the Basin Plan implementation program. This proposed Order specifies monitoring and assessment requirements to implement these Provisions. The establishment of Water Quality Based Effluent Limits expressed as iterative BMPs to achieve the Waste Load Allocation (WLA) compliance schedule is appropriate and is expected to be sufficient to achieve the WLA specified in the TMDL.

The proposed Order requires the Permittee to continue or initiate implementation of control programs for pollutants that have been identified to cause or contribute to exceedances of water quality standards and potential impairment of beneficial uses. The proposed permit requires the Permittee to submit a Mercury/Methylmercury Control Program, Low Dissolved Oxygen Plan, abd an updated Pesticide Plan The proposed permit requires continued sampling, implementation of BMPs, and assessment of the effectiveness of the BMPs to ensure that they are performing to the MEP.

The Central Valley Water Board is currently in the process of developing TMDLs for listed water bodies within the Region. The proposed Order includes Provisions consistent with the TMDL waste load allocations, the need to developed TMDLs for impaired waterbodies, and the Basin Plan implementation program. The Permittee should continue to implement actions and/or assessments to address water quality impairments. Once the Central Valley Water Board and U.S. EPA approve TMDLs, the proposed Order may be reopened to incorporate provisions to be consistent with waste load allocations established under the TMDLs.

The CWA Section 303(d) (2010 Integrated Report) Listed Waterbodies in the Port include the following. These impairments are based on identified exceedances of water quality standards.

Waterbody	Reach	Estimated Size affected	Pollutant/Stressor(s)
Delta Waterways	Eastern Portion	2972 acres	Chlorpyrifos (TMDL) DDT Diazinon (TMDL) Invasive Species Group A Pesticides Mercury Toxicity of Unknown Origin
Delta Waterways	Southern Portion	3125 acres	Chlorpyrifos (TMDL) DDT Diazinon (TMDL) Electrical Conductivity Group A Pesticides Invasive Species Mercury

Waterbody	Reach	Estimated Size affected	Pollutant/Stressor(s)
			Toxicity of Unknown Origin
Delta Waterways	Stockton Ship Channel	1,603 acres	Chlorpyrifos (TMDL) DDT Diazinon (TMDL) Dioxin Invasive Species Furan Compounds Group A Pesticides Mercury Low Dissolved Oxygen (TMDL) Pathogens PCBs (Polychlorinated Biphenyls) Toxicity of Unknown Origin

TMDLs for these water bodies are in various stages of completion. NPDES permits must be consistent with approved TMDL waste load allocations. This Order implements control programs developed to attain waste load allocations.

The Central Valley Water Board Toxic Hot Spots Clean-up Plan (California Water Code section 13394) identified the following hot spots that are applicable to this discharge:

a. Mercury in the Delta; and
b. Diazinon and Chlorpyrifos in the Delta; and
c. Dissolved oxygen in the San Joaquin River at City of Stockton

The California Water Code section 13395 requires the reevaluation of waste discharge requirements for dischargers who have discharged pollutants causing all or part of the toxic hot spot. The waste discharge requirements must be revised to include requirements that “prevent the maintenance or further pollution of existing toxic hot spots.” Further “(t)he Regional Water Board may determine it is not necessary to revise a waste discharge requirement only if it finds that the toxic hot spot resulted from practices no longer being conducted by the discharger... or that the discharger’s contribution to the creation or maintenance of the toxic hot spot is not significant.” Requirements to prevent the creation of new or maintenance of existing

toxic hot spots are included with the provisions to address the 303(d) listings for these waterbodies.

Finding No. 84 of the proposed Order states: "CWA Section 303(d) and 40 CFR130.7 require states to identify water quality-impaired water bodies and pollutants of concern, and develop Total Maximum Daily Loads (TMDLs). A TMDL is a quantitative assessment of the total pollutant load that can be discharged from all sources each day while still meeting water quality objectives. The Central Valley Water Board is currently in the process of developing TMDLs for listed water bodies within the Region. Prior to TMDLs being adopted and approved, Permittees must implement actions to address their contribution to the water quality impairments. Once the Central Valley Water Board and U.S. EPA approve TMDLs, this Order may be amended to incorporate provisions consistent with waste load allocations established under the TMDLs."

Provision D.4.d. of the proposed Order requires the Permittee revise their SWMP to comply with regional or watershed-specific requirements, and/or waste load allocations developed and approved pursuant to the process for the designation and implementation of TMDLs for impaired water bodies.

V. STORM WATER MANAGEMENT PLAN

Federal regulations (40 CFR 122.26(d)(2)(iv)) provide that, "*A proposed management program covers the duration of the permit. It shall include a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program."*

As part of their application for permit renewal, the Permittee has submitted a draft SWMP describing the framework for management of storm water discharges during the term of this permit. The draft SWMP represents an improvement over the previous SWMP because it incorporates new and enhanced control measures and performance standards. The draft SWMP provides the goals and objectives, legal authorities, source identification process, funding sources, best management practices (BMPs) evaluation and improvement process, approach for effectiveness assessments of the programs, and a monitoring plan. The draft SWMP also includes specificity for each program element and control measures that identifies what actions are to be taken, the timeframe for the actions, the responsible parties and the data that needs to be collected in order to identify if the program is effective. The overall goals of the Permittee's SWMP are to a) reduce the degradation of waters of the State and Waters of the United States (U.S.) by urban runoff and protect their beneficial uses, and b) develop and implement an effective SWMP that is

well understood and broadly supported by regional stakeholders. The SWMP is an integral and enforceable component of the proposed permit.

The SWMP includes the following program components:

- Program Management
  - Legal Authority
  - Fiscal Analysis

- Programs Elements
  - Construction Program
  - Industrial and Commercial Program
  - Municipal Operations Program
  - Illicit/Illegal Discharge Program
  - Public Education and Outreach Program
  - Storm Water Planning and Development Standards

- Baseline Monitoring
  - Urban Discharge Monitoring
  - Receiving Water Monitoring
  - East Complex Retention Basin Monitoring
  - Port Owned Industrial Monitoring
  - Ship Loading and Unloading Monitoring
  - Water Column Toxicity Monitoring
  - Dry Weather Field Screening

- Water Quality Based Programs
  - Pesticide Plan
  - Low Dissolved Oxygen Plan
  - Total Mercury and Methylmercury Control Program

- Special Studies
  - Retention Basin Monitoring
  - BMP Effectiveness Studies

- Program Effectiveness Assessment and Reporting

Some of these program elements and the corresponding proposed permit requirements under those elements are discussed below.

A. Program Management

Program management includes planning, fiscal analysis, legal authority, staffing, inter and intra-agency coordination, and internal and external (i.e., compliance) reporting. The proposed permit requires submission of an Annual Work Plan by 1 April of each year. This plan provides the Permittee's proposed activities for the upcoming year beginning 1 July of current year and ending 30 June the following year. The proposed permit also requires submission of an annual report by 1 October of each year. The annual report documents the status of SWMP implementation and the Permittee's activities during the previous fiscal year, including the results of a qualitative and quantitative field level assessment of activities implemented by the Permittee, and the performance of tasks contained in the SWMP. The annual report includes a compilation of deliverables and milestones completed during the previous 12-month period, as described in the SWMP and annual work plan.

Fiscal Analysis

40 CFR §126.26(d)(2)(vi) requires MS4 permittees to include a fiscal analysis with their municipal storm water permit applications. The purpose of this fiscal analysis is to identify the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the storm water monitoring and management programs.

The permit requires a fiscal analysis to be included with the Port's annual work plans. The annual fiscal analysis includes (1) a budget summary of expenditures for implementing the SWMP, and (2) a description of the sources of funds for these expenditures.

According to the Port, the annual budget for storm water management and program implementation is currently approximately $700,000.

Legal Authority

40 CFR §122.26(d)(2)(i) requires large and medium MS4 permittees to include as part of their municipal storm water permit applications a demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts to, among other things, control pollutant discharges to storm sewer systems. The proposed MS4 permit requires the Permittee's legal authority to, at a minimum, accomplish the following:

- Control the contribution of pollutants in discharges of runoff associated with industrial and construction activities to storm sewer systems;

- Prohibit unauthorized non-storm water discharges where pollutants have not been reduced to the MEP;
- Prohibit and eliminate illicit connections to storm sewer systems;
- Control the discharge of spills, dumping, or disposal of materials other than storm water to storm sewer systems;
- Carry out inspections, surveillance, and monitoring necessary to determine compliance with local ordinances;
- Use enforcement mechanisms to obtain compliance with storm water ordinances;
- Require the use of BMPs to prevent or reduce the discharge of pollutants to storm sewer systems; and
- Require that treatment control BMPs be properly operated and maintained.

B. Construction Element

Legal Authority

Federal regulations (40 CFR §122.26(d)(2)(iv)(D)) provide that a proposed management program must include "*[a] description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system."*

Discussion of the Requirements in This Permit

As stated in the *California Storm Water Best Management Practice Handbook for Construction Activity* (BMP Handbook), "*Construction usually increases the amount of impervious area causing more of the rainfall to runoff, and increasing the speed at which runoff occurs. Unless properly managed, this increased runoff will erode natural and/or unprotected watercourses causing the watercourse to widen…Sedimentation can also contribute to accelerated filling of reservoirs, harbors, and drainage systems."*[11]

This Permit requires the continuation of the Permittee's review, inspection, and enforcement activities, and further requires the performance of an assessment to determine the effectiveness of these activities and identify any necessary modifications for continuous improvement.

[11] *California Storm Water Best Management Practice Handbook for Construction Activity*. 1993.

C. Industrial and Commercial Element

Legal Authority and Discussion

Federal regulations (40 CFR §122.26(d)(2)(iv)(C)) require large and medium MS4s to include, "*A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system.*
The program shall:

(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges; and

(2) Describe a monitoring program for storm water discharges associated with industrial facilities…"

The municipality is ultimately responsible for discharges from the MS4. Because industrial awareness of the program may not be complete, there may be facilities within the MS4 area that should be permitted under the General Industrial Permit but are not (i.e. non-filers). The Phase I regulations requirement for industries to obtain permit coverage for storm water discharges is largely based on Standard Industrial Classification (SIC) Codes. This classification system has been shown to be **incomplete** in identifying industries (which include commercial businesses) that may be significant sources of storm water pollution. In addition, the permitting authority may not have adequate resources to provide the necessary oversight of permitted facilities. Therefore, it is in the municipality's best interest to assess the specific situation and implement a commercial/industrial inspection and enforcement program to control the contribution of pollutants to the MS4 from all of these potential sources.

In the preamble to the 1990 regulations, the U.S. EPA clearly states the intended strategy for discharges of storm water associated with industrial activity:

"Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system."

The U.S. EPA also notes in the preamble that *"municipalities will be required to meet the terms of their permits related to industrial dischargers*."

Similarly, in the U.S. EPA's Guidance Manual[10] (Chapter 3.0), it is specified that MS4 applicants must demonstrate that they possess adequate legal authority to:

- Control construction site and other industrial discharges to MS4s;
- Prohibit illicit discharges and control spills and dumping;
- Carry out inspection, surveillance, and monitoring procedures.[12]

The document goes on to explain that *"control"*, in this context means not only to require disclosure of information, but also to *limit, discourage, or terminate* a storm water discharge to the MS4. Further, to satisfy its permit conditions, a municipality may need to impose additional requirements on discharges from permitted industrial facilities, as well as discharges from industrial facilities and construction sites *not* required to obtain permits.

In the same Guidance Manual[13] (Chapter 6.3.3), it is stated that the municipality is ultimately responsible for discharges from their MS4. Consequently, the MS4 applicant must describe how the municipality will help the U.S. EPA and authorized NPDES States to:

- Identify priority industries discharging to their systems;
- Review and evaluate storm water pollution prevention plans (SWPPPs) and other procedures that industrial facilities must develop under general or individual permits;
- Establish and implement BMPs to reduce pollutants from these industrial facilities (or require industry to implement them); and
- Inspect and monitor industrial facilities discharging storm water to the municipal systems to ensure these facilities are in compliance with their NPDES storm water permit, if required.

Recognizing that the Permittee is ultimately responsible for the quality of storm water discharges from the MS4, the Permittee must effectively regulate industrial/commercial facilities and activities to maintain compliance with their stormwater ordinances by continuing implementation of their current programs and enhancing them, as needed, based on effectiveness assessments.

It may be necessary to update existing ordinances and other legal mechanisms if they do not provide sufficient legal authority to implement the above components as required by the regulations.

Discussion of Requirements in This Permit

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[12] *Guidance Manual For the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems* - U.S. EPA -November 1992

[13] *Id.*

This Permit requires the continuation of the Permittee's inspection, response and enforcement activities at priority commercial/industrial facilities and coordination with the Central Valley Water Board at facilities covered under the Industrial General Permit. The Permit also requires the performance of an assessment to determine the effectiveness of these activities and identify any necessary modifications for continuous improvement.

Recognizing the dual coverage envisioned by the federal regulations[14], and suggested partnership between local and State authorities, this Permit requires the Permittee to coordinate with State activities for the implementation of the General Industrial Activities Storm Water Permit (General Industrial Permit). The goal is to control industrial sources and other sources not specifically covered under Phase I storm water regulations but identified as significant contributors of pollutants by the municipalities through their identification and prioritization studies. The net result should be a better and improved coordinated program with greater impact on limiting and eliminating (as a final goal) the contribution of pollutants to the receiving water while maintaining and/or restoring the capacity of the receiving water to sustain the beneficial uses without impairments.

Based on the dual coverage and partnership approach between the permitting authority and municipalities that the U.S. EPA envisioned in the storm water regulations[15,16], and in order to best use limited resources at the State and local levels, the Permit includes improvements requiring the Permittee to: (i) Control the storm water discharges associated with industrial activities and other commercial facilities identified as significant contributors of pollutants; and (ii) Assist the Central Valley Water Board in implementing the general permit for industrial activities.

This approach is consistent with the nationwide approach used by the U.S. EPA in issuing *second term* MS4 permits.[17] Also, this approach is consistent with other MS4 permits issued in California: San Diego, Santa Clara, and Los Angeles permits. The education and outreach should be continued under the Public Education program.

[14] Federal Register Vol. 55, No 222, pp. 48000; U.S. EPA Storm Water Phase II Compliance Assistance Guide, 2000, pp. 4-32 and 5-11, where it clarifies the dual responsibility

[15] Letter dated December 19, 2000, from Alexis Strauss, Director, Water Division, U.S. EPA Region IX, to Dennis Dickerson, Executive Officer, Regional Water Quality Control Board-Los Angeles Region.

[16] Letter dated April 30, 2001, from Alexis Strauss, Director, Water Division, U.S. EPA Region IX, to Honorable Stephen Horn, U.S. House of Representatives

[17] MS4 NPDES Permits issued to Palm Beach County, Broward County, Sarasota County, Florida, Tulsa, Oklahoma, Denver, Colorado.

D. Municipal Operations Element

Legal Authority and Discussion

Federal regulations (40 CFR §122.26(d)(2)(iv)(A)(1,3,4,5,and 6)) require MS4 permittees to develop a program to reduce the discharge of pollutants from the MS4 to the MEP for all urban land uses and activities, including municipal areas and activities.

The Permittee is required to update and continue to implement a Municipal Operations Program Element in its SWMP to effectively prohibit non-storm water discharges and prevent or reduce pollutants in runoff from all municipal land use areas, facilities, and activities to the MEP. The permit requirements for the Municipal Element are intended to provide a framework for the Permittee to meet the MEP standard. The specific requirements are too numerous to summarize here. Please see Provision 11 of the permit for a complete listing of these requirements.

Discussion of the Requirements in This Permit

This Permit requires the continuation of the Permittee's efforts from the previous permit term to control stormwater pollution resulting from the operation and maintenance of permittee-owned land use areas, facilities, and activities. The Permit further requires the performance of an assessment to determine the effectiveness of these activities and identify any necessary modifications for continuous improvement.

E. Illicit Discharge Detection and Elimination Element

Legal Authority and Discussion

Federal regulations (40 CFR §122.26(d)(2)(iv)(B)) state that large and medium MS4s must include, *"[a] proposed management program shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.*" The regulations state further that a permittee must include in its proposed management program "*[a] description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system...*"[18]

During dry weather, much of the discharge to storm drain systems consists of wastes and wastewater from non-storm water sources. A significant amount of these discharges may be from illicit discharges, illicit connections, or both. Illicit discharges and connections may occur either through direct connections, such as deliberate or

[18] 40 CFR 122.26(d)(2)(iv)(B)(1).

mistaken piping, or through indirect connections, such as dumping, spillage, subsurface infiltration, and wash down.

The Permittee is required to update and continue to implement an Illicit Discharge Detection and Elimination Program component of the SWMP to actively seek and eliminate illicit discharges and connections to the MEP.

Discussion of Requirements in This Permit

This Permit requires the continuation of the Permittee's inspection, response, and enforcement activities, and further requires the performance of an assessment to determine the effectiveness of these activities and identify any necessary modifications for continuous improvement.

F. Public Education and Outreach Program (Collectively Public Outreach Program)

Legal Authority and Discussion

Federal regulations [40 CFR §122.26(d)(2)(iv)(A)(6)] provide that the proposed management program for large and medium MS4s include, "[a] *description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities."* These regulations [40 CFR §122.26(d)(2)(iv)(B)(6)] also provide that the proposed management program for large and medium MS4s include, "[a] *description of education activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."*

To satisfy the Public Outreach Program, the Permittee needs to: (i) Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local water bodies and the steps that can be taken to reduce storm water pollution; and (ii) Determine the appropriate BMPs and measurable goals for this minimum control measure.

Discussion of Requirements in This Permit

Implementation of a Public Outreach Program is a critical BMP and a necessary component of a storm water management program. The State Board Technical Advisory Committee "*recognizes that education with an emphasis on pollution*

prevention is the fundamental basis for solving nonpoint source pollution problems." The U.S. EPA Phase II Fact Sheet 2.3 finds that "[a]*n informed and knowledgeable community is critical to the success of a storm water management program since it helps insure the following: (i) greater support for the program as the public gains a greater understanding of the reasons why it is necessary and important, and (ii) greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.*"[19]

Furthermore, the public can provide valuable input and assistance to a municipal storm water management program and should play an active role in the development and implementation of the program. An active and involved community is essential to the success of a storm water management program.

The Permittee should continue its educational storm water and urban runoff outreach programs. According to the U.S. EPA, materials and activities should be relevant to local situations and issues, and incorporate a variety of strategies to ensure maximum coverage.[20] To help address local situations and sources of specific pollutants, the Public Outreach Program requires specific programs for targeted communities, for example, ethnic groups, retail gasoline outlets (RGOs), and restaurants, that may not be reached by or understand existing storm water educational materials. In an effort to reach these groups the Public Outreach Program must require the development of a strategy to provide outreach information including bilingual materials to target ethnic communities. The U.S. EPA encourages partnerships and cooperation.[21] The proposed permit requires coordination between the Permittee and other MS4 permittees. This requirement will ensure that the Permittee is apprised of the most efficient and effective program. It is generally more cost-effective to have numerous operators coordinate to use an existing program than all developing their own local programs. Furthermore, directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts is recommended.[22] The next step in this targeted outreach program is education of specific businesses to facilitate employee compliance. Therefore, the permit requires implementation of a business outreach program to educate management and employees at prioritized businesses about storm water regulations. Also, a non-regulatory business assistance program would encourage small businesses that lack access to the expertise necessary to comply with storm water regulations and to implement pollution prevention measures. The business assistance program is not a requirement; however, its implementation is encouraged.

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[19] *Storm Water Phase II Final Rule - Public Education and Outreach Minimum Control Measure.* U.S. EPA Fact Sheet 2.3, January 2000.
[20] Phase II Fact Sheet 2.3
[21] *Id.*
[22] Phase II Fact Sheet 2.3

The Permittee is required to continue implementing its Public Outreach Program using appropriate media to: (1) measurably increase the knowledge of target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment.

The Permittee is also required to update and continue to implement the Public Outreach Component of its SWMP to educate the public and encourage their participation in the implementation of the SWMP to the MEP.

G. Water Quality-Based Programs

Provision D.28 pertains to pollutants of concern, including those for which TMDLs are being developed or implemented.

Legal Authority

The following legal authority applies to provision D.28

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.44(d)(1) requires NPDES permits to include any requirements necessary to, "[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality." However, courts have held that MS4 discharges need not strictly comply with water quality standards. (*See Defenders of Wildlife v. Browner,* 191 F.3d 1159, 1165 (9th Cir. 1999.) Further, the State Water Board has clearly held, when reviewing the template permit language used for the MS4 Permits, that:

> "we point out that our language, similar to U.S. EPA's permit language discussed in the *Browner* case, does not require strict compliance with water quality standards. Our language requires that storm water quality management plans be designed to achieve water quality standards. Compliance is to be achieved over time, through an iterative approach requiring improved BMPs."

(*See* SWRCB WQ Order 2001-15 at 7 (emphasis added).)

Federal NPDES regulation 40 CFR §122.44(d)(1)(i) requires NPDES permits to include limitations to, "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an

excursion above any State water quality standard, including State narrative criteria for water quality." However, these limitations need not be numeric effluent limitations and may be BMP-based. 40 CFR §122.44(k).

Basin Plan Requirements: Chapter IV. Control Action Considerations of the State Water Board, of the Region's Water Quality Control Plan (Basin Plan) *Urban Runoff Policy* requires;

a. Subregional municipal and industrial plans are required to assess the impact of urban runoff on receiving water quality and consider abatement measures if a problems exits; and

b. Effluent limitations for storm water runoff are to be included in NPDES permits where it results in water quality problems.

Stormwater permits include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives. In the first phase, the Central Valley Water Board required implementation of technically and economically feasible control measures to reduce pollutants in stormwater to the MEP. If this first phase does not result in attainment of water quality objectives, the Central Valley Water Board will consider permit conditions that might require implementation of additional control measures. For example, the control measures required as a result of TMDLs may go beyond the measures required in the first phase of the program.

General Strategy for Sediment-Bound Pollutants (Total Mercury, methylmercury, legacy pesticides)

The control measures for total mercury and methylmercury are intended to implement the urban runoff requirements stemming from TMDLs for these pollutants for the Central Valley Water Board. The total mercury/methylmercury TMDL is pending adoption by the State Water Board, the Office of Administrative Law, and U.S. EPA. The urban runoff management requirements for total mercury and methylmercury call for permit-term requirements based on an assessment of controls to reduce total mercury and methylmercury to the MEP, and that is the intended approach of the required provisions for all pollutants of concern. Many of the control actions addressing mercury will result in reductions of a host of sediment-bound pollutants, including legacy pesticides. The strategy for these pollutants is to use total mercury and methylmercury control guide decisions concerning where to focus effort, but implementation of the control efforts would take into account the benefits for controlling other pollutants of concern. Further, because many of the control strategies addressing these pollutants of concern are relatively untested, the Central Valley Water Board will implement control measures in the following modes:

1. Full-scale implementation throughout the region.

2. Focused implementation in areas where benefits are most likely to accrue.
3. Pilot-testing in a few specific locations.
4. Other: This may refer to experimental control measures, Research and Development, desktop analysis, laboratory studies, and/or literature review.

The logic of such categorization is that, as actions are tested and confidence is gained regarding level of experience and confidence in the control measure's effectiveness, the control measure may be implemented with a greater scope. For example, an untested control measure for which the effectiveness is uncertain may be implemented as a pilot project in a few locations during this permit term. If benefits result, and the action is deemed effective, it will be implemented in subsequent permit terms in a focused fashion in more locations or perhaps fully implemented throughout the Region, depending upon the nature of the measure. On the other hand there may be some control measures in which there is sufficient confidence, on the basis of prior experience, that the control action should be implemented in all applicable locations and/or situations. By conducting actions in this way and gathering information about the effectiveness and cost, the understanding about potential controls will be advanced and will increase the Central Balley Water Board's ability to perform an updated assessment of the suite of actions that will constitute MEP for the following permit term. In addition to implementing control measures, gathering the necessary information about control measure effectiveness is a vital part of what needs to be accomplished by the Permittee during this permit term. In the next permit term, control measures will be implemented on the basis of what is learned in this term, and thus, achieve iterative refinement and improvement will be achieved over time.

Background on Specific Provisions: Provisions D.26.a. (Pesticides Toxicity Control Program), D.26.b. (Low Dissolved Oxygen Program), and D.26.c. (Total Mercury and Methylmercury Control Program) contain both technology-based requirements to control pollutants and water quality-based requirements to prevent or reduce discharges of pollutants that may cause or contribute to violations of water quality standards to the MEP. Provision D.26.a. of the Permit incorporates requirements for the TMDLs that have been fully approved (Pesticides) and are effective for the Permittee. These TMDLs are for pesticide-related toxicity, specifically Diazinon and Chlorpyrifos, in urban creeks and the Delta Waterways. Provision D.26.b. of the Permit also incorporates requirements for the TMDL that has been fully approved (Dissolved Oxygen Impairment) and are effective for the Permittee. The goal of this TMDL is to maintain the existing dissolved oxygen water quality objectives in the San Joaquin River (between Turner Cut and Stockton) and the Delta Waterways. Additionally, Provision D.26.c. contains measures that address total mercury and methylmercury in compliance with the Basin Plan. The Central Valley Water Board has adopted a total mercury and methylmercury TMDL, but this TMDL is still pending approval by the State Water Board, the Office of Administrative Law, and U.S. EPA. The methylmercury TMDL includes requirements that would be consistent with this provision.

Where a TMDL has been approved, NPDES permits must contain effluent limitations and conditions consistent with the requirements and assumptions in the TMDL.[23] Effluent limitations are generally expressed in numerical form. However, U.S. EPA recommends that for NPDES-regulated municipal and small construction storm water discharges, effluent limitations should be expressed as BMPs or other similar requirements rather than as numeric effluent limitations. [24] Consistent with U.S. EPA's recommendation, this section implements Water Quality Based Effluent Limits (WQBELs) expressed as an iterative BMP approach capable of meeting the WLAs over time in accordance with the associated compliance schedule. The Permit's WQBELs include the numeric WLA as a performance standard and not as an effluent limitation. The WLA can be used to assess if additional BMPs are needed to achieve the TMDL Numeric Target in the waterbody.

1. Pesticides Toxicity Control Program

This Permit fulfills the Basin Plan amendments that the Central Valley Water Board adopted that establish Water Quality Objectives for Inland Surface Waters and Implementation Program for the TMDL for Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta Waterways (as identified in Appendix 42). The Water Quality Objectives for Inland Surface Waters and the Implementation Program requires the Permittee to minimize its own pesticide use, conduct outreach to others, and lead monitoring efforts if its discharges are causing or contributing to the impairment. If such contributions are demonstrated, control measures implemented by urban runoff management agencies (i.e., Permittee) and other entities (except construction and industrial sites) shall reduce pesticides in urban runoff to the MEP and the Permittee will use the included numeric WLAs as performance standards to determine if additional BMPs are needed to achieve the TMDL Numeric Target in the waterbody.

The Central Valley Water Board has adopted water quality objectives for:

- Diazinon: 160 nanograms per liter (ng/L or parts per trillion), one-hour average, not to be exceeded more than once in a three-year period and 100 ng/L, four-day average, not to be exceeded more than once in a three-year period, which apply to Sacramento-San Joaquin Delta Waterways (Delta Waterways) (Basin Plan);

- Chlorpyrifos: 25 ng/L, one-hour average, not to be exceeded more than once in a three-year period and 15 ng/L, four-day average, not to be exceeded

[23] 40 CFR §122.44(d)(1)(vii)(B)
[24] USEPA, 2002. Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs. p.4.

more than once in a three-year period, which apply to Delta Waterways (Basin Plan).

The Permittee must consider whether any proposed alternative to the use of diazinon or chlorpyrifos has the potential to degrade ground or surface water. If the alternative has the potential to degrade groundwater, alternative pest control methods must be considered. If the alternative has the potential to degrade surface water, control measures must be implemented to ensure that applicable water quality objectives and Central Valley Water Boards plans and policies are not violated, including the State Water Resources Control Board Resolution 68-16.

The TMDL is allocated to all urban runoff, including urban runoff associated with MS4s, Caltrans facilities, and industrial, construction, and institutional sites. The allocations are expressed in terms of diazinon and chlorpyrifos waste load allocations.

The Central Valley Water Board has also established in the Basin Plan the Loading Capacity (LC) for the Delta Waterways, WLAs, and Load Allocations (LA) for discharges to the Delta Waterways, which shall not exceed the sum (S) of one (1) as defined below:

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where:

C_D = diazinon concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.
C_C = chlorpyrifos concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.
WQO_D = acute or chronic diazinon water quality objective in µg/L.
WQO_C = acute or chronic chlorpyrifos water quality objective in µg/L.

Compliance with the WLA is required by 1 December 2011 (Basin Plan).

The Central Valley Water Board's Basin Plan requires dischargers of diazinon and chlorpyrifos to Delta Waterways to submit a management plan (i.e., Integrated Pest Management plan (IPM) that incorporates, at a minimum, BMPs, BMP implementation plan, effectiveness assessment, and schedule) that describes actions that will be taken to reduce diazinon and chlorpyrifos discharges and meet the applicable allocations.

The approved IPM plan, and any modifications to it, meets the requirements for a management plan as described in the Basin Plan.

Specific Provision D.26.a. Requirements

D.28.a. provisions fully implement the TMDL for Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta Waterways (as identified in Appendix 42). All D.28.a. provisions are stated explicitly in the implementation plan for this TMDL. The Permittee is encouraged to coordinate activities with the County Agriculture Commission and Extension Service, and other agencies, organizations, and interested stakeholders.

Provision D.26.a.i. is designed to insure that an integrated pest management (IPM) is adopted and implemented as policy by the Permittee. IPM is a pest control strategy that uses an array of complementary methods: natural predators and parasites, pest-resistant varieties, cultural practices, biological controls, various physical techniques, and pesticides as a last resort. If implemented properly, IPM is an approach that can significantly reduce or eliminate the use of pesticides. The implementation of an IPM program will be assured through training of municipal employees and the requirement that the Permittee only hire IPM-certified contractors.

Provision D.26.a.ii. directs the Permittee to conduct outreach to consumers at point of purchase and provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control. One way in which this can be accomplished is for the Permittee to participate in and provide resources for the “Our Water, Our World” program (www.ourwaterourworld.org) or a functionally equivalent pesticide use reduction outreach program. The “Our Water, Our World” program has developed a Web site with many resources, “to assist consumers in managing home and garden pests in a way that helps protect” the environment.

Provisions D.26.a.iii. is critical to the success of municipal efforts to control pesticide-related toxicity. Future permits must be based on an updated assessment of what is working and what is not. With every provision comes the responsibility to assess its effectiveness and report on these findings through the permit. The particulars of assessment will depend on the nature of the control measure.

Provision D.26.a.iv. requires that the Permittee (either individually or through cooperation and participation with other municipalities, agencies, and/or programs) track and participate in pesticide regulatory processes like the U.S. EPA pesticide evaluation and registration activities related to surface water quality, and the

California Department of Pesticide Regulation (DPR) pesticide evaluation activities. The goal of these efforts is to encourage both the state and federal pesticide regulatory agencies to accommodate water quality concerns within the pesticide regulation or registration process. Through these efforts, it could be possible to prevent pesticide-related water quality problems from happening by affecting which products are brought to market.

2. Low Dissolved Oxygen Program

The Central Valley Water Board adopted a basin plan amendment (Resolution No. R5-2005-0005) that meets the requirements of a TMDL for the 303(d) listing for Organic Enrichment/Low Dissolved Oxygen impairment in the Stockton Deep Water Ship Channel (DWSC). The goal of the Dissolved Oxygen (DO) control program is to achieve compliance with the Basin Plan DO water quality objectives in the DWSC.

a. The Basin Plan identified the DO water quality objectives in the San Joaquin River (Stockton DWSC). These objectives are 6.0 mg/L between Turner Cut and Stockton (1 September through 30 November); and 5.0 mg/L in all other Delta waters.

b. The low DO impairment in the DWSC is caused by the following three main contributing factors:

   i. Loads of oxygen demanding substances from upstream sources that react by numerous chemical, biological, and physical mechanisms to remove dissolved oxygen from the water column in the DWSC;

   ii. Geometry of the DWSC that impacts various mechanisms that add or remove dissolved oxygen from the water column, such that net oxygen demand exerted in the DWSC is increased; and

   iii. Reduced flow through the DWSC that impacts various mechanisms that add or remove dissolved oxygen from the water column, such that net oxygen demand exerted in the DWSC is increased.

c. Entities responsible for point and non-point sources of oxygen demanding substances and their precursors within the TMDL source area are required to perform oxygen demand and precursor studies by December 2008. These studies may be conducted by individual responsible entities or in collaboration with other entities. These studies must identify and quantify:

   i. sources of oxygen demanding substances and their precursors in the DO TMDL source area;

ii. growth or degradation mechanisms of these oxygen demanding substances in transit through the source area to the DWSC; and

iii. the impact of these oxygen demanding substances on DO concentrations in the DWSC under a range of environmental conditions and considering the effects of chemical, biological, and physical mechanisms that add or remove dissolved oxygen from the water column in the DWSC.

d. Within the Basin Plan Amendment, the Central Valley Water Board established the following waste load allocations:

i. Waste load allocations of oxygen demanding substances and their precursors for all NPDES-permitted discharges are initially set at the corresponding effluent limitations applicable on 28 January 2005.

ii. Waste load allocations and permit conditions for new or expanded point source discharges in the San Joaquin River Basin upstream of the DWSC, including NPDES and stormwater, will be based on the discharger demonstrating that the discharge will have no reasonable potential to cause of contribute to a negative impact on the dissolved oxygen impairment in the DWSC.

e. Alternate measures, as opposed to direct control, of certain contributing factors would be considered by the Regional Board if the alternate measures adequately address the impact on the dissolved oxygen impairment and do not degrade water quality in any other way.

f. Compliance with the waste load allocations for oxygen demanding substances and their precursors, and development of alternate measures to address non-load related factors will be required by 31 December 2011.

The Permittee was issued a Waste Discharge Requirements Order R5-2006-0078 for the West Complex Docks 14 and 15 Dredging Project, unrelated to its storm water discharges. This Order, which is not included or incorporated by reference into the MS4 permit, requires mitigation measures for DO due to dredging activities in the Deep Water Ship Channel.

a. Paragraph 3, Finding Number 62 of Order R5-2006-0078 states “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."

b. Provision Number 5. of Order R5-2006-0078 states "The Discharger shall comply with the Aeration Requirement, Attachment C, which specifies the 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 rates of oxygen is a violation of this Order."

To address the DO impairment and toxic hot spot identified in the Stockton Area waterways, the Port was required to monitor and assess the impacts from discharges on receiving water under Order R5-2006-0078. Low DO can cause physiological stress to aquatic organisms that result in adverse effects on survival, growth and reproduction. Low DO conditions of less than 5 mg/L in the San Joaquin River near Stockton have been cited as barriers to adult Chinook salmon migration. Dissolved oxygen levels must be maintained to protect the aquatic life in the waterways.

Specific Provision D.26.b. Requirements

D.28.b. provisions implement the TMDL for DO impairment in the DWSC. The Permittee is encouraged to coordinate activities with the City of Stockton, County of San Joaquin, California Department of Water Resources, U.S. Army Corp of Engineers, and other agencies, organizations, and interested stakeholders.

Provision D.26.b.i. The Permittee is required to conduct DO contribution studies to evaluate their contributions of oxygen demanding substances from storm water runoff to the DWSC. The Basin Plan defines oxygen demanding substances and their precursors as any substance or substances that consume, have the potential to consume, or contribute to the growth or formations of substances that consume or have the potential to consume oxygen from the water column.

Provision D.26.b.ii. The Permittee is currently issued unilateral DO monitoring requirements under Order R5-2006-0078, the Permittee shall use the data collected under that Order to assess and evaluate the Low Dissolved Oxygen Program effectiveness.

Provision D.26.b.iii. Coordinating efforts with other agencies operating aerators and conducting monitoring studies in the DWSC will provide effective and efficient

means to understanding and preventing the dissolved oxygen impairment in the DWSC.

Provision D.26.b.iv. The Permittee is required to conduct DO contribution studies to monitor and evaluate the effectiveness of existing BMPs on the control of oxygen demanding substances, and develop and evaluate additional BMPs, to reduce oxygen demanding substances from discharging into the DWSC. To meet the Basin Plan's WLAs compliance date of 31 December, 2011, and the Permittee is required to submit the plan no later than 1 September 2011 as an inclusion in the Permittee's annual report.

3. Total Mercury and Methylmercury Control Program

The Delta is impaired because of elevated levels of methylmercury in fish. The Delta is on the Clean Water Act 303(d) list for mercury and the State Water Resources Control Board has designated the Delta as a toxic hot spot under the Bay Protection and Toxic Hot Spot Cleanup Program. Mercury problems are evident region-wide. The main concern with mercury is that, like selenium, it bioaccumulates in aquatic systems to levels that are harmful to fish and their predators. Health advisories have been issued which recommend limiting consumption of fish taken from the Bay/Delta, tributaries to the Delta, and many lakes and reservoirs in the Central Valley. Concentrations of mercury in other water bodies approach or exceed National Academy of Science (NSA), U.S. EPA, and /or U.S. Food and Drug Administration (FDA) guidelines for wildlife and human protection. In addition to these concerns, fish-eating birds taken from some bodies of water in the Basins have levels of mercury that can be expected to cause toxic effects. Several bird kills in Lake Berryessa in the 1980s have been linked to mercury. (There is also concern for birds in the Delta, but no studies have been completed.)

To address the mercury impairments, the Central Valley Regional Water staff has been developed a mercury control TMDL for waterbodies on the 303(d) list. The Central Valley Water Board has adopted a Basin Plan amendment to the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin Delta Estuary (Resolution No. R5-2010-0043), which is pending approval by the State Water Board, the Office of Administrative Law, and U.S. EPA. U.S. EPA approval of the TMDL is expected in 2011, which is within the five year term of this Order.

Annual methylmercury loads in urban runoff in MS4 service areas within the Delta may be calculated by the following method or by an alternate method approved by the Executive Officer. The annual methylmercury load in urban runoff for a given

MS4 service are during a given year may be calculated by the sum of wet weather and dry weather methylmercury loads. To estimate wet weather methylmercury loads discharged by MS4 urban areas, the average of wet weather methylmercury concentrations observed at the MS4's compliance locations may be multiplied by the wet weather runoff volume estimated for all urban areas within the MS4 service are within the Delta. To estimate dry weather methylmercury loads, the average of dry weather methylmercury concentrations observed at the MS4's compliance locations may be multiplied by the estimated dry weather urban runoff volume in the MS4 service area within the Delta. This method is consistent with that used to develop load estimates in the methylmercury TMDL.

Specific Provision D.26.c. Requirements

The D.26.c. provisions implement the methylmercury TMDL and are consistent with the general approach for sediment-bound pollutants discussed above where the Central Valley Water Board seeks to build an understanding and level of certainty concerning pollution prevention measures and control actions by implementing actions in a phased approach. Implementation of those actions that prove effective will then be expanded, and others that are not effective may be scaled back or discontinued.

Provision D.26.c.i. Mercury is found in a wide variety of consumer products (e.g., fluorescent bulbs) that are subject to recycling requirements. These recycling efforts are already happening throughout the Region, and Provision D.28.c.i. requires promotion, facilitation and/or participation in these region-wide recycling efforts to increase effectiveness and public participation. Industrial and commercial entities will be required to divert mercury-containing waste products (e.g., gauges).

Provision D.26.c.ii. The Permittee is required to include mercury pollution prevention and control-related messages designed to reach commercial and industrial users or sources of mercury-containing products or emissions as part of the Public Outreach and Information Element of the Order. For public outreach (e.g., auto dismantlers) and municipal operations, the Permittee's mercury control programs are required to coordinate with the countywide universal waste (U-Waste) management strategy in compliance with the Department of Toxic Substances Control (DTSC) Universal Waste Rule (Reference Number: R-97-08, Effective Date: 02/08/02). The Permittee may participate with other organizations to develop programs to reduce or eliminate sources of mercury within the Permittee's urbanized area. The Permittee may coordinate with publicly owned treatment works and other agencies to develop cooperative plans and programs. Annual reporting is required to determine the effectiveness of these control programs.

Provision D.26.c.iii. This permit requires methylmercury monitoring, or coordinated monitoring with other entities in the area. The purpose of the monitoring required through this provision is to obtain seasonal information and to assess the magnitude and spatial/temporal patterns of methylmercury concentrations in urban runoff.

Provision D.26.c.iv. After the U.S. EPA approves the methylmercury TMDL, the Permittee is required to conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and to develop and evaluate additional BMPs, as needed, to reduce mercury and methylmercury discharges to the Delta and meet methylmercury WLAs. Control Studies will be implemented through a Control Study Workplan to be submitted nine months after the U.S. EPA has approved the methylmercury TMDL.

Provision D.26.c.v. After the U.S. EPA approves the Delta methylmercury TMDL and if the Permittee is determined to be a source of mercury, the Permittee will be required to complete an Exposure Reduction Strategy if it is determined the Port is a contributor based on their annually estimated loads, either individually or cooperatively with other dischargers. While methylmercury and mercury source reductions are occurring, the Central Valley Water Board recognizes that activities should be undertaken to protect those people who eat Delta fish by reducing their methylmercury exposure and its potential health risks. The Exposure Reduction Program (MERP) is not intended to replace timely reduction of mercury and methylmercury loads to Delta waters. Activities will require collaboration with public health agencies to develop an MERP strategy; submission of an Exposure Reduction Workplan; implementation of the workplan and reporting. Specific elements of the workplan require: (1) community-driven activities to reduce mercury exposure, (2) raising awareness, (3) integrating community-based organizations into the MERP process, (4) identifying resources, (5) expand upon and create new activities or materials, and (6) program effectiveness. Specific timelines are identified based upon the U.S. EPA TMDL approval date.

H. Strom Water Planning and Development Standards

Legal Authority and Discussion

Federal law (33 USC §1342(p)(3)(B)(iii)) and regulations (40 CFR §122.26 and §122.34(a)) require that pollutants in storm water be reduced to the MEP. The U.S. EPA's definition is intentionally broad to provide maximum flexibility in MS4 permitting and to give municipalities the opportunity to optimize pollutant reductions on a program-to-program basis.[25] The definition of MEP has generally been applied to mean implementation of economically achievable management practices. Because storm water runoff rates can vary from storm to storm, the statistical probabilities of rainfall or runoff events become economically significant and are central to the control of pollutants through cost effective BMPs. Further, it is recommended that storm water BMPs be designed to manage both flows and water quality for best performance.[26] It is equally important that treatment BMPs, once implemented, be routinely maintained.

This Permit requires the permittee to reduce pollutants and runoff flows from new development and redevelopment to the MEP. The MEP standard involves applying BMPs that are effective in reducing the discharge of pollutants in storm water runoff. If, from a list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. Alternatively, if a permittee employs all applicable BMPs, except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires the permittee to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive. MEP is the result of the cumulative effect of implementing, continuously evaluating, and making corresponding changes to a variety of technically and economically feasible BMPs that ensure the most appropriate controls are implemented in the most effective manner.

The U.S. EPA, based on the 1983 NURP, supports the first half-inch of rainfall as generating first flush runoff.[27] First flush runoff is associated with the highest pollutant concentrations, but not pollutant load. The U.S. EPA considers the first flush treatment method, the rainfall volume method, and the runoff capture volume method as common approaches for the sizing of water quality BMPs.

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[25] *Storm Water Phase II Final Rule* – Pre-Federal Register Version, p 87 (U.S. EPA 1999). See U.S. EPA's discussion in response to challenges that the definition is sufficiently vague to be deemed adequate notice for purposes of compliance with the regulation.

[26] *Urban Runoff Pollution – Summary Thoughts* – The State of Practice Today and For the 21st Century. Wat. Sci. Tech. 39(2) pp. 353-360. L.A. Roesner (1999)

[27] *A Watershed Approach to Urban Runoff: Handbook for Decisionmakers*, Terrene Institute and U.S. EPA Region 5 (1996). See discussion on sizing rules for water quality purposes, p 36.

On 5 October 2000, the State Water Board adopted Order WQ 2000-11[28] concerning the use of Standard Urban Storm Water Mitigation Plans (SUSMPs) in municipal storm water permits for new developments and significant redevelopments by the private sector. The precedent-setting decision largely sustained the LA Regional Board SUSMPs. The State Board amended the SUSMP to limit its application to discretionary projects as defined by CEQA, eliminated the category for projects in environmentally sensitive areas, and set aside the requirement for retail gasoline outlets to treat storm water until a threshold is developed in the future. In addition, the State Board articulated its support for regional solutions and mitigation banking. The State Water Board recognized that the decision includes significant legal or policy determinations that are likely to recur (Gov. Code §11425.60). Due to the precedent setting nature of WQ 2000-11, the proposed permit must be consistent with applicable portions of the State Water Board's decision and include SUSMPs, referred to in the proposed permit as Development Standards. More detailed information is available at the Los Angeles Water Board's website:
www.swrcb.ca.gov/rwqcb4/html/programs/stormwater/la_ms4_final.html

Discussion of Requirements in This Permit

This component of the Permit requires the Permittee to update and continue to implement the Planning and New Development Element of its SWMP to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. The Permit requires the continued implementation of the Permittee's Development Standards during the development plan review process.

To address low impact development (LID), this Permit requires the Permittee to revise their Development Standards and associated technical guidance (a.k.a. *Stormwater Quality Design Manual*).

The Permittee is also required to revise applicable statues, permits, contracts or similar agreements following amendment of Development Standards.

Finally, the Permit requires the performance of an assessment to determine the effectiveness of the Element activities and identification of any necessary modifications for continuous improvement.

[28] *State Water Board Order WQ 2000-11*: SUSMP; Memorandum from Chief Counsel to Regional Board Executive Officers, (December 26, 2000) discusses statewide policy implications of the decision.

VI. MONITORING AND REPORTING PROGRAM

Legal Authority

Federal regulations require the following: (1) quantitative data from representative outfalls designated by the permitting authority, which shall designate between five and ten outfalls or field screening points as representative of the commercial, residential, and industrial land use activities of the drainage area contributing to the MS4 (40 CFR §122.26(d)(2)(iii)(A)); (2) estimates of the annual pollutant load of the cumulative discharges to waters of the United States from all identified municipal outfalls and the event mean concentration of the cumulative discharges for constituents of concern (COCs) (40 CFR §122.26(d)(2)(iii)(B)); (3) estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of SWMP implementation (40 CFR §122.26(d)(2)(v)); and (4) the Discharger to submit an annual report that identifies, among other things, water quality improvements or degradation. Items 1-3 are required as Part 2 of the initial application. However, since they are needed to evaluate the SWMP, they are being incorporated into this Order.

A. Urban Discharge Monitoring

There are five urban discharge monitoring stations at the East Complex stations D-2, D-10and the retention basin outfall. The West Complex has a single discharge point that is monitored at a pump station at the southwest corner of the island. These stations account for every urban discharge outfall at the Port. The goals of this monitoring are to act as a performance standard to monitor long-term trends in urban storm water quality, and provide data for estimating pollutant loads discharged to receiving waters. If additional sample station locations are needed, they shall be established under the direction of Board staff, and a description of the stations shall be attached to this MRP. Urban discharge monitoring shall be consistent with the frequency and schedule shown on Table F. Sample collection and analysis shall follow standard U.S. EPA protocols. Each year, samples shall be collected **during three qualifying storm events** (40 CFR §122.26(d)(2)(iii)(A)(*1*)); and **two during the dry season**, at a minimum.

The COCs for the different monitoring stations vary depending on the known pollutant sources and the size of the drainage area. Monitoring stations with large drainage areas generally have more COCs to be analyzed. Urban discharges are monitored during the same three wet season storm events per year as receiving water.

The proposed permit requires the Permittee to conduct upstream source identification within its storm sewer system if urban runoff monitoring results in a detection of a

constituent above applicable water quality objectives. This monitoring would occur during subsequent qualifying storm events.

B. Receiving Water Monitoring

The receiving water monitoring component of the Monitoring and Reporting Program (MRP) includes three monitoring stations in the San Joaquin River, one in the DWSC, and one in burns Cutoff. Stations are located either upstream and downstream of the Port's storm sewer discharges, depending on the time relative to the tidal cycle.

All receiving water samples shall be grab samples, collected at mid-depth, in mid-stream of the receiving water. Receiving water sampling may be postponed or eliminated if hazardous weather and/or river flow conditions prevent safe access to sampling location. Receiving water monitoring shall be taken after discharges from D-2, and D-10, RB (if discharging), and WC have occurred and shall be consistent with the frequency and schedule shown on Table F. Attachment B shows the approximate locations of the receiving water sampling stations. Sample collection and analysis shall follow standard U.S. EPA protocols. Each year, samples shall be collected **during three qualifying storm events** and **two dry weather monitoring events,** at a minimum.

C. Ship Loading and Unloading Monitoring

The Permittee and its tenants are engaged in the shipping, loading and unloading (vessels and trains) of bulk commodities. Because handling bulk commodities at the Port may result in pollutants (e.g., fertilizers and livestock feed) being spilled on the ground and discharged to adjacent water bodies, or being directly spilled into those water bodies, monitoring during these activities is required.

During all bulk material loading and unloading events, the Permittee shall conduct visual observations of these activities to monitor the effectiveness of spill prevention BMPs. The Permittee shall also notify ship operators from discharging vessel equipment wash water and deck wash-down water must be in compliance with the U.S. EPA 2008 NPDES Vessel General Permit. Documentation of monitoring activities shall include the date and time of inspection, the name and title of the inspector, the dock where material transfer occurred, the material and quantity transferred, whether or not any material was spilled, a description of efforts to cleanup any spills, and weather conditions.

D. Method Detection Monitoring

Minimum Levels (MLs) listed in Appendix 4 of the *State Board Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed Bays, and Estuaries of California, 2000* (SIP) represent the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and

the absence of any matrix interferences. MLs must be incorporated into all water quality monitoring programs to detect priority toxic pollutants. The MLs are the only established monitoring methodologies that take into consideration recent improvements in chemical analytical methods. If MLs are not used in the storm water program, concentrations of concern of priority toxic pollutants may not be detected. Detection and control of toxic pollutants in surface waters is necessary to achieve the CWA's goals and objectives.[29]

Numeric criteria for toxic pollutants are necessary to evaluate the adequacy of existing and potential control measures to protect aquatic ecosystems and human health.[30] Also, using MLs will provide quantifiable data that is necessary to better assess water quality and to develop Waste Load Allocations and Load Allocations for TMDLs. Furthermore, non-detects cannot be used to accurately determine mass loadings. The criteria established in the CTR are legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the CWA.[31] CWA section 402(p)(3)(B)(iii) gives USEPA and states the authority to incorporate appropriate water quality-based effluent limitations in NPDES permits for discharges from MS4s.[32]

E. Water Column Toxicity Monitoring

Studies conducted by Regional Board staff found toxicity in the San Joaquin River and the DWSC. Toxicity monitoring is therefore required by this Order.[33]

Toxicity testing is used to assess the impact of storm water pollutants on the overall quality of aquatic systems.[34] It can be a useful tool for storm water managers. The Center for Watershed Protection rated toxicity testing as a "very useful" indicator for assessing municipal storm water programs. Toxicity testing can also be used to evaluate the effectiveness of storm water BMPs and other storm water pollution reduction measures.[35] Managers can use the results of toxicity testing to identify areas of high concern and to establish priority locations for BMPs. Furthermore, Toxicity Identification Evaluations (TIEs) and Toxicity Reduction Evaluations (TREs) can be used to identify specific pollutants and their sources so that management actions can be more specifically prioritized.

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[29] 65 Fed. Reg. 31683
[30] *Id.*
[31] 65 Fed. Reg. 31682
[32] 65 Fed. Reg. 31703
[33] Review of the City of Stockton Urban Stormwater Runoff, Aquatic Life Toxicity Studies Conducted by the CVRWQCB, DeltaKeeper and the University of California, Davis, Aquatic Toxicology Laboratory, between 1994 and 2000. G. Fred Lee, PhD, DEE and Anne Jones-Lee, PhD.
[34] Center for Watershed Protection, Environmental Indicators to Assess Stormwater Control Programs and Practices (1996).
[35] Ibid.

Toxicity testing using multiple species is needed to provide a complete assessment of the causes of toxicity in storm water.[36] Reliance on single species tests may not provide an accurate assessment of toxicity.[37] Because different species vary in their sensitivity to contaminants, tests with multiple species are needed to determine if other contaminants are present at toxic concentrations.[38] Specifically, an organism that is sensitive to pesticides, which have been found to be important factors in the toxicity of storm water from other watersheds, should be used.[39] USEPA recommends the use of the *Ceriodaphnia dubia* (water flea) reproduction and survival test for the measurement of receiving water toxicity. The water flea is one of the most sensitive aquatic species to diazinon.

Furthermore, the toxicity component of the Monitoring Program should include TIE procedures so that potential COCs can be confirmed and others can be discounted. TIEs are needed to prioritize management actions.

The Permittee is required to follow the U.S. EPA's short-term chronic toxicity monitoring and reporting according to the Administrative Order On Consent (Docket No. CWA-309(a)-09-019 for Toxicity Monitoring (paragraph 47). The Permittee is required to collect samples at receiving water monitoring stations R-1 through R-5, the West Complex pump station (Station WC), and the East Complex Retention Basin (when it discharges to the San Joaquin River) for three qualifying storm events, and two dry weather monitoring events (if a discharge is occurring) separated by 7 days of dry weather. The sampling frequency shall be conducted during two non-consecutive years during the permit term.

VII. SPECIAL STUDIES

G. Retention Basin Studies

The Permittee is required to update and submit the Retention Basin Monitoring Work Plan, as part of the SWMP, to reflect additional monitoring of the following constituents to be monitored: total mercury, pyrethroids and methylmercury in water; pyrethroids and total mercury in sediment and water. Constituents that shall continue to be sampled in the retention basin include: total suspended solids (TSS), bacteria, turbidity, total dissolved solids (TDS) and organophosphate pesticides (chlorpyrifos and diazinon). The work plan is designed to perform influent, effluent, and sediment chemistry/toxicity monitoring of the retention basin. Monitoring shall be conducted during at least two wet seasons and two dry seasons within the five year period. Monitoring shall be designed to evaluate the effectiveness of the retention basin in removing pollutants of concern. The Permittee may propose a joint study with other

[36] Bay, Jones, Schiff. Study of the Impact of Stormwater Discharge on Santa Monica Bay (1999).
[37] Center for Watershed Protection
[38] Bay, et al.
[39] Bay, et al.

Central Valley MS4 permittees if they can demonstrate that data collected in other jurisdictions is applicable to retention basins in the Permittee's jurisdictions.

H. BMP Effectiveness Studies

The Permittee is required to conduct studies to evaluate the effectiveness of source or treatment control BMPs. The objective of these studies will include the following:

1. Monitor the reduction of pollutants of concern in storm water including, but not limited to, pathogen indicators, nutrients, heavy metals, mercury and pesticides from a minimum of one BMP. Monitoring will be continued until the effectiveness of the BMP can be determined;

2. Evaluate the requirements for and installation and maintenance cost of each BMP; and

3. Develop recommendations for appropriate BMPs for the reduction of pollutants of concern in storm water at the Port.