

**California Regional Water Quality Control Board
San Diego Region**

**Waste Discharge Requirements for
Discharges from the
Municipal Separate Storm Sewer Systems (MS4s)
Draining the County of Riverside, the Incorporated
Cities of Riverside County, and the Riverside
County Flood Control and Water Conservation
District within the San Diego Region**

**Order No. R9-2010-0016
NPDES No. CAS0108766**

November 10, 2010

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

9174 Sky Park Court, Suite 100, San Diego, California 92123-4340
Phone • (858) 467-2952 • Fax (858) 571-6972
<http://www.waterboards.ca.gov/sandiego>

To request copies of the Riverside County Municipal Storm Water Permit, please contact Ben Neill, Water Resources Control Engineer at (858) 467 – 2983, bneill@waterboards.ca.gov

Documents also are available at: <http://www.waterboards.ca.gov/sandiego>

**Waste Discharge Requirements for
Discharges from the
Municipal Separate Storm Sewer Systems (MS4s)
Draining the County of Riverside, the Incorporated Cities of
Riverside County, and the Riverside County Flood Control
and Water Conservation District within the San Diego Region**

Adopted by the
California Regional Water Quality Control Board
San Diego Region
on
November 10, 2010

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340
Telephone (858) 467-2952**

STATE OF CALIFORNIA

ARNOLD SCHWARZENEGGER, Governor
LINDA S. ADAMS, Agency Secretary, California Environmental Protection Agency



**California Regional Water Quality Control Board
San Diego Region**

Grant Destache, <i>Vice Chair</i>	Industrial Water Use
Eric Anderson	Irrigated Agriculture
Wayne Rayfield	Water Quality
George Loveland	Water Supply
Marc Luker	Undesignated (Public)
Gary Strawn	Recreation / Wildlife
Bill Green	Water Quality

David W. Gibson, *Executive Officer*
James Smith, *Assistant Executive Officer*

This permit was prepared under the direction of

David T. Barker, P.E., *Supervising Water Resource Control Engineer, Surface Water Basins Branch*
Chiara Clemente, *Senior Environmental Scientist, Northern Watershed Unit*

by

Benjamin Isaac Neill, *Water Resource Control Engineer*
Chad Lörtscher Lofen, *Environmental Scientist*
Wayne Chiu, P.E., *Water Resource Control Engineer*

Table of Contents

FINDINGS:

A. BASIS FOR THE ORDER.....	1
B. REGULATED PARTIES.....	2
C. DISCHARGE CHARACTERISTICS.....	3
D. RUNOFF MANAGEMENT PROGRAMS	7
E. STATUTE AND REGULATORY CONSIDERATIONS	13
F. PUBLIC PROCESS	17

DISCHARGE and LEGAL PROVISIONS

A. PROHIBITIONS AND RECEIVING WATER LIMITATIONS.....	18
B. NON-STORM WATER DISCHARGES	19
C. NON-STORM WATER DRY WEATHER ACTION LEVELS	21
D. STORM WATER ACTION LEVELS	24
E. LEGAL AUTHORITY.....	25

PROGRAM PROVISIONS:

F. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM (JRMP)	27
1. DEVELOPMENT PLANNING COMPONENT	27
2. CONSTRUCTION COMPONENT	48
3. EXISTING DEVELOPMENT COMPONENT	53
4. ILLICIT DISCHARGE DETECTION AND ELIMINATION	68
5. PUBLIC PARTICIPATION COMPONENT	71
6. EDUCATION COMPONENT	71
G. WATERSHED WATER QUALITY WORKPLAN	74
H. FISCAL ANALYSIS.....	76
I. TOTAL MAXIMUM DAILY LOADS.....	77

REPORTING and PROGRAM MANAGEMENT PROVISIONS

J. PROGRAM EFFECTIVENESS ASSESSMENT AND REPORTING.....	77
K. REPORTING	79
L. MODIFICATION OF PROGRAMS	86
M. PRINCIPAL COPERMITTEE RESPONSIBILITIES	87
N. RECEIVING WATERS AND MS4 DISCHARGE MONITORING AND REPORTING PROGRAM.....	87
O. STANDARD PROVISIONS, REPORTING REQUIREMENTS, AND NOTIFICATIONS.....	87
P. ADDITIONAL PROVISIONS	88

Attachment A – Basin Plan Prohibitions

Attachment B – Standard Provisions, Reporting Requirements, and Notifications

Attachment C – Definitions

Attachment D – Scheduled Submittal Summary and Reporting Checklist Requirements

Attachment E – Receiving Waters And MS4 Discharge Monitoring And Reporting

Program No. R9-2010-0016

Attachment F – Data

The California Regional Water Quality Control Board, San Diego Region (hereinafter San Diego Water Board), finds that:

A. BASIS FOR THE ORDER

1. This Order is based on the federal Clean Water Act (CWA), the Porter-Cologne Water Quality Control Act (Division 7 of the Water Code, commencing with Section 13000), applicable State and federal regulations, all applicable provisions of statewide Water Quality Control Plans and Policies adopted by the State Water Resources Control Board (State Water Board), the Water Quality Control Plan for the San Diego Basin adopted by the San Diego Water Board (Basin Plan), the California Toxics Rule, and the California Toxics Rule Implementation Plan.
2. This Order reissues National Pollutant Discharge Elimination System (NPDES) Permit No. CAS0108766, which was first adopted by the San Diego Water Board on July 16, 1990 (Order No. 90-38), and then reissued on May 13, 1998 (Order No. 98-02). On May 26, 1998, the United States Environmental Protection Agency (USEPA), Region IX, objected to Order No. 98-02 due to concerns regarding Receiving Water Limitations (RWL) language. The USEPA concluded that the RWL language in the permit did not comply with the CWA and its implementing regulations. On April 27, 1999, the USEPA reissued the MS4 permit, which the San Diego Water Board adopted as Addendum No. 1 to Order No. 98-02 on November 8, 2000. On July 14, 2004, the San Diego Water Board adopted the third term MS4 permit, Order No. R9-2004-001. On January 15, 2009, the Riverside County Flood Control and Water Conservation District (RCFCD), as the Principal Copermitee, submitted a Report of Waste Discharge (ROWD) for reissuance of the municipal separate storm sewer system (MS4) Permit.
3. This Order is consistent with the following precedential Orders adopted by the State Water Board addressing MS4 NPDES Permits: Order 99-05, Order WQ-2000-11, Order WQ 2001-15, and Order WQO 2002-0014.¹

¹ In July 2010, the court in *Los Angeles County v. State Water Resources Control Board* remanded the Los Angeles Water Board's MS4 permit underlying Order WQ 2009-0008 for procedural reasons occurring during the permit adoption process. The court did not evaluate or rule upon the substantive findings and reasoning set forth in Order WQ 2009-0008. The State Water Board rescinded and voided Order WQ 2009-0008 to comply with the court's order. While the San Diego Water Board may no longer cite Order WQ 2009-0008, the San Diego Water Board has independently considered whether the requirement to eliminate non-storm water discharges is subject to the MEP standard. The San Diego Water Board concludes that the MEP standard does not apply to non-storm water discharges for the same reasons expressed by the State Water Board.

4. The Fact Sheet / Technical Report for the Order No. R9-2010-0016, NPDES No. CAS0108766, Waste Discharge Requirements for Discharges from the MS4s Draining the County of Riverside, the Incorporated Cities of Riverside County, and the Riverside County Flood Control and Water Conservation District within the San Diego Region, includes cited regulatory and legal references and additional explanatory information and data in support of the requirements of this Order. This information, including any supplements thereto, is hereby incorporated by reference into these findings.

B. REGULATED PARTIES

Each of the persons in Table 1 below, hereinafter called Copermittees or dischargers, owns or operates an MS4, through which it discharges into waters of the United States (U.S.) within the San Diego Region. These MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) a small MS4 that is “interrelated” to a medium or large MS4; or (3) an MS4 that contributes to a violation of a water quality standard; or (4) an MS4 which is a significant contributor of pollutants to waters of the U.S.

Table 1. Municipal Copermittees

1. City of Murrieta	4. County of Riverside
2. City of Temecula	5. Riverside County Flood Control and Water Conservation District
3. City of Wildomar	

The Cities of Murrieta, Menifee and Wildomar also discharge into the waters of the U.S. in the California Regional Water Quality Control Board, Santa Ana Region (Santa Ana Water Board), so are located partially within both the San Diego and Santa Ana Water Board boundaries. Water Code (WC) section 13228 provides a way to streamline the regulation of entities whose jurisdictions straddle the border of two or more Regions. WC section 13228 is implemented in this Order to ease the regulatory burden on Storm Water Agencies and Municipalities that lie in both the San Diego Water Board and the adjacent Santa Ana Water Board’s jurisdiction. As allowed by California Water Code (CWC) §13228, the Cities of Murietta, Menifee, and Wildomar submitted written requests to be regulated for MS4 purposes under a permit adopted by only one Water Board. As authorized by CWC §13228 and pursuant to written agreements dated September 28, 2010 between the San Diego Water Board and the Santa Ana Water Board, the Cities of Murrieta and Wildomar are wholly regulated by the San Diego Water Board under this Order, including those portions of the Cities jurisdiction not within the San Diego Water Board’s region. Similarly, the City of Menifee is wholly regulated by the Santa Ana Water Board under Order No. R8-2010-0033, including those portions of the City of Menifee within the San Diego Water Board’s region.

C. DISCHARGE CHARACTERISTICS

1. Discharges from the MS4 contain waste, as defined in the CWC, and pollutants that adversely affect the quality of the waters of the State. The discharge from an MS4 is a “discharge of pollutants from a point source” into waters of the U.S. as defined in the CWA.
2. MS4 storm water and non-storm water discharges are likely to contain pollutants that cause or threaten to cause a violation of water quality standards, as outlined in the Basin Plan. Storm water and non-storm water discharges from the MS4 are subject to the conditions and requirements established in the Basin Plan for point source discharges.
3. The most common categories of pollutants in runoff include total suspended solids, sediment, pathogens (e.g., bacteria, viruses, protozoa), heavy metals (e.g., copper, lead, zinc and cadmium), petroleum products and polynuclear aromatic hydrocarbons, synthetic organics (e.g., pesticides, herbicides, and PCBs), nutrients (e.g., nitrogen and phosphorus fertilizers), oxygen-demanding substances (decaying vegetation, animal waste), detergents, and trash.
4. The discharge of pollutants and/or increased flows from MS4s may cause or threaten to cause the concentration of pollutants to exceed applicable receiving water quality objectives and/or impair or threaten to impair designated beneficial uses resulting in a condition of pollution (i.e., unreasonable impairment of water quality for designated beneficial uses), contamination, or nuisance.
5. Pollutants in runoff can threaten and adversely affect human health. Human illnesses have been clearly linked to recreating near storm drains flowing to receiving waters. Also, runoff pollutants in receiving waters can bioaccumulate in the tissues of invertebrates and fish, which may be eventually consumed by humans.
6. Runoff discharges from MS4s often contain pollutants that cause toxicity to aquatic organisms (i.e., adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies). Toxic pollutants impact the overall quality of aquatic systems and beneficial uses of receiving waters.
7. The Copermittees discharge runoff into lakes, drinking water reservoirs, rivers, streams, creeks, bays, estuaries, coastal lagoons, the Pacific Ocean, and tributaries thereto within one of the eleven hydrologic units (Santa Margarita Hydrologic Unit) comprising the San Diego Region as shown in Table 2. Some of the receiving water bodies have been designated as impaired by the San Diego Water Board in 2009 pursuant to CWA section 303(d).

Table 2. Common Watersheds and CWA Section 303(d) Impaired Waters in the San Diego Region.

Hydrologic Area (HA) or Hydrologic Subarea (HSA) of the Santa Margarita Hydrologic Unit	Major Receiving Water Bodies	303(d) Pollutant(s)/Stressor or Water Quality Effect ²
DeLuz Creek HSA (902.21)	De Luz Creek	Iron, Manganese, Nitrogen, Sulfates
Murrieta HSA (902.32)	Long Canyon Creek (tributary to Murrieta Creek)	Chlorpyrifos, E. Coli, Fecal Coliform, Iron, Manganese
Wolf HSA (902.52)	Murrieta Creek	Chlorpyrifos, Copper, Iron, Manganese, Nitrogen, Toxicity
Pauba HSA (902.51)	Redhawk Channel	Chlorpyrifos, Copper, Diazinon, E. Coli, Fecal Coliform, Iron, Manganese, Nitrogen, Phosphorus, Total Dissolved Solids
Gavilan HSA (902.22)	Sandia Creek	Iron, Sulfates
Gertrudis HSA (902.42)	Santa Gertrudis Creek	Chlorpyrifos, Copper, E. Coli, Fecal Coliform, Iron, Phosphorous
Lower Ysidora HSA (902.11)	Santa Margarita Lagoon	Eutrophic
Lower Ysidora HSA (902.11)	Santa Margarita River (Lower)	Enterococcus, Fecal Coliform, Phosphorus, Total Nitrogen as N
Gavilan HSA (902.22)	Santa Margarita River (Upper)	Toxicity
Pauba HSA (902.51)	Temecula Creek	Chlorpyrifos, Copper, Phosphorus, Total Dissolved Solids, Toxicity
French HSA (902.33)	Warm Springs Creek (Riverside County)	Chlorpyrifos, E. Coli, Fecal Coliform, Iron, Manganese, Phosphorus, Total Nitrogen as N

² The listed 303(d) pollutant(s) do not necessarily reflect impairment of the entire corresponding WMA or all corresponding major surface water bodies. The specific impaired portions of each WMA are listed in the State Water Resources Control Board's 2008 Section 303(d) List of Water Quality Limited Segments.

8. Trash is a persistent pollutant that can enter receiving waters from the MS4, accumulate, and be transported downstream into receiving waters over time. Trash poses a serious threat to the beneficial uses of the receiving waters, including, but not limited to, human health, rare and endangered species, navigation and human recreation.
9. The Copermittees' water quality monitoring data submitted to date documents persistent violations of Basin Plan water quality objectives for various runoff-related pollutants (indicator bacteria, dissolved solids, turbidity, metals, pesticides, etc.) at various watershed monitoring stations. Persistent toxicity has also been observed at some watershed monitoring stations. In addition, bioassessment data indicate that the majority of the monitored receiving waters have Poor to Very Poor Index of Biotic Integrity ratings. In sum, the above findings indicate that runoff discharges are causing or contributing to water quality impairments, and are a leading cause of such impairments in Riverside County.
10. 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 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, and decreased natural clean sediment loads, 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 3-5 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.
11. Development creates new pollution sources as human population density increases and brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc. which can either be washed or directly dumped into the MS4. As a result, the runoff leaving the developed urban area is significantly greater in pollutant load than the pre-development runoff from the same area. These increased pollutant loads must be controlled to protect downstream receiving water quality.

12. Development and urbanization especially threaten environmentally sensitive areas (ESAs), such as water bodies designated as supporting a RARE beneficial use (supporting rare, threatened or endangered species) and CWA 303(d)-impaired water bodies. Such areas have a much lower capacity to withstand pollutant loads than other, more sensitive areas. In essence, development that is ordinarily insignificant in its impact on the environment may become significant in a particularly sensitive environment. Therefore, additional controls to reduce storm water pollutants from new and existing development may be necessary for areas adjacent to or discharging directly to an ESA.
13. Although dependent on several factors, the risks typically associated with properly managed infiltration of runoff (especially from residential land use areas) are not significant. The risks associated with infiltration can be managed by many techniques, including (1) 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); (2) taking reasonable steps to prevent the illegal disposal of wastes; (3) protecting footings and foundations; (4) ensuring that each drainage feature is adequately maintained in perpetuity; and (5) pretreatment.
14. Non-storm water (dry weather) discharge from the MS4 is not considered a storm water (wet weather) discharge and therefore is not subject to regulation under the Maximum Extent Practicable (MEP) standard from CWA 402(p)(3)(B)(iii), which is explicitly for “Municipal ... *Stormwater Discharges* (emphasis added)” from the MS4. Rather, non-storm water discharges into the storm sewers, per CWA 402(p)(3)(B)(ii), are to be effectively prohibited. Such dry weather non-storm water discharges have been shown to contribute significant levels of pollutants and flow in arid, developed Southern California watersheds and are to be effectively prohibited under the CWA.
15. Non-storm water discharges to the MS4 granted an influent exception [i.e., which are exempt from the effective prohibition requirement set forth in CWA section 402(p)(3)(B)(ii)] under 40 CFR 122.26 are included within this Order. Any exempted discharges identified by Copermittees as a source of pollutants are subsequently required to be *addressed* (emphasis added) as illicit discharges through prohibition and incorporation into existing IC/ID programs. Furthermore, the USEPA contemplates that permitting agencies such as the San Diego Water Board may also identify exempted discharges as a source of pollutants required to be addressed as illicit discharges (See Vol. 55 Fed. Reg. 48037). The San Diego Water Board and the Copermittees have identified landscape irrigation, irrigation water and lawn water, previously exempted discharges, as a source of pollutants and conveyance of pollutants to waters of the U.S.

D. RUNOFF MANAGEMENT PROGRAMS

1. General

- a. This Order specifies requirements necessary for the Copermittees to reduce the discharge of pollutants in storm water to the MEP. However, since MEP is a dynamic performance standard, which evolves over time as runoff management knowledge increases, the Copermittees' runoff management programs must continually be assessed and modified to incorporate improved programs, control measures, best management practices (BMPs), etc. in order to achieve the evolving MEP standard. Absent evidence to the contrary, this continual assessment, revision, and improvement of runoff management program implementation is expected to ultimately achieve compliance with water quality standards in the Region.
- b. The Copermittees have generally been implementing the jurisdictional runoff management programs (JRMPs) required pursuant to Order No. R9-2004-001 since July 14, 2005. Prior to that, the Copermittees were regulated by Order No. 98-02, since May 13, 1998. MS4 discharges, however, continue to cause or contribute to violations of water quality standards as evidenced by the Copermittees' monitoring results.
- c. This Order contains new or modified requirements that are necessary to improve Copermittees' efforts to reduce the discharge of pollutants in storm water runoff to the MEP and achieve water quality standards. Some of the new or modified requirements, such as the revised Watershed Water Quality Workplan (Watershed Workplan) section, are designed to specifically address high priority water quality problems. Other requirements, such as for unpaved roads, are a result of San Diego Water Board's identification of water quality problems through investigations and complaints during the previous permit period. Other new or modified requirements address program deficiencies that have been noted during audits, report reviews, and other San Diego Water Board compliance assessment activities. Additional changes in the monitoring program provide consistency with the Code of Federal Regulations, USEPA guidance, State Water Board guidance, and the Southern California Monitoring Coalition recommendations.
- d. Updated individual Storm Water Management Plans (Individual SWMP or JRMP), and Watershed Stormwater Management Plans (watershed SWMPs or Watershed Workplans), which, together with references in the DAMP, describe the Copermittees' runoff management programs in their entirety, are needed to guide the Copermittees' runoff management efforts and aid the Copermittees in tracking runoff management program implementation. Hereinafter, the individual SWMP is referred to as the JRMPs and the Watershed SWMP is referred to as the Watershed Workplan. It is practicable for the Copermittees to update the

JRMPs and Watershed Workplans within the timeframe specified in this Order, since significant efforts to develop these programs have already occurred.

- e. Pollutants can be effectively reduced in storm water runoff by the application of a combination of pollution prevention, source control, and treatment control BMPs. Pollution prevention is the reduction or elimination of pollutant generation at its source and is the best “first line of defense.” Source control BMPs (both structural and non-structural) minimize the contact between pollutants and flows (e.g., rerouting run-on around pollutant sources or keeping pollutants on-site and out of receiving waters). Treatment control BMPs remove pollutants that have been mobilized by wet-weather or dry-weather flows.
- f. Runoff needs to be addressed during the three major phases of urban development (planning, construction, and use) in order to reduce the discharge of pollutants from storm water to the MEP, effectively prohibit non-storm water discharges and protect receiving waters. Development which is not guided by water quality planning policies and principles can unnecessarily result in increased pollutant load discharges, flow rates, and flow durations which can negatively impact receiving water beneficial uses. Construction sites without adequate BMP implementation result in sediment runoff rates which greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. Existing development generates substantial pollutant loads which are discharged in runoff to receiving waters.
- g. Annual reporting requirements included in this Order are necessary to meet federal requirements and to evaluate the effectiveness and compliance of the Copermittees’ programs.
- h. This Order establishes Storm Water Action Levels (SALs) for selected pollutants based on USEPA Rain Zone 6 (arid southwest) Phase I MS4 monitoring data for pollutants in storm water. The SALs were computed as the 90th percentile of the data set, utilizing the statistical based population approach, one of three approaches recommended by the State Water Board’s Storm Water Panel in its report, ‘The Feasibility of Numerical Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities (June 2006). SALs are identified in Section D of this Order. Copermittees must implement a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water from the permitted areas so as not to exceed the SALs. Exceedance of SALs may indicate inadequacy of programmatic measures and BMPs required in this Order.

2. Development Planning

- a. The Standard Storm Water Mitigation Plan (SSMP) requirements contained in this Order are consistent with Order WQ-2000-11 adopted by the State Water Board on October 5, 2000. In the precedential order, the State Water Board

FINDINGS D: RUNOFF MANAGEMENT PROGRAMS

D.1 GENERAL

D.2 DEVELOPMENT PLANNING

found that the design standards, which essentially require that runoff generated by 85 percent of storm events from specific development categories be infiltrated or treated, reflect the MEP standard. The order also found that the SSMP requirements are appropriately applied to the majority of the Priority Development Project categories that are also contained in Section F.1 of this Order. The State Water Board also gave California Regional Water Quality Control Boards (Regional Water Boards) the needed discretion to include additional categories and locations, such as retail gasoline outlets (RGOs), in SSMPs.

- b. Controlling runoff pollution by using a combination of onsite source control and site design BMPs augmented with treatment control BMPs before the runoff enters the MS4 is important for the following reasons: (1) Many end-of-pipe BMPs (such as diversion to the sanitary sewer) are typically ineffective during significant storm events. (2) Whereas, onsite source control BMPs can be applied during all runoff conditions end-of-pipe BMPs are often incapable of capturing and treating the wide range of pollutants which can be generated on a sub-watershed scale; (3) End-of-pipe BMPs are more effective when used as polishing BMPs, rather than the sole BMP to be implemented; (4) End-of-pipe BMPs do not protect the quality or beneficial uses of receiving waters between the pollutant source and the BMP; and (5) Offsite end-of-pipe BMPs do not aid in the effort to educate the public regarding sources of pollution and their prevention.
- c. Use of Low-Impact Development (LID) site design BMPs at new development, redevelopment and retrofit projects can be an effective means for minimizing the impact of storm water runoff discharges from the development projects on receiving waters. LID is a site design strategy with a goal of maintaining or replicating the pre-development hydrologic regime through the use of design techniques. LID site design BMPs help preserve and restore the natural hydrologic cycle of the site, allowing for filtration and infiltration which can greatly reduce the volume, peak flow rate, velocity, and pollutant loads of storm water runoff. Current runoff management, knowledge, practices and technology have resulted in the use of LID BMPs as an acceptable means of meeting the storm water MEP standard.
- d. RGOs are significant sources of pollutants in storm water runoff. RGOs are points of convergence for motor vehicles for automotive related services such as repair, refueling, tire inflation, and radiator fill-up and consequently produce significantly higher loadings of hydrocarbons and trace metals (including copper and zinc) than other developed areas.
- e. Industrial sites are significant sources of pollutants in runoff. Pollutant concentrations and loads in runoff from industrial sites are similar or exceed pollutant concentrations and loads in runoff from other land uses, such as commercial or residential land uses. As with other land uses, LID site design,

source control, and treatment control BMPs are needed at industrial sites in order to meet the MEP standard. These BMPs are necessary where the industrial site is larger than 10,000 square feet. The 10,000 square feet threshold is appropriate, since it is consistent with requirements in other Phase I NPDES storm water regulations throughout California.

- f. If not properly designed or maintained, certain BMPs implemented or required by municipalities for runoff management may create a habitat for vectors (e.g. mosquitoes and rodents). Proper BMP design and maintenance to avoid standing water, however, can prevent the creation of vector habitat. Nuisances and public health impacts resulting from vector breeding can be prevented with close collaboration and cooperative effort between municipalities, local vector control agencies, and the California Department of Public Health during the development and implementation of runoff management programs.
- g. The increased volume, velocity, frequency and discharge duration of storm water runoff from developed areas has the potential to greatly accelerate downstream erosion, impair stream habitat in natural drainages, and negatively impact beneficial uses. Development and urbanization increase pollutant loads in storm water runoff and the volume of storm water runoff. Impervious surfaces can neither absorb water nor remove pollutants and thus lose the purification and infiltration provided by natural vegetated soil. Hydromodification measures for discharges to hardened channels are needed for the future restoration of the hardened channels to their natural state, thereby restoring the chemical, physical, and biological integrity and beneficial uses of local receiving waters.

3. Construction and Existing Development

- a. In accordance with federal NPDES regulations and to ensure the most effective oversight of industrial and construction site discharges, discharges of runoff from industrial and construction sites are subject to dual (State and local) storm water regulation. Under this dual system, each Copermitttee is responsible for enforcing its local permits, plans, and ordinances, and the San Diego Water Board is responsible for enforcing the General Construction Activities Storm Water Permit, State Water Board Order 2009-0009-DWQ, NPDES No. CAS000002 (General Construction Permit) and the General Industrial Activities Storm Water Permit, State Water Board Order 97-03 DWQ, NPDES No. CAS000001 (General Industrial Permit) and any reissuance of these permits. NPDES municipal regulations require that municipalities develop and implement measures to address runoff from industrial and construction activities. Those measures may include the implementation of other BMPs in addition to those BMPs that are required under the statewide general permits for activities subject to both State and local regulation.

- b. Identification of sources of pollutants in runoff (such as municipal areas and activities, industrial and commercial sites/sources, construction sites, and residential areas), development and implementation of BMPs to address those sources, and updating ordinances and approval processes are necessary for the Copermittees to ensure that discharges of pollutants from its MS4 in storm water are reduced to the MEP and that non-storm water discharges are not occurring. Inspections and other compliance verification methods are needed to ensure minimum BMPs are implemented. Inspections are especially important at areas that are at high risk for pollutant discharges.
- c. Historic and current development makes use of natural drainage patterns and features as conveyances for runoff. Urban streams used in this manner are part of the municipalities' MS4s regardless of whether they are natural, anthropogenic, or partially modified features. In these cases, the urban stream is both an MS4 and receiving water.
- d. As operators of the MS4s, the Copermittees cannot passively receive and discharge pollutants from third parties. By providing free and open access to an MS4 that conveys discharges to waters of the U.S., the operator essentially accepts responsibility for discharges into the MS4 that it does not prohibit or otherwise control. These discharges may cause or contribute to a condition of contamination or a violation of water quality standards.
- e. Waste and pollutants which are deposited and accumulate in MS4 drainage structures will be discharged from these structures to waters of the U.S. unless they are removed. These discharges may cause or contribute to, or threaten to cause or contribute to, a condition of pollution in receiving waters. For this reason, pollutant discharges from storm water into MS4s must be reduced using a combination of management measures, including source control and an effective MS4 maintenance program implemented by each Copermittee.
- f. Enforcement of local runoff related ordinances, permits, and plans is an essential component of every runoff management program and is specifically required in the federal storm water regulations and this Order. Each Copermittee is individually responsible for adoption and enforcement of ordinances and/or policies, implementation of identified control measures/BMPs needed to prevent or reduce pollutants in storm water runoff, and for the allocation of funds for the capital, operation and maintenance, administrative, and enforcement expenditures necessary to implement and enforce such control measures/BMPs under its jurisdiction. Education is an important aspect of every effective runoff management program and the basis for changes in behavior at a societal level. Education of municipal planning, inspection, and maintenance department staffs is especially critical to ensure that in-house staffs understand how their activities impact water quality, how to accomplish their jobs while protecting water quality, and understand their specific roles and responsibilities for compliance with this

Order. Public education, designed to target various urban land users and other audiences, is also essential to inform the public of how individual actions affect receiving water quality and how adverse effects can be minimized.

- g. Public participation during the development of runoff management programs is necessary to ensure that all stakeholder interests and a variety of creative solutions are considered.
- h. Retrofitting existing development with storm water treatment controls, including LID, is necessary to address storm water discharges from existing development that may cause or contribute to a condition of pollution or a violation of water quality standards. Although SSMP BMPs are required for redevelopment, the current rate of redevelopment will not address water quality problems in a timely manner. Cooperation with private landowners is necessary to effectively identify, implement and maintain retrofit projects for the preservation, restoration, and enhancement of water quality.

4. Watershed Runoff Management

- a. Since runoff within a watershed can flow from and through multiple land uses and political jurisdictions, watershed-based runoff management can greatly enhance the protection of receiving waters. Such management provides a means to focus on the most important water quality problems in each watershed. By focusing on the most important water quality problems, watershed efforts can maximize protection of beneficial use in an efficient manner. Effective watershed-based runoff management actively reduces pollutant discharges and abates pollutant sources causing or contributing to watershed water quality problems. Watershed-based runoff management that does not actively reduce pollutant discharges and abate pollutant sources causing or contributing to watershed water quality problems can necessitate implementation of the iterative process outlined in section A.3 of this Order. Watershed management of runoff does not require Copermittees to expend resources outside of their jurisdictions. In some cases, however, this added flexibility provides more, and possibly more effective, alternatives for minimizing waste discharges. Watershed management requires the Copermittees within a watershed to develop a watershed-based management strategy, which can then be implemented on a jurisdictional basis.
- b. Some runoff issues, such as general education and training, can be effectively addressed on a regional basis. Regional approaches to runoff management can improve program consistency and promote sharing of resources, which can result in implementation of more efficient programs.

- c. It is important for the Copermittees to coordinate their water quality protection and land use planning activities to achieve the greatest protection of receiving water bodies. Copermittee coordination with other watershed stakeholders, especially the State of California Department of Transportation, the U.S. federal government, sovereign American Indian tribes, and water and sewer districts, is also important.

E. STATUTE AND REGULATORY CONSIDERATIONS

1. The RWL language specified in this Order is consistent with language recommended by the USEPA and established in State Water Board Order WQ-99-05, *Own Motion Review of the Petition of Environmental Health Coalition to Review Waste Discharge Requirements Order No. 96-03, NPDES Permit No. CAS0108740*, adopted by the State Water Board on June 17, 1999. The RWL language in this Order requires compliance with water quality standards, which for storm water discharges is to be achieved through an iterative approach requiring the implementation of improved and better-tailored BMPs over time. Compliance with receiving water limits based on applicable water quality standards is necessary to ensure that MS4 discharges will not cause or contribute to violations of water quality standards and the creation of conditions of pollution, contamination, or nuisance.
2. The Basin Plan, identifies the following existing and potential beneficial uses for surface waters in Riverside County: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Process Supply (PROC), Hydropower Generation (POW), Industrial Service Supply (IND), Ground Water Recharge (GWR), Contact Water Recreation (REC1), Non-contact Water Recreation (REC2), Warm Freshwater Habitat (WARM), Cold Freshwater Habitat (COLD), Wildlife Habitat (WILD), Rare, Threatened, or Endangered Species (RARE), Spawning, Reproduction and/or Early Development (SPWN) and Preservation of Biological Habitats of Special Significance (BIOL).
3. This Order is in conformance with State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality Waters in California*, and the federal Antidegradation Policy described in 40 CFR 131.12.
4. Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) requires coastal states with approved coastal zone management programs to address non-point pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and hydromodification. This NPDES permit addresses the management measures required for the urban category, with the exception of septic systems. The adoption and implementation of this NPDES permit relieves the Copermittee from developing a non-point source plan, for the urban category, under CZARA. The San Diego Water Board addresses septic systems through the administration of other programs.

5. 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 water bodies known as Water Quality Limited Segments and to establish Total Maximum Daily Loads (TMDLs) for such waters. This priority list of impaired water bodies is called the Section 303(d) List. The 2006 Section 303(d) List was approved by the State Water Board on October 25, 2006. On June 28, 2007, the 2006 303(d) List for California was given final approval by the USEPA. The 303(d) List was recently updated, and on December 16, 2009, the 2008 303(d) List was approved by the San Diego Water Board. The 2008 303(d) List for the San Diego Region was approved by the State Water Board on August 4, 2010. The 2008 303(d) List is awaiting USEPA approval.
6. 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 CWA §402. (33 U.S.C. § 1342(p)(3)(B).) Second, the local agency Copermittees’ obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-governmental and new dischargers who are issued NPDES permits for storm water and non-storm water discharges. Third, the local agency Copermittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order. Fourth, the Copermittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA §301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their MS4 discharges (i.e. effluent limitations). 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. Likewise, the provisions of this Order to implement TMDLs are federal mandates. The CWA requires TMDLs to be developed for water bodies that do not meet federal water quality standards. (33 U.S.C. sec. 1313(d).) Once the USEPA or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable wasteload allocation. (40 C.F.R. sec. 122.44(d)(1)(vii)(B).)
7. Runoff treatment and/or mitigation must occur prior to the discharge of runoff into receiving waters. Treatment BMPs must not be constructed in waters of the U.S. or State unless the runoff flows are sufficiently pretreated to protect the values and functions of the water body. Federal regulations at 40 CFR 131.10(a) state that in no case shall a state adopt waste transport or waste assimilation as a designated use for any waters of the U.S. Authorizing the construction of an runoff treatment facility within a water of the U.S., or using the water body itself as a treatment system or for conveyance to a treatment system, would be tantamount to accepting waste assimilation as an appropriate use for that water body. Furthermore, the

construction, operation, and maintenance of a pollution control facility in a water body can negatively impact the physical, chemical, and biological integrity, as well as the beneficial uses, of the water body. Without federal authorization (e.g., pursuant to CWA § 404), waters of the U.S. may not be converted into, or used as, waste treatment or conveyance facilities. Similarly, waste discharge requirements pursuant to CWC §13260 are required for the conversion or use of waters of the State as waste treatment or conveyance facilities. Diversion from waters of the U.S./State to treatment facilities and subsequent return to waters of the U.S. is allowable, provided that the effluent complies with applicable NPDES requirements.

8. The issuance of waste discharge requirements and an NPDES permit for the discharge of runoff from MS4s to waters of the U.S. is exempt from the requirement for preparation of environmental documents under the California Environmental Quality Act (CEQA) (Public Resources Code, Division 13, Chapter 3, section 21000 et seq.) in accordance with the CWC section 13389.
9. Storm water discharges from developed and developing areas in Riverside County are significant sources of certain pollutants that cause, may be causing, threatening to cause or contributing to water quality impairment in the waters of Riverside County. Furthermore, as delineated in the CWA section 303(d) list in Table 2, the San Diego Water Board has found that there is a reasonable potential that municipal storm water and non-storm water discharges from MS4s cause or may cause or contribute to an excursion above water quality standards for the following pollutants: Indicator Bacteria (including Fecal Coliform and E. Coli), Copper, Manganese, Iron, Chlorpyrifos, Diazinon, Sulfates, Phosphorous, Nitrogen, Total Dissolved Solids (TDS), and Toxicity. In accordance with CWA section 303(d), the San Diego Water Board is required to establish TMDLs for these pollutants to these waters to eliminate impairment and attain water quality standards. Therefore, certain early pollutant control actions and further pollutant impact assessments by the Copermittees are warranted and required pursuant to this Order.
10. This Order requires each Copermittee to effectively prohibit all types of unauthorized discharges of non-storm water into its MS4. However, historically pollutants have been identified as present in dry weather non-storm water discharges from the MS4s through 303(d) listings, monitoring conducted by the Copermittees under Order No. R9-2004-0001, and there are others expected to be present in dry weather non-storm water discharges because of the nature of these discharges. This Order includes action levels for pollutants in non-storm water, dry weather discharges from the MS4. The non-storm water action levels are designed to ensure that the Order's requirement to effectively prohibit all types of unauthorized discharges of non-storm water into the MS4 is being complied with. Non-storm water action levels in the Order are based upon numeric or narrative water quality objectives and criteria as defined in the Basin Plan, the State Water Board's Water Quality Control Plan for Ocean Waters of California (Ocean Plan), and the State Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). An exceedance of an action level

requires specified responsive action by the Copermittees. This Order describes what actions the Copermittees must take when an exceedance of an action level is observed. Exceedances of non-storm water action levels do not alone constitute a violation of this Order but could indicate non-compliance with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4 or other prohibitions established in this Order. Failure to undertake required source investigation and elimination action following an exceedance of a non-storm water action level (NAL or action level) is a violation of this Order. The San Diego Water Board recognizes that use of action levels will not necessarily result in detection of all unauthorized sources of non-storm water discharges because there may be some discharges in which pollutants do not exceed established action levels. However, establishing NALs at levels appropriate to protect water quality standards is expected to lead to the identification of significant sources of pollutants in dry weather non-storm water discharges.

11. In addition to federal regulations cited in the Fact Sheet / Technical Report for the Order No. R9-2010-0016, monitoring and reporting required under Order No. R9-2010-0016 is required pursuant to authority under CWC section 13383.
12. With this Order, the San Diego Water Board has completed the re-issuance of the fourth iteration of the Phase I MS4 NPDES Permits for the Copermittees in the portions of San Diego County, Orange County, and Riverside County within the San Diego Region. The NPDES Permit requirements issued to the Copermittees in each county have substantially the same core requirements such as discharge prohibitions, receiving water limitations, jurisdictional components, and monitoring. In addition, the Copermittees cooperate regionally to develop monitoring with the Southern California Stormwater Monitoring Coalition and to develop program effectiveness with the California Stormwater Quality Association. Regional programs could improve the Copermittees' compliance with other permit components such as development of the Hydromodification Management Plans and Retrofitting Existing Development with more consistent implementation and cost sharing. Re-issuing the NPDES Permit requirements within five years for three counties under three different permits requires the San Diego Water Board to expend significant time and resources for issuance of the permits through three separate public proceedings, thereby greatly reducing the time and resources available to oversee compliance. Multiple permits also create confusion for determining compliance among regulated entities, especially the land development community. The San Diego Water Board recognizes that issuing a single MS4 permit for all Phase I entities in the San Diego Region will provide consistent implementation, improve communication among agencies within watersheds crossing multiple jurisdictions, and minimize staff resources spent with each permit renewal. The San Diego Water Board plans to develop a single regional MS4 permit prior to the expiration of this Order that will transfer the Copermittees' enrollment to the regional permit upon expiration of this Order.

F. PUBLIC PROCESS

1. The San Diego Water Board has notified the Copermittees, all known interested parties, and the public of its intent to consider adoption of an Order prescribing waste discharge requirements that would serve to renew an NPDES permit for the existing MS4 discharges of pollutants in waters of the U.S.
2. The San Diego Water Board has held a public hearing on November 10, 2010 and heard and considered all comments pertaining to the terms and conditions of this Order.

IT IS HEREBY ORDERED that the Copermittees, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, and the provisions of the CWA and regulations adopted thereunder, must each comply with the following:

A. PROHIBITIONS AND RECEIVING WATER LIMITATIONS

1. Discharges into and from MS4s in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance (as defined in CWC section 13050), in receiving waters of the state are prohibited.³
2. Storm water discharges from MS4s containing pollutants which have not been reduced to the MEP are prohibited.³
3. Discharges from MS4s that cause or contribute to the violation of water quality standards (designated beneficial uses, water quality objectives developed to protect beneficial uses, and the State policy with respect to maintaining high quality waters) are prohibited.
 - a. Each Copermittee must comply with section A.3 and section A.4 as it applies to Prohibition 5 in Attachment A of this Order through timely implementation of control measures and other actions to reduce pollutants in storm water discharges in accordance with this Order, including any modifications. If exceedance(s) of water quality standards persist notwithstanding implementation of this Order, the Copermittee must assure compliance with section A.3 and section A.4 as it applies to Prohibition 5 in Attachment A of this Order by complying with the following procedure:
 - (1) Upon a determination by either the Copermittee or the San Diego Water Board that storm water MS4 discharges are causing or contributing to an exceedance of an applicable water quality standard, the Copermittee must notify the San Diego Water Board within 30 days and thereafter submit a report to the San Diego Water Board that describes best management practices (BMPs) that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report may be incorporated in the Annual Report unless the San Diego Water Board⁴ directs an earlier submittal. The report must include an implementation

³ This prohibition does not apply to MS4 discharges which receive subsequent treatment to reduce pollutants in storm water discharges to the MEP prior to entering receiving waters (e.g., low flow diversions to the sanitary sewer). Runoff treatment and/or mitigation must occur prior to the discharge of runoff into receiving waters per finding E.7.

⁴ The San Diego Water Board by prior resolution has delegated all matters that may legally be delegated to its Executive Officer to act on its behalf pursuant to CWC §13223. Therefore, the Executive Officer is authorized to act on the San Diego Water Board's behalf on any matter within this Order unless such delegation is unlawful under CWC §13223 or this Order explicitly states otherwise.

schedule. The San Diego Water Board may require modifications to the report

- (2) Submit any modifications to the report required by the San Diego Water Board within 30 days of notification;
 - (3) Within 30 days following acceptance of the report described above by the San Diego Water Board, the Copermittee must revise its JRMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required; and
 - (4) Implement the revised JRMP and monitoring program in accordance with the approved schedule.
- b. The Copermittee must repeat the procedure set forth above to comply with the receiving water limitations for continuing or recurring exceedances of the same water quality standard(s) following implementation of scheduled actions unless directed to do otherwise by the San Diego Water Board's Executive Officer.
 - c. Nothing in section A.3 prevents the San Diego Water Board from enforcing any provision of this Order while the Copermittee prepares and implements the above report.
4. In addition to the above prohibitions, discharges from MS4s are subject to all Basin Plan prohibitions cited in Attachment A to this Order.

B. NON-STORM WATER DISCHARGES

1. Each Copermittee must effectively prohibit all types of non-storm water discharges into its MS4 unless such discharges are either authorized by a separate NPDES permit; or not prohibited in accordance with sections B.2 and B.3 below.
2. The following categories of non-storm water discharges are not prohibited unless a Copermittee or the San Diego Water Board identifies the discharge category as a source of pollutants to waters of the U.S. Where the Copermittee(s) have identified a category as a source of pollutants, the category must be addressed as an illicit discharge and prohibited through ordinance, order or similar means. The San Diego Water Board may identify categories of discharge that either require prohibition, or other controls for non-anthropogenic sources. For a discharge category determined to be a source of pollutants, the Copermittee, under direction of the San Diego Water Board, must either prohibit the discharge category or develop and implement appropriate control measures for non-anthropogenic sources to prevent the discharge of pollutants to the MS4 and report to the San Diego Water Board pursuant to Section K.1 and K.3 of this Order. The discharge categories are:

- a. Diverted stream flows;
 - b. Rising ground waters;
 - c. Uncontaminated ground water infiltration [as defined at 40 CFR 35.2005(20)] to MS4s;
 - d. Uncontaminated pumped ground water⁵;
 - e. Foundation drains⁵;
 - f. Springs;
 - g. Water from crawl space pumps⁵;
 - h. Footing drains⁵;
 - i. Air conditioning condensation;
 - j. Flows from riparian habitats and wetlands;
 - k. Water line flushing^{6,7};
 - l. Discharges from potable water sources not subject to NPDES Permit No. CAG679001, other than water main breaks;
 - m. Individual residential car washing; and
 - n. Dechlorinated swimming pool discharges⁸.
3. Emergency fire fighting flows (i.e., flows necessary for the protection of life or property) do not require BMPs and need not be prohibited.
 - a. As part of the JRMP, each Copermittee must develop and implement a program to address pollutants from non-emergency fire fighting flows (i.e., flows from controlled or practice blazes and maintenance activities) identified as significant sources of pollutants to waters of the U.S.
 - b. Building fire suppression system maintenance discharges (e.g. sprinkler line flushing) contain waste. Therefore, such discharges are to be prohibited by the Copermittees as illicit discharges through ordinance, order, or similar means.
4. Each Copermittee must examine all dry weather effluent analytical monitoring results collected in accordance with section F.4 of this Order and Receiving Waters and MS4 Discharge Monitoring and Reporting Program No. R9-2010-0016 to identify water quality problems which may be the result of any non-prohibited discharge category(ies) identified above in section B.2. Follow-up investigations must be conducted to identify and control, pursuant to section B.2, any non-prohibited discharge category(ies) listed above.

⁵ Requires enrollment under Order R9-2008-002. Discharges into the MS4 require authorization from the owner and operator of the MS4 system.

⁶ This exemption does not include fire suppression sprinkler system maintenance and testing discharges. Those discharges may be regulated under Section B.3.

⁷ Requires enrollment under Order R9-2002-0020.

⁸ Excluding saline swimming pool discharges.

C. NON-STORM WATER DRY WEATHER ACTION LEVELS

1. Each Copermittee, beginning no later than July 1, 2012, must implement the non-storm water dry weather action level (NAL) monitoring as described in Attachment E of this Order.
2. In response to an exceedance of an NAL, the Copermittee(s) having jurisdiction must investigate and seek to identify the source of the exceedance in a timely manner. However, if any Copermittee identifies a number of NAL exceedances that prevents it from adequately conducting source investigations at all sites in a timely manner, then that Copermittee may submit a prioritization plan and timeline that identifies the timeframe and planned actions to investigate and report its findings on all of the exceedances. Depending on the source of the pollutant exceedance, the Copermittee(s) having jurisdiction must take action as follows:
 - a. If the Copermittee identifies the source of the exceedance as natural (non-anthropogenically influenced) in origin and in conveyance into the MS4; then the Copermittee must report its findings and documentation of its source investigation to the San Diego Water Board in its Annual Report.
 - b. If the Copermittee identifies the source of the exceedance as an illicit discharge or connection, then the Copermittee must eliminate the discharge to its MS4 pursuant to Section F.4.f and report the findings, including any enforcement action(s) taken, and documentation of the source investigation to the San Diego Water Board in the Annual Report. If the Copermittee is unable to eliminate the source of discharge prior to the Annual Report submittal, then the Copermittee must submit, as part of its Annual Report, its plan and timeframe to eliminate the source of the exceedance. Those dischargers seeking to continue such a discharge must become subject to a separate NPDES permit prior to continuing any such discharge.
 - c. If the Copermittee identifies the source of the exceedance as an exempted category of non-storm water discharge, then the Copermittees must determine if this is an isolated circumstance or if the category of discharges must be addressed through the prevention or prohibition of that category of discharge as an illicit discharge. The Copermittee must submit its findings including a description of the steps taken to address the discharge and the category of discharge, to the San Diego Water Board for review in its Annual Report. Such description must include relevant updates to or new ordinances, orders, or other legal means of addressing the category of discharge, and the anticipated schedule for doing so. The Copermittees must also submit a summary of its findings with the Report of Waste Discharge.
 - d. If the Copermittee identifies the source of the exceedance as a non-storm water discharge in violation or potential violation of an existing separate NPDES permit

- (e.g. the groundwater dewatering permit), then the Copermittee must report, within three business days, the findings to the San Diego Water Board including all pertinent information regarding the discharger and discharge characteristics.
- e. If the Copermittee is unable to identify the source of the exceedance after taking and documenting reasonable steps to do so, then the Copermittee must perform additional focused sampling. If the results of the additional sampling indicate a recurring exceedance of NALs with an unidentified source, then the Copermittee must update its programs within a year to address the common contributing sources that may be causing such an exceedance. The Copermittee's annual report must include these updates to its programs including, where applicable, updates to their watershed workplans (Section G.2), retrofitting consideration (Section F.3.d) and program effectiveness work plans (Section J.4).
 - f. The Copermittees, or any interested party, may evaluate existing NALs and propose revised NALs for future Board consideration.
3. NALs can help provide an assessment of the effectiveness of the prohibition of non-storm water discharges and of the appropriateness of exempted non-storm water discharges. An exceedance of an NAL does not alone constitute a violation of the provisions of this Order. An exceedance of an NAL may indicate a lack of compliance with the requirement that Copermittees effectively prohibit all types of unauthorized non-storm water discharges into the MS4 or other prohibitions set forth in Sections A and B of this Order. Failure to timely implement required actions specified in this Order following an exceedance of an NAL constitutes a violation of this Order. Neither the absence of exceedances of NALs nor compliance with required actions following observed exceedances, excuses any non-compliance with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4s or any non-compliance with the prohibitions in Sections A and B of this Order. During any annual reporting period in which one or more exceedances of NALs have been documented the Copermittee must report in response to Section C.2 above, a description of whether and how the observed exceedances did or did not result in a discharge from the MS4 that caused, or threatened to cause or contribute to a condition of pollution, contamination, or nuisance in the receiving waters.
4. Monitoring of effluent will occur at the end-of-pipe prior to discharge into the receiving waters, with a focus on Major Outfalls, as defined in 40 CFR 122.26(B 5-6) and Attachment E of this Order. The Copermittees must develop their monitoring plans to sample a representative percentage of major outfalls and identified stations within each hydrologic subarea. At a minimum, outfalls that exceed any NALs once during any year must be monitored in the subsequent year. Any station that does not exceed an NAL, or only has exceedances that are identified as natural in origin and conveyance into the MS4 pursuant to Section C.2.a, for 3 successive years may be replaced with a different station.

5. Each Copermittee must monitor for the non-storm water dry weather action levels, which are incorporated into this Order as follows:

Action levels for discharges to inland surface waters:

Table 3.a: General Constituents

Parameter	Units	AMAL	MDAL	Instantaneous Maximum	Basis
Fecal Coliform	MPN/ 100 ml	200 ^A 400 ^B	-		BPO
Enterococci	MPN/ 100 ml	33	-	61 ^C	BPO
Turbidity	NTU	-	20		BPO
pH	Units	Within limit of 6.5 to 8.5 at all times			BPO
Dissolved Oxygen	mg/L	Not less than 5.0 in WARM waters and not less than 6.0 in COLD waters			BPO
Total Nitrogen	mg/L	-	1.0	See MDAL	BPO
Total Phosphorus	mg/L	-	0.1	See MDAL	BPO
Methylene Blue Active Substances	mg/L	-	0.5	See MDAL	BPO
Iron	mg/L	-	0.3	See MDAL	BPO
Manganese	mg/L	-	0.05	See MDAL	BPO

A – Based on a minimum of not less than five samples for any 30-day period

B – No more than 10 percent of total samples may exceed 400 per 100 ml during any 30 day period

C – This Value has been set to Basin Plan Criteria for Designated Beach Areas

BPO – Basin Plan Objective

MDAL – Maximum Daily Action Level

AMAL – Average Monthly Action Level

Table 3.b: Priority Pollutants

Parameter	Units	Freshwater (CTR)	
		MDAL	AMAL
Cadmium	ug/L	**	**
Copper	ug/L	*	*
Chromium III	ug/L	**	**
Chromium VI (hexavalent)	ug/L	16	8.1
Lead	ug/L	*	*
Nickel	ug/L	**	**
Silver	ug/L	*	*
Zinc	ug/L	*	*

CTR – California Toxic Rule

*- Action Levels developed on a case-by-case basis (see below)

** - Action Levels developed on a case-by-case basis (see below), but calculated criteria are not to exceed Maximum Contaminant Levels under the California Code of Regulations⁹

⁹ California Code of Regulations, Title 22, Division 4, Chapter 15, Article 4, Section 64431.

The NALs for Cadmium, Copper, Chromium (III), Lead, Nickel, Silver and Zinc will be developed on a case-by-case basis because the freshwater criteria are based on site-specific water quality data (receiving water hardness). For these priority pollutants, the following equations (40 CFR 131.38.b.2) will be required:

Cadmium (Total Recoverable)	= $\exp(0.7852[\ln(\text{hardness})] - 2.715)$
Chromium III (Total Recoverable)	= $\exp(0.8190[\ln(\text{hardness})] + .6848)$
Copper (Total Recoverable)	= $\exp(0.8545[\ln(\text{hardness})] - 1.702)$
Lead (Total Recoverable)	= $\exp(1.273[\ln(\text{hardness})] - 4.705)$
Nickel (Total Recoverable)	= $\exp(.8460[\ln(\text{hardness})] + 0.0584)$
Silver (Total Recoverable)	= $\exp(1.72[\ln(\text{hardness})] - 6.52)$
Zinc (Total Recoverable)	= $\exp(0.8473[\ln(\text{hardness})] + 0.884)$

D. STORM WATER ACTION LEVELS

1. The Copermittees must implement the Wet Weather MS4 Discharge Monitoring as described in Attachment E of this Order, and beginning three years after the Order adoption date, the Copermittees must annually evaluate their data compared to the Stormwater Action Levels (SALs). At each monitoring station, a running average of twenty percent or greater of exceedances of any discharge of storm water from the MS4 to waters of the U.S. that exceed the SALs for each of the pollutants listed in Table 4 (below) requires the Copermittee(s) having jurisdiction to affirmatively augment and implement all necessary storm water controls and measures to reduce the discharge of the associated class of pollutants(s) to the MEP. The Copermittees must utilize the exceedance information when adjusting and executing annual work plans, as required by this Order. Copermittees must take the magnitude, frequency, and number of constituents exceeding the SAL(s), in addition to receiving water quality data and other information, into consideration when prioritizing and reacting to SAL exceedances in an iterative manner. Failure to appropriately consider and react to SAL exceedances in an iterative manner creates a presumption that the Copermittee(s) have not reduced pollutants in storm water discharges to the MEP.

Table 4. Storm Water Action Levels

Pollutant	Action Level
Turbidity (NTU)	126
Nitrate & Nitrite total (mg/L)	2.6
P total (mg/L)	1.46
Cd total (µg/L)	3.0
Cu total (µg/L)	127
Pb total (µg/L)	250
Zn total (µg/L)	976

2. The end-of-pipe assessment points for the determination of SAL compliance are major outfalls, as defined in 40 CFR 122.26(b)(5) and (b)(6) and Attachment E of this Order. The Copermittees must develop their monitoring plans to sample a representative percentage of the major outfalls within each hydrologic subarea. At a minimum, outfalls that exceed SALs must be monitored in the subsequent year. Any station that does not exceed an SAL for 3 successive years may be replaced with a different station. SAL samples must be 24 hour time-weighted composites.
3. The absence of SAL exceedances does not relieve the Copermittees from implementing all other required elements of this Order.
4. This Order does not regulate natural sources and conveyances into the MS4 of constituents listed in Table 5. To be relieved of the requirements to take action as described in D.1 above, the Copermittee must demonstrate that the likely and expected cause of the SAL exceedance is not anthropogenic in nature. This demonstration does not need to be repeated for subsequent exceedances of the same SAL at the same monitoring station.
5. The SALs will be reviewed and updated at the end of every permit cycle. The data collected pursuant to D.2 above and Attachment E can be used to create SALs based upon local data. The purpose of establishing the SALs is that through the iterative and MEP process, outfall storm water discharges will meet all applicable water quality standards.

E. LEGAL AUTHORITY

1. Each Copermittee must establish, maintain, and enforce adequate legal authority within its jurisdiction to control pollutant discharges into and from its MS4 through ordinance, statute, permit, contract or similar means. Nothing herein shall authorize a Copermittee or other discharger regulated under the terms of this order to divert, store or otherwise impound water if such action is reasonably anticipated to harm downstream water rights holders in the exercise of their water rights. This legal authority must, at a minimum, authorize the Copermittee to:
 - a. Control the contribution of pollutants in discharges of runoff associated with industrial and construction activity to its MS4 and control the quality of runoff from industrial and construction sites. 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 which do not. Grading ordinances must be updated and enforced as necessary to comply with this Order;
 - b. Prohibit all identified illicit discharges not otherwise allowed pursuant to section B.2;
 - c. Prohibit and eliminate illicit connections to the MS4;

- d. Control the discharge of spills, dumping, or disposal of materials other than storm water to its MS4;
 - e. Require compliance with conditions in Copermittee ordinances, permits, contracts or orders (i.e., hold dischargers to its MS4 accountable for their contributions of pollutants and flows);
 - f. Utilize enforcement mechanisms to require compliance with Copermittee storm water ordinances, permits, contracts, or orders;
 - g. Control the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements among Copermittees;
 - h. Control of the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements with other owners of the MS4 such as the State of California Department of Transportation, the U.S. federal government, or sovereign Native American Tribes is encouraged;
 - i. Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with local ordinances and permits and with this Order, including the prohibition on illicit discharges to the MS4. This means the Copermittee must have authority to enter, monitor, inspect, take measurements, review and copy records, and require regular reports from industrial facilities discharging into its MS4, including construction sites;
 - j. Require the use of BMPs to prevent or reduce the discharge of pollutants into MS4s from storm water to the MEP; and
 - k. Require documentation on the effectiveness of BMPs implemented to reduce the discharge of storm water pollutants to the MS4 to the MEP.
2. Each Copermittee must submit on or before June 30, 2012, a statement certified by its chief legal counsel that the Copermittee has taken the necessary steps to obtain and maintain full legal authority within its jurisdiction to implement and enforce each of the requirements contained in 40 CFR 122.26(d)(2)(i)(A-F) and this Order. These statements must include:
- a. Citation of runoff related ordinances and the reasons they are enforceable;
 - b. Identification of the local administrative and legal procedures available to mandate compliance with runoff related ordinances and therefore with the conditions of this Order, and a statement as to whether enforcement actions can be completed administratively or whether they must be commenced and completed in the judicial system; and
 - c. A brief description of how runoff related ordinances are adopted and the process by which they may be challenged.

F. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM (JRMP)

Each Copermittee must implement all requirements of section F of this Order no later than July 1, 2012, unless otherwise specified. Upon adoption of this Order and until an updated JRMP is developed and implemented or July 1, 2012, whichever occurs first, each Copermittee must at a minimum implement its JRMP document, as the document was developed and amended to comply with the requirements of Order No. R9-2004-001.

Each Copermittee must develop and implement an updated JRMP for its jurisdiction no later than July 1, 2012. Each updated JRMP must meet the requirements of section F of this Order, reduce the discharge of storm water pollutants from the MS4 to the MEP, effectively prohibit non-storm water discharges, and prevent runoff discharges from the MS4 from causing or contributing to a violation of water quality standards. In addition, each Copermittee's JRMP must identify all departments and positions within its jurisdiction that conduct runoff related activities, and their roles and responsibilities under this Order. This identification must include an up to date organizational chart specifying these departments and key personnel.

1. DEVELOPMENT PLANNING COMPONENT

Each Copermittee must implement a program which meets the requirements of this section and (1) reduces Development Project discharges of storm water pollutants from the MS4 to the MEP; (2) prevents Development Project discharges from the MS4 from causing or contributing to a violation of water quality standards; (3) prevents illicit discharges into the MS4; and (4) manages increases in runoff discharge rates and durations from Development Projects that are likely to cause increased erosion of stream beds and banks, silt pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

a. GENERAL PLAN

Each Copermittee must revise as needed its General Plan or equivalent plan (e.g., Comprehensive, Master, or Community Plan) to include water quality and watershed protection principles and policies that direct land-use decisions and require implementation of consistent water quality protection measures for all development, redevelopment, and retrofit projects. Examples of water quality and watershed protection principles and policies to be considered include the following:

- (1) Minimize the amount of impervious surfaces and directly connected impervious surfaces in areas of new development and redevelopment and where feasible slow runoff and maximize on-site infiltration of runoff.

- (2) Implement pollution prevention methods supplemented by pollutant source controls and treatment BMPs. Use small collection strategies located at, or as close as possible to, the source (i.e., the point where water initially meets the ground) to minimize the transport of urban runoff and pollutants offsite and into an MS4.
- (3) Preserve, and where possible, create, or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones. Encourage land acquisition of such areas.
- (4) Limit disturbances of natural water bodies and natural drainage systems caused by development including roads, highways, and bridges.
- (5) Prior to making land use decisions, utilize methods available to estimate increases in pollutant loads and flows resulting from projected future development. Require incorporation of BMPs to mitigate the projected increases in pollutant loads and flows.
- (6) Avoid development of areas that are particularly susceptible to erosion and sediment loss; or establish development guidance that identifies these areas and protects them from erosion and sediment loss.
- (7) Reduce pollutants associated with vehicles and increasing traffic resulting from development.
- (8) Post-development runoff from a site must not contain pollutant loads that cause or contribute to an exceedance of receiving water quality objectives and which have not been reduced to the MEP.

b. ENVIRONMENTAL REVIEW PROCESS

Each Copermittee must revise as needed its current environmental review processes to accurately evaluate water quality impacts and cumulative impacts and identify appropriate measures to avoid, minimize, and mitigate those impacts for all Development Projects.

c. APPROVAL PROCESS CRITERIA AND REQUIREMENTS FOR ALL DEVELOPMENT PROJECTS

For all proposed Development Projects, each Copermittee, during the planning process, and prior to project approval and issuance of local permits, must prescribe the necessary requirements so that Development Project discharges of storm water pollutants from the MS4 will be reduced to the MEP, will not cause or

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM

F.1 DEVELOPMENT COMPONENT

F.1.a. GENERAL PLAN

F.1.b. ENVIRONMENTAL REVIEW PROCESS

F.1.c. APPROVAL PROCESS CRITERIA AND REQUIREMENTS FOR ALL DEVELOPMENT PROJECTS

contribute to a violation of water quality standards, and will comply with the Copermittee's ordinances, permits, plans, and requirements, and with this Order.

Performance Criteria: Discharges from each approved development project must be subject to the following management measures:

- (1) Source control BMPs that reduce storm water pollutants of concern in runoff; prevent illicit discharges into the MS4; prevent irrigation runoff; storm drain system stenciling or signage; properly design outdoor material storage areas; properly design outdoor work areas; and properly design trash storage areas.
- (2) The following LID BMPs listed below must be implemented at all Development Projects where applicable and feasible.
 - (a) Conserve natural areas, including existing trees, other vegetation, and soils;
 - (b) Construct streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided that public safety is not compromised;
 - (c) Minimize the impervious footprint of the project;
 - (d) Minimize soil compaction to landscaped areas;
 - (e) Minimize disturbances to natural drainages (e.g., natural swales, topographic depressions, etc.); and
 - (f) Disconnect impervious surfaces through distributed pervious areas.
- (3) Buffer zones for natural water bodies, where technically feasible. Where buffer zones are technically infeasible, require project proponent to implement other buffers such as trees, access restrictions, etc.
- (4) Other measures necessary so that grading or other construction activities meet the provisions specified in section F.2 of this Order.
- (5) Submittal of documentation of a mechanism under which ongoing long-term maintenance of all structural post-construction BMPs will be conducted.
- (6) Infiltration and Groundwater Protection

To protect groundwater quality, each Copermittee must apply restrictions to the use of treatment control BMPs that are designed to primarily function as large, centralized infiltration devices (such as large infiltration trenches and infiltration basins). Such restrictions must be designed so that the use of such infiltration treatment control BMPs does not cause or contribute to an exceedance of groundwater quality objectives. At a minimum, each treatment control BMP designed to primarily function as a centralized infiltration device must meet the restrictions below, unless the Development Project demonstrates to the Copermittee that a restriction is not necessary to protect groundwater quality. The Copermittees may collectively or individually

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
F.1 DEVELOPMENT COMPONENT

F.1.c. APPROVAL PROCESS CRITERIA AND REQUIREMENTS FOR ALL DEVELOPMENT PROJECTS

develop alternative restrictions on the use of treatment control BMPs which are designed to primarily function as centralized infiltration devices. Alternative restrictions developed by the Copermittees can partially or wholly replace the restrictions listed below. The restrictions do not apply to small infiltration systems dispersed throughout a development project.

- (a) Runoff must undergo pretreatment such as sedimentation or filtration prior to infiltration;
 - (b) All dry weather flows containing significant pollutant loads must be diverted from infiltration devices and treated through other BMPs;
 - (c) Pollution prevention and source control BMPs must be implemented at a level appropriate to protect groundwater quality at sites where infiltration treatment control BMPs are to be used;
 - (d) Infiltration treatment control BMPs must be adequately maintained so that they remove storm water pollutants to the MEP;
 - (e) The vertical distance from the base of any infiltration treatment control BMP to the seasonal high groundwater mark must be at least 10 feet. Where groundwater basins do not support beneficial uses, this vertical distance criteria may be reduced, provided groundwater quality is maintained;
 - (f) The soil through which infiltration is to occur must have physical and chemical characteristics (such as appropriate cation exchange capacity, organic content, clay content, and infiltration rate) which are adequate for proper infiltration durations and treatment of runoff for the protection of groundwater beneficial uses;
 - (g) Infiltration treatment control BMPs must not be used for areas of industrial or light industrial activity; and other high threat to water quality land uses and activities as designated by each Copermittee unless first treated or filtered to remove pollutants prior to infiltration; and
 - (h) Infiltration treatment control BMPs must be located a minimum of 100 feet horizontally from any water supply wells.
- (7) Where feasible, landscaping with native or low water species shall be preferred in areas that drain to the MS4 or to waters of the U.S.
- (8) Rain water harvesting and water reuse, where feasible, must be encouraged as part of the site design and construction to reduce pollutants in storm water discharges to the MEP.

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
F.1 DEVELOPMENT COMPONENT

F.1.c. APPROVAL PROCESS CRITERIA AND REQUIREMENTS FOR ALL DEVELOPMENT PROJECTS

**d. STANDARD STORM WATER MITIGATION PLANS (SSMPs) – APPROVAL PROCESS
CRITERIA AND REQUIREMENTS FOR PRIORITY DEVELOPMENT PROJECTS**

On or before June 30, 2012, the Copermittees must submit an updated SSMP, to the San Diego Water Board's Executive Officer for a 30 day public review and comment period. The San Diego Water Board's Executive Officer has the discretion to determine whether to hold a public hearing or to limit public input to written comments. Within 180 days of determination that the SSMP is in compliance with this Order's provisions, each Copermittee must amend its local ordinances consistent with the updated SSMP, and begin implementing the updated SSMP. Any updated local ordinances must be submitted to the San Diego Water Board with the Annual Report. The SSMP must meet the requirements of section F.1.d of this Order to (1) reduce Priority Development Project discharges of storm water pollutants from the MS4 to the MEP, and (2) prevent Priority Development Project runoff discharges from the MS4 from causing or contributing to a violation of water quality standards.¹⁰

(1) Definition of Priority Development Project:

Priority Development Projects are:

- (a) All new Development Projects that fall under the project categories or locations listed in section F.1.d.(2), and
- (b) Those redevelopment projects that create, add, or replace at least 5,000 square feet of impervious surfaces on an already developed site and the existing development and/or the redevelopment project falls under the project categories or locations listed in section F.1.d.(2). Where 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 SSMP requirements, the numeric sizing criteria discussed in section F.1.d.(6) applies only to the addition or replacement, and not to the entire development. Where redevelopment

¹⁰ Updated SSMP and hydromodification requirements must apply to all priority projects or phases of priority projects which have not yet begun grading or construction activities at the time any updated SSMP or hydromodification requirement commences. If lawful prior approval of a project exists, whereby application of an updated SSMP or hydromodification requirement to the project is illegal, the updated SSMP or hydromodification requirement need not apply to the project. Updated Development Planning requirements set forth in Sections F.1. (a) through (h) of this Order must apply to all projects or phases of projects, unless, at the time any updated Development Planning requirement commences, the projects or project phases meet any one of the following conditions: (i) the project or phase has begun grading or construction activities; or (ii) a Copermittee determines that lawful prior approval rights for a project or project phase exist, whereby application of the Updated Development Planning requirement to the project is legally infeasible. Where feasible, the Permittees must utilize the SSMP and hydromodification update periods to ensure that projects undergoing approval processes include application of the updated SSMP and hydromodification requirements in its plans.

results in an increase of more than fifty percent of the impervious surfaces of a previously existing development, the numeric sizing criteria applies to the entire development.

- (c) One acre threshold: In addition to the Priority Development Project Categories identified in section F.1.d.(2), Priority Development Projects must also include all other post-construction pollutant-generating new Development Projects that result in the disturbance of one acre or more of land by July 1, 2012.¹¹

(2) Priority Development Project Categories

Where a new Development Project feature, such as a parking lot, falls into a Priority Development Project Category, the entire project footprint is subject to SSMP requirements.

- (a) New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site) including commercial, industrial, residential, mixed-use, and public projects. This category includes development projects on public or private land which fall under the planning and building authority of the Copermittees.
- (b) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.
- (c) Restaurants. This category is defined as 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), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet must meet all SSMP requirements except for structural treatment BMP and numeric sizing criteria requirement F.1.d.(6) and hydromodification requirement F.1.h.
- (d) All hillside development greater than 5,000 square feet. This category is defined as any development which creates 5,000 square feet of impervious surface which is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.
- (e) Environmentally Sensitive Areas (ESAs). All development located within, or directly adjacent to, or discharging directly to an ESA (where

¹¹ Pollutant generating Development Projects are those projects that generate pollutants at levels greater than natural background levels.

discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10 percent or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.

- (f) Impervious parking lots 5,000 square feet or more and potentially exposed to runoff. Parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce.
- (g) Street, roads, highways, and freeways. This category includes any paved impervious surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles. To the extent that the Copermittees develop revised standard roadway design and post-construction BMP guidance that comply with the provisions of Section F.1 of the Order, then public works projects that implement the revised standard roadway sections do not have to develop a project specific SSMP. The standard roadway design and post-construction BMP guidance must be submitted with the Copermittee's updated SSMP.
- (h) Retail Gasoline Outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

(3) Pollutants of Concern

As part of its local SSMP, each Copermittee must implement an updated procedure for identifying pollutants of concern for each Priority Development Project. The procedure must address, at a minimum: (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; and (3) Pollutants expected to be present on site.

(4) Low Impact Development BMP Requirements

Each Copermittee must require each Priority Development Project to implement LID BMPs which will collectively minimize directly connected impervious areas, limit loss of existing infiltration capacity, and protect areas that provide important water quality benefits necessary to maintain riparian and aquatic biota, and/or are particularly susceptible to erosion and sediment loss.

(a) The Copermittees must take the following measures to ensure that LID BMPs are implemented at Priority Development Projects:

- (i) Each Copermittee must require LID BMPs or make a finding of technical infeasibility for each Priority Development Project in accordance with the LID waiver program in Section F.1.d.(7);
- (ii) Each Copermittee must incorporate formalized consideration, such as thorough checklists, ordinances, and/or other means, of LID BMPs into the plan review process for Priority Development Projects; and
- (iii) On or before July 1, 2012, each Copermittee must review its local codes, policies, and ordinances and identify barriers therein to implementation of LID BMPs. Following the identification of these barriers to LID implementation, where feasible, the Copermittee must take, by the end of the permit cycle, appropriate actions to remove such barriers. The Copermittees must include this review with the updated JRMP.

(b) The following LID BMPs must be implemented at each Priority Development Project:

- (i) Maintain or restore natural storage reservoirs and drainage corridors (including depressions, areas of permeable soils, swales, and ephemeral and intermittent streams) to the extent feasible¹².
- (ii) Projects with landscaped or other pervious areas must, where feasible, properly design and construct the pervious areas to effectively receive and infiltrate, retain and/or treat runoff from impervious areas, prior to discharge to the MS4. Soil compaction for these areas must be minimized. The amount of the impervious areas that are to drain to pervious areas must be based upon the total size, soil conditions, slope, and other pertinent factors.
- (iii) Projects with low traffic areas and appropriate soil conditions must be constructed with permeable surfaces.

¹² Priority Development Projects proposing to dredge or fill materials in waters of the U.S. must obtain a CWA Section 401 Water Quality Certification. Priority Development Projects proposing to dredge or fill waters of the State must obtain Waste Discharge Requirements.

(c) LID BMPs sizing criteria:

- (i) LID BMPs must be sized and designed to ensure onsite retention without runoff, of the volume of runoff produced from a 24-hour 85th percentile storm event¹³ ("design capture volume");
 - (ii) If onsite retention¹⁴ LID BMPs are technically infeasible per section F.1.d.(7)(b), other LID BMPs may treat any volume that is not retained onsite provided that the total volume of the other LID BMPs, including pore spaces and pre-filter detention volume, are sized to hold at least 0.75 times the portion of the design capture volume that is not retained onsite. The LID BMPs must be designed for an appropriate surface loading rate to prevent erosion, scour and channeling within the BMP.
- (d) If it is shown to be technically infeasible per Section F.1.d.(7)(b) to retain and/or treat the remaining volume up to and including the design capture volume using LID BMPs, then the project must implement conventional treatment control BMPs in accordance with Section F.1.d.(6) below and must participate in the LID waiver program in Section F.1.d.(7).
- (e) All LID BMPs must be designed and implemented with measures to avoid the creation of nuisance or pollution associated with vectors, such as mosquitoes, rodents, and flies.

(5) Source Control BMP Requirements

Each Copermittee must require each Priority Development Project to implement applicable source control BMPs. The source control BMPs to be required must:

- (a) Prevent illicit discharges into the MS4;
- (b) Minimize storm water pollutants of concern in runoff;
- (c) Eliminate irrigation runoff;

¹³ This volume is not a single volume to be applied to all of Riverside County. The size of the 85th percentile storm event is different for various parts of the County. The Copermittees are encouraged to calculate the 85th percentile storm event for each of its jurisdictions using local rain data pertinent to its particular jurisdiction (0.6 inch standard is a rough average for the County and should only be used where appropriate rain data is not available). In addition, isopluvial maps may be used to extrapolate rainfall data to areas where insufficient data exists in order to determine the volume of the local 85th percentile storm event in such areas. Where the Copermittees will use isopluvial maps to determine the 85th percentile storm event in areas lacking rain data, the Copermittees must describe their method for using isopluvial maps in its SSMPs.

¹⁴ Infiltration LID BMPs are the preferred method for onsite retention, but does not preclude the use and implementation of all other retention LID BMPs (e.g. evapotranspiration, evaporation, and/or harvest), where technically feasible, prior to considering biofiltration LID BMPs for treatment of the design capture volume that is not otherwise retained onsite.

- (d) Include storm drain system stenciling or signage;
- (e) Include properly designed outdoor material storage areas;
- (f) Include properly designed outdoor work areas;
- (g) Include properly designed trash storage areas; and
- (h) Include water quality protection requirements applicable to individual priority project categories.

(6) Treatment Control BMP Requirements

Each Copermittee must require each Priority Development Project that meets the Copermittee's technical infeasibility criteria in Section F.1.d(7) below, to implement conventional treatment control BMPs to treat the portion of the "design capture volume" that was not treated by LID BMPs per Section F.1.d(4) above. Conventional treatment control BMPs must meet the following requirements:

- (a) All treatment control BMPs for a single Priority Development Project must collectively be sized to comply with the following numeric sizing criteria:
 - (i) Volume-based treatment control BMPs must be designed to mitigate (infiltrate, filter, or treat) the remaining portion of the design capture volume that was not retained and/or treated with LID BMPs; or
 - (ii) Flow-based treatment control BMPs must be designed to mitigate (filter, or treat) either: a) the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of a storm event; or b) the maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity (for each hour of a storm event), as determined from the local historical rainfall record, multiplied by a factor of two.
- (b) All treatment control BMPs for Priority Development Projects must, at a minimum:
 - (i) Be ranked with high or medium pollutant removal efficiency for the project's most significant pollutants of concern, as the pollutant removal efficiencies are identified in the Copermittees' SSMP. Treatment control BMPs with a low removal efficiency ranking must only be approved by a Copermittee when a feasibility analysis has been conducted which exhibits that implementation of treatment control BMPs with high or medium removal efficiency rankings are infeasible for a Priority Development Project or portion of a Priority Development Project.
 - (ii) Be correctly sized and designed so as to remove storm water pollutants to the MEP.

- (c) Target removal of pollutants of concern from runoff.
- (d) Be implemented close to pollutant sources, and prior to discharging into waters of the U.S.
- (e) Include proof of a mechanism under which ongoing long-term maintenance will be conducted to ensure proper maintenance for the life of the project. The mechanisms may be provided by the project proponent or Copermittee.
- (f) Be designed and implemented with measures to avoid the creation of nuisance or pollution associated with vectors, such as mosquitoes, rodents, and flies.

(7) Low Impact Development (LID) BMP Waiver Program

The Copermittees must develop, collectively or individually, a LID waiver program for incorporation into the SSMP, which would allow a Priority Development Project to substitute implementation of all or a portion of required LID BMPs in Section F.1.d(4) with implementation of treatment control BMPs and either 1) on-site mitigation, 2) an off-site mitigation project, and/or 3) other mitigation developed by the Copermittees. The Copermittees must submit the LID waiver program as part of their updated SSMP. At a minimum, the program must meet the requirements below:

- (a) Prior to implementation, the LID waiver program must clearly exhibit that it will not allow Priority Development Projects to result in a net impact (after consideration of any mitigation) from pollutant loadings over and above the impact caused by projects meeting the onsite LID retention requirements;
- (b) For each Priority Development Project participating, the Copermittee must find that it is technically infeasible to implement LID BMPs that comply with the requirements of Section F.1.(d)(4). The Copermittee(s) must develop criteria to determine the technical feasibility of implementing LID BMPs. Each Priority Development Project participating must demonstrate that LID BMPs were implemented as much as feasible given the site's unique conditions. Technical infeasibility may result from conditions including, but not limited to:
 - (i) Locations that cannot meet the infiltration and groundwater protection requirements in section F.1.c.(6) for large, centralized infiltration BMPs. Where infiltration is technically infeasible, the project must still examine the feasibility of other onsite LID BMPs;
 - (ii) Insufficient demand for storm water reuse;

- (iii) Smart growth and infill or redevelopment locations where the density and/or nature of the project would create significant difficulty for compliance with the LID BMP requirements; and
 - (iv) Other site, geologic, soil, or implementation constraints identified in the Copermittees updated SSMP document.
- (c) Each Priority Development Project that participates in the LID waiver program must mitigate for the pollutant loads expected to be discharged due to not implementing the LID retention BMPs in section F.1.d.(4). The pollutant loading must be estimated for each project participating in the LID waiver program. The estimated impacts from not implementing the required LID retention BMPs in section F.1.d.(4) must be fully mitigated. Mitigation projects must be implemented within the same hydrologic unit as the Priority Development Project. Mitigation projects outside of the hydrologic subarea but within the same hydrologic unit may be approved provided that the project proponent demonstrates that mitigation projects within the same hydrologic subarea are infeasible and that the mitigation project will address similar beneficial use impacts as expected from the Priority Development Projects pollutant load. Onsite mitigation may include increasing the conventional treatment sizing factors to achieve pollutant load removal equal to or greater than the pollutant load removal expected from implementing onsite retention of the design capture volume. Offsite mitigation projects may include green streets projects, existing development retrofit projects, retrofit incentive programs, regional BMPs and/or riparian restoration projects. Project applicants seeking to utilize these alternative compliance provisions may propose other offsite mitigation projects, which the Copermittees may approve if they meet the requirements of this subpart.
- (d) A Copermittee may choose to implement additional mitigation programs (e.g., pollutant credit system, mitigation fund) as part of the LID waiver program provided that the mitigation program clearly exhibits that it will not allow Priority Development Projects to result in a net impact from pollutant loadings over and above the impact caused by projects meeting LID requirements. Any additional mitigation programs that a Copermittee chooses to implement must be submitted to the San Diego Water Board Executive Officer for review and acceptance prior to implementation.

(8) LID and Treatment Control BMP Standards

- (a) As part of the SSMP, each Copermittee must develop and require Priority Development Projects to implement siting, design, and maintenance criteria for each LID and treatment control BMP listed in the SSMP to determine feasibility and applicability and so that implemented LID and treatment control BMPs are constructed correctly and are effective at pollutant removal, runoff control, and vector minimization. Development of

BMP design worksheets which can be used by project proponents is encouraged.

- (b) LID and treatment control BMPs implemented at any Priority Development Projects must mitigate (treat through infiltration, settling, filtration or other unit processes) the required volume or flow of runoff from all developed portions of the project, including landscaped areas.
- (c) All LID and treatment control BMPs must be located so as to remove pollutants from runoff prior to its discharge to any receiving waters. Multiple Priority Development Projects may use shared post-construction BMPs as long as construction of any shared BMP is completed prior to the use or occupation of any Priority Development Project from which the BMP will receive runoff. Post construction BMPs must not be constructed within a waters of the U.S. or waters of the State.

(9) Implementation Process

- (a) As part of its local SSMP, each Copermittee must implement a process to verify compliance with SSMP requirements. The process must identify at what point in the planning process Priority Development Projects will be required to meet SSMP requirements and at a minimum, the Priority Development Project must implement the required post-construction BMPs prior to occupancy and/or the intended use of any portion of that project. The process must also include identification of the roles and responsibilities of various municipal departments in implementing the SSMP requirements, as well as any other measures necessary for the implementation of SSMP requirements.
- (b) Each Copermittee must establish a mechanism not only to track post-construction BMPs, but also to ensure that appropriate easements and ownerships are properly recorded in public records and the information is conveyed to all appropriate parties when there is a change in project or site ownership.

(10) Post-construction BMP Review

- (a) The Copermittees must review and update the BMPs that are listed in their SSMP as options for treatment control. At a minimum, the update must include removal of obsolete or ineffective BMPs and addition of LID BMPs that can be used for treatment, such as bioretention cells, bioretention swales, etc. The update must also add appropriate LID BMPs to any tables or discussions in the local SSMPs addressing pollutant removal efficiencies of treatment control BMPs. In addition, the update must include review and revision where necessary of treatment control BMP pollutant removal efficiencies.

(b) The update must incorporate findings from BMP effectiveness studies conducted by the Copermittees for projects funded wholly or in part by the State Water Board or Regional Water Boards.

(c) Each Copermittee must implement a mechanism for annually incorporating findings from local treatment BMP effectiveness studies (e.g., ones conducted by, or on-behalf of, public agencies in Riverside County) into SSMP project reviews and permitting.

e. BMP CONSTRUCTION VERIFICATION

Prior to occupancy and/or intended use of any portion of the Priority Development Project subject to SSMP requirements, each Copermittee must inspect the constructed site design, source control, and treatment control BMPs applicable to the constructed portion of the project to verify that they have been constructed and are operating in compliance with all specifications, plans, permits, ordinances, and this Order.

f. BMP MAINTENANCE TRACKING

(1) Inventory of SSMP projects: Each Copermittee must develop and maintain a watershed-based database to track and inventory all projects constructed within their jurisdiction, that have a final approved SSMP (SSMP projects), and its structural post-construction BMPs implemented therein since July, 2005. LID BMPs implemented on a lot by lot basis at single family residential houses, such as rain barrels, are not required to be tracked or inventoried. At a minimum, the database must include information on BMP type(s), location, watershed, date of construction, party responsible for maintenance, dates and findings of maintenance verifications, and corrective actions, including whether the site was referred to the local vector control agency or department.

(2) Each Copermittee must verify that approved post-construction BMPs are operating effectively and have been adequately maintained by implementing the following measures:

(a) The designation of high priority SSMP Projects must consider the following:

- (i) BMP size,
- (ii) Recommended maintenance frequency,
- (iii) Likelihood of operational and maintenance issues,
- (iv) Location,

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM

F.1 DEVELOPMENT COMPONENT

F.1.d. STANDARD STORM WATER MITIGATION PLANS

F.1e. BMP CONSTRUCTION VERIFICATION

F.1.f. BMP MAINTENANCE TRACKING

- (v) Receiving water quality,
- (vi) Compliance record,
- (vii) Land use, and
- (viii) Other pertinent factors;

At a minimum, high priority projects include those projects that generate pollutants (prior to treatment) within the tributary area of and within the same hydrologic subarea as a 303(d) listed waterbody impaired for that pollutant; or those projects generating pollutants within the tributary area for and within the same hydrologic subarea as an observed action level exceedance of that pollutant.

- (b) Beginning on July 1, 2012, each Copermittee must verify that the required structural post-construction BMPs on the inventoried SSMP projects have been implemented, are maintained, and are operating effectively through inspections, self-certifications, surveys, or other equally effective approaches with the following conditions:
 - (i) The implementation, operation, and maintenance of all (100 percent) approved and inventoried final project public and private SSMPs (a.k.a. WQMPs) must be verified every five years;
 - (ii) All (100 percent) projects with BMPs that are high priority must be inspected by the Copermittee annually prior to each rainy season;
 - (iii) All (100 percent) Copermittee projects with BMPs must be inspected by the Copermittee annually;
 - (iv) At the discretion of the Copermittee, its inspections may be coordinated with the facility inspections implemented pursuant to section F.3. of this Order;
 - (v) For verifications performed through a means other than direct Copermittee inspection, adequate documentation must be submitted to the Copermittee to provide assurance that the required maintenance has been completed;
 - (vi) Appropriate follow-up measures (including re-inspections, enforcement, maintenance, etc.) must be conducted to ensure the treatment BMPs continue to reduce storm water pollutants as originally designed; and
 - (vii) Inspections must note observations of vector conditions, such as mosquitoes. Where conditions are identified as contributing to mosquito production, the Copermittee must notify its local vector control agency.

g. ENFORCEMENT OF DEVELOPMENT SITES

Each Copermittee must enforce its storm water ordinance for all development projects as necessary to maintain compliance with this Order. Copermittee ordinances or other regulatory mechanisms must include appropriate sanctions to achieve compliance. Sanctions must include the following tools or their equivalent: Non-monetary penalties, fines, bonding requirements, liens, and/or permit or occupancy denials for non-compliance.

h. HYDROMODIFICATION – LIMITATIONS ON INCREASES OF RUNOFF DISCHARGE RATES AND DURATIONS¹⁵

Each Copermittee shall collaborate with the other Copermittees to develop and implement a Hydromodification Management Plan (HMP) to manage increases in runoff discharge rates and durations from all Priority Development Projects. The HMP must be incorporated into the SSMP and implemented by each Copermittee so that estimated post-project runoff discharge rates and durations must not exceed pre-development discharge rates and durations. Where the proposed project is located on an already developed site, the pre-project discharge rate and duration must be that of the pre-developed, naturally occurring condition. The draft HMP must be submitted to the San Diego Water Board on or before June 30, 2013. The HMP will be made available for public review and comment and the San Diego Water Board Executive Officer will determine whether to hold a public hearing before the full San Diego Water Board or whether public input will be through written comments to the Executive Officer only.

(1) The HMP must:

- (a) Identify a method for assessing susceptibility and geomorphic stability of channel segments which receive runoff discharges from Priority Development Projects. A performance standard must be established that ensures that the geomorphic stability within the channel will not be compromised as a result of receiving runoff discharges from Priority Development Projects.

¹⁵ Updated SSMP and hydromodification requirements must apply to all Priority Development Projects or phases of Priority Development Projects which have not yet begun grading or construction activities at the time any updated SSMP or hydromodification requirement commences. If a Copermittee determines that lawful prior approval of a project exists, whereby application of an updated SSMP or hydromodification requirement to the project is legally infeasible, the updated SSMP or hydromodification requirement need not apply to the project. The Copermittees must utilize the SSMP and hydromodification update periods to ensure that projects undergoing approval processes include application of the updated SSMP and hydromodification requirements in its plans.

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM**F.1 DEVELOPMENT COMPONENT****F.1.g. ENFORCEMENT OF DEVELOPMENT SITES****F.1.h. HYDROMODIFICATION**

- (b) Identify a range of runoff flows¹⁶ based on continuous simulation of the entire rainfall record (or other analytical method proposed by the Copermittees and deemed acceptable by the San Diego Water Board) for which Priority Development Project post-project runoff flow rates and durations must not exceed pre-development (naturally occurring) runoff flow rates and durations by more than 10 percent, where the increased flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses. The lower boundary of the range of runoff flows identified must correspond with the critical channel flow that produces the critical shear stress that initiates channel bed movement or that erodes the toe of channel banks. The identified range of runoff flows may be different for specific watersheds, channels, or channel reaches. In the case of an artificially hardened (concrete lined, rip rap, etc.) channel, the lower boundary of the range of runoff flows identified must correspond with the critical channel flow that produces the critical shear stress that initiates channel bed movement or that erodes the toe of channel banks of a comparable natural channel (i.e. non-hardened, pre-development).
- (c) Identify a method to assess and compensate for the loss of sediment supply to streams due to development. A performance and/or design standard must be created and required to be met by Priority Development Projects to ensure that the loss of sediment supply due to development does not cause or contribute to increased erosion within channel segments downstream of Priority Development Project discharge points.
- (d) Designate and require Priority Development Projects to implement control measures so that (1) post-project runoff flow rates and durations do not exceed pre-development (naturally occurring) runoff flow rates and durations by more than 10 percent for the range of runoff flows identified under section F.1.h.(1)(b), where the increased flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses; (2) post-project runoff flow rates and durations do not result in channel conditions which do not meet the channel standard developed under section F.1.h.(1)(a) for channel segments downstream of Priority Development Project discharge points; and (3) the design of the project and/or control measures compensate for the loss of sediment supply due to development.

¹⁶ The identified range of run off flows to be controlled should be expressed in terms of peak flow rates of rainfall events, such as "10% of the pre-development 2-year runoff event up to the pre-development 10-year runoff event."

- (e) Include a protocol to evaluate potential hydrograph change impacts to downstream watercourses from Priority Development Projects to meet the range of runoff flows identified under Section F.1.h.(1)(b).
- (f) Include other performance criteria (numeric or otherwise) for Priority Development Projects as necessary to prevent runoff from the projects from increasing and/or continuing unnatural rates of erosion of channel beds and banks, silt pollutants generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.
- (g) Include a review of pertinent literature.
- (h) Identify areas within the Santa Margarita Hydrologic Unit for potential opportunities to restore or rehabilitate stream channels with historic hydromodification of receiving waters that are tributary to documented low or very low Index of Biotic Integrity (IBI) scores.
- (i) Include a description of how the Copermittees will incorporate the HMP requirements into their local approval processes.
- (j) Include criteria on selection and design of management practices and measures (such as detention, retention, and infiltration) to control flow rates and durations and address potential hydromodification impacts.
- (k) Include technical information, including references, supporting any standards and criteria proposed.
- (l) Include a description of inspections and maintenance to be conducted for management practices and measures to control flow rates and durations and address potential hydromodification impacts.
- (m) Include a description of monitoring and other program evaluations to be conducted to assess the effectiveness of implementation of the HMP. Monitoring and other program evaluations must include an evaluation of changes to physical (e.g., cross-section, slope, discharge rate, vegetation, pervious/impervious area) and biological (e.g., habitat quality, benthic flora and fauna, IBI scores) conditions of receiving water channels as areas with Priority Development Projects are constructed (i.e. pre- and post-project), as appropriate.
- (n) Include mechanisms for assessing and addressing cumulative impacts of Priority Development Projects within a watershed on channel morphology.

(2) In addition to the control measures that must be implemented by Priority Development Projects per section F.1.h.(1)(d), the HMP must include a suite of management measures that can be used on Priority Development Projects to mitigate hydromodification impacts, protect and restore downstream beneficial uses and prevent or further prevent adverse physical changes to downstream channels. The measures must be based on a prioritized consideration of the following elements in this order:

- (a) Site design control measures;
- (b) On-site management measures;
- (c) Regional control measures located upstream of receiving waters; and
- (d) In-stream management and control measures.

Where stream channels are adjacent to, or are to be modified as part of a Priority Development Project, management measures must include buffer zones and setbacks. The suite of management measures must also include stream restoration as a viable option to achieve the channel standard in section F.1.h.(1)(a). In-stream controls used as management measures to protect and restore downstream beneficial uses and for preventing or minimizing further adverse physical changes must not include the use of non-naturally occurring hardscape materials such as concrete, riprap, gabions, etc. to reinforce stream channels.

(3) As part of the HMP, the Copermittees may develop a waiver program that allows a redevelopment Priority Development Project, as defined in Section F.1.d.(1)(b), to implement offsite mitigation measures. A waiver may be granted if onsite management and control measures are technically infeasible to fully achieve post-project runoff flow rates and durations that do not exceed the pre-development (naturally occurring) runoff flow rates and durations. Redevelopment projects that are granted a waiver under the program must not have post-project runoff flow rates and durations that exceed the pre-project runoff flow rates and durations. The estimated incremental hydromodification impacts from not achieving the pre-development (naturally occurring) runoff flow rates and durations for the project site must be fully mitigated. The offsite mitigation must be within the same stream channel system to which the project discharges. Mitigation projects not within the same stream channel system but within the same hydrologic unit may be approved provided that the project proponent demonstrates that mitigation within the same stream channel is infeasible and that the mitigation project will address similar impacts as expected from the project.

(4) Each individual Copermittee has the discretion to not require Section F.1.h. at Priority Development Projects where the project:

- (a) Discharges storm water runoff into underground storm drains discharging directly to water storage reservoirs and lakes;

- (b) Discharges storm water runoff into conveyance channels whose bed and bank are concrete lined all the way from the point of discharge to water storage reservoirs and lakes; or
- (c) Discharges storm water runoff into other areas identified in the HMP as acceptable to not need to meet the requirements of Section F.1.h by the San Diego Water Board Executive Officer.

(5) HMP Reporting and Implementation

- (a) On or before June 30, 2013, the Copermittees must submit to the San Diego Water Board a draft HMP that has been reviewed by the public, including the identification of the appropriate limiting range of flow rates per section F.1.h.(1)(b).
- (b) Within 180 days of receiving San Diego Water Board comments on the draft HMP, the Copermittees must submit a final HMP that addressed the San Diego Water Board's comments.
- (c) Within 90 days of receiving a determination of adequacy from the San Diego Water Board, each Copermittee must incorporate and implement the HMP for all Priority Development Projects.
- (d) Prior to acceptance of the HMP by the San Diego Water Board, the early implementation measures likely to be included in the HMP must be encouraged by the Copermittees.

(6) Interim Hydromodification Criteria

Immediately following adoption of this Order and until the final HMP required by this Order has been determined by the San Diego Water Board to be adequate, each Copermittee must ensure that all Priority Development Projects are implementing the hydromodification (aka Hydrologic Condition of Concern) requirements found in Section 4.4 of the 2006 Riverside County WQMP (updated in 2009) unless one of the following conditions in lieu of those specified in the WQMP are met:

- (a) Runoff from the Priority Development Project discharges (1) directly to a conveyance channel or storm drain that is concrete lined all the way from the point of discharge to the ocean, bay, lagoon, water storage reservoir or lake; and (2) the discharge is in full compliance with Copermittee requirements for connections and discharges to the MS4 (including both quality and quantity requirements); and (3) the discharge will not cause increased upstream or downstream erosion or adversely impact downstream habitat; and (4) the discharge is authorized by the Copermittee.

- (b) The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a project specific WQMP to address hydrologic condition concerns on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.
- (c) The runoff flow rate, volume, velocity, and duration for the post-development condition of the Priority Development Project do not exceed the pre-development (i.e. naturally occurring) condition for the 2-year, 24-hour and 10-year, 24-hour rainfall events. This condition must be substantiated by hydrologic modeling acceptable to the Copermittee.

Once a final HMP is determined to be adequate and is required to be implemented, compliance with the final HMP is required by this Order and compliance with the 2004 WQMP (updated in 2009) or the in-lieu interim hydromodification criteria set forth above no longer satisfies the requirements of this Order.

- (7) No part of section F.1.h eliminates the Copermittees' responsibilities for implementing the Low Impact Development requirements under section F.1.d.(4).

i. UNPAVED ROADS DEVELOPMENT

The Copermittees must develop, where they do not already exist, and implement or require implementation of erosion and sediment control BMPs after construction of new unpaved roads. At a minimum, the BMPs must include the following, or alternative BMPs that are equally effective:

- (1) Practices to minimize road related erosion and sediment transport;
- (2) Grading of unpaved roads to slope outward where consistent with road engineering safety standards;
- (3) Installation of water bars as appropriate; and
- (4) Unpaved roads and culvert designs that do not impact creek functions and where applicable, that maintain migratory fish passage.

2. CONSTRUCTION COMPONENT

Each Copermittee must implement a construction program which meets the requirements of this section, prevents illicit discharges into the MS4, implements and maintains structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites to the MS4, reduces construction site discharges of storm water pollutants from the MS4 to the MEP, and prevents construction site discharges from the MS4 from causing or contributing to a violation of water quality standards.

a. ORDINANCE UPDATE

By July 1, 2012, each Copermittee must review and update its grading ordinances and other ordinances as necessary to achieve full compliance with this Order, including requirements for the implementation of all designated BMPs and other measures.

b. SOURCE IDENTIFICATION

Each Copermittee must maintain an updated watershed-based inventory of all construction sites within its jurisdiction. The use of an automated database system, such as Geographical Information Systems (GIS) is strongly encouraged.

c. SITE PLANNING AND PROJECT APPROVAL PROCESS

Each Copermittee must incorporate consideration of potential water quality impacts prior to approval and issuance of construction and grading permits.

- (1) Each construction and grading permit must require proposed construction sites to implement designated BMPs and other measures so that illicit discharges into the MS4 are prevented, storm water pollutants discharged from the site will be reduced to the MEP, and construction discharges from the MS4 are prevented from causing or contributing to a violation of water quality standards.
- (2) Prior to permit issuance, the project proponent's runoff management plan (or equivalent construction BMP plan) must be required to comply, and reviewed to verify compliance with the local grading ordinance, other applicable local ordinances, and this Order.
- (3) Prior to permit issuance, each Copermittee must verify that project proponents subject to California's statewide General NPDES Permit for Storm Water Discharges Associated With Construction Activities, (hereinafter General Construction Permit), have existing coverage under the General Construction Permit.

d. BMP IMPLEMENTATION

(1) Designate BMPs: Each Copermittee must designate a minimum set of BMPs and other measures to be implemented at all construction sites. The designated minimum set of BMPs must include:

(a) Management Measures:

- (i) Pollution prevention, where appropriate;
- (ii) Development and implementation of a runoff management plan;
- (iii) Minimization of areas that are cleared and graded to only the portion of the site that is necessary for construction;
- (iv) Minimization of exposure time of disturbed soil areas;
- (v) Minimization of grading during the rainy season and correlation of grading with seasonal dry weather periods to the extent feasible;
- (vi) Limitation of grading to a maximum disturbed area as determined by each Copermittee before either temporary or permanent erosion controls are implemented to prevent storm water pollution. The Copermittee has the option of temporarily increasing the size of disturbed soil areas by a set amount beyond the maximum, if the individual site is in compliance with applicable storm water regulations and the site has adequate control practices implemented to prevent storm water pollution;
- (vii) Temporary stabilization and reseeding of disturbed soil areas as rapidly as feasible;
- (viii) Wind erosion controls;
- (ix) Tracking controls;
- (x) Non-stormwater management measures to prevent illicit discharges and control storm water pollution sources;
- (xi) Waste management measures;
- (xii) Preservation of natural hydrologic features where feasible;
- (xiii) Preservation of riparian buffers and corridors where feasible;
- (xiv) Evaluation and maintenance of all BMPs, until removed; and
- (xv) Retention, reduction, and proper management of all storm water pollutant discharges on site to the MEP standard.

(b) Erosion and Sediment Controls:

- (i) Erosion prevention. Erosion prevention is to be used as the most important measure for keeping sediment on site during construction;
- (ii) Sediment controls. Sediment controls are to be used as a supplement to erosion prevention for keeping sediment on-site during construction;

- (iii) Slope stabilization must be used on all active slopes during rain events regardless of the season and on all inactive slopes during the rainy season and during rain events in the dry season;
 - (iv) Permanent revegetation or landscaping as early as feasible; and
 - (v) Erosion and sediment controls must be required during the construction of unpaved roads.
- (2) Each Copermittee must implement, or require implementation of, enhanced¹⁷ measures to address the threat to water quality posed by all construction sites tributary to CWA section 303(d) water body segments impaired for sediment or turbidity. Each Copermittee must also implement, or require implementation of, enhanced, measures for construction sites within, or adjacent to, or discharging directly to receiving waters within environmentally sensitive areas (as defined in Attachment C of this Order).
- (3) Active/Passive Sediment Treatment (AST): Each Copermittee must require implementation of AST for sediment at construction sites (or portions thereof) that are determined by the Copermittee to be an exceptional threat to water quality. In evaluating the threat to water quality, the following factors must be considered by the Copermittee:
- (a) Soil erosion potential or soil type;
 - (b) The site's slopes;
 - (c) Project size and type;
 - (d) Sensitivity of receiving water bodies;
 - (e) Proximity to receiving water bodies;
 - (f) Non-storm water discharges;
 - (g) Ineffectiveness of other BMPs;
 - (h) Proximity and sensitivity of aquatic threatened and endangered species of concern;
 - (i) Known effects of AST chemicals; and
 - (j) Any other relevant factors.
- (4) Implement BMPs: Each Copermittee must implement, or require the implementation of, the designated minimum BMPs and any additional measures necessary to comply with this Order at each construction site within its jurisdiction year round. BMP implementation requirements, however, can vary based on wet and dry seasons. Dry season BMP implementation must plan for and address unseasonal rain events that may occur during the dry season (May 1 through September 30).

¹⁷ Enhanced BMPs are control actions specifically targeted to the pollutant or condition of concern and of higher quality and effectiveness than the minimum control measures otherwise required. Enhanced in this Order means better, not simply more, BMPs.

e. INSPECTION OF CONSTRUCTION SITES

Each Copermittee must conduct construction site inspections for compliance with its ordinances (grading, storm water, etc.), permits (construction, grading, etc.), and this Order. Priorities for inspecting sites must consider the nature and size of the construction activity, topography, and the characteristics of soils and receiving water quality.

- (1) During the rainy season, each Copermittee must inspect at least every two weeks, all construction sites within its jurisdiction meeting any of the following criteria:
 - (a) All sites 30 acres or more in size with rough grading or with active, unstabilized slopes occurring during the rainy season;
 - (b) All sites one acre or more, and within the same hydrologic subarea and tributary to a CWA section 303(d) water body segment impaired for sediment; or within, directly adjacent to, or discharging directly to a receiving water within an ESA; and
 - (c) Other sites determined by the Copermittees or the San Diego Water Board as a significant threat to water quality. In evaluating threat to water quality, the following factors must be considered: (1) soil erosion potential; (2) site slope; (3) project size and type; (4) sensitivity of receiving water bodies; (5) proximity to receiving water bodies; (6) non-storm water discharges; (7) known past record of non-compliance by the operators of the construction site; and (8) any other relevant factors.
- (2) During the rainy season, each Copermittee must inspect at least monthly, all construction sites with one acre or more of soil disturbance not meeting the criteria specified above in section F.2.e.(1).
- (3) During the rainy season, each Copermittee must inspect construction sites less than one acre in size as needed to ensure compliance with its ordinances and this Order.
- (4) Each Copermittee must inspect all construction sites as needed during the dry season. Sites meeting the criteria in section F.2.e.(1) must be inspected at least once in August or September each year.
- (5) Re-inspections: Based upon site inspection findings, each Copermittee must implement all follow-up actions (i.e., re-inspection, enforcement) necessary to comply with this Order. Reinspection frequencies must be determined by each Copermittee based upon the severity of deficiencies, the nature of the construction activity, and the characteristics of soils and receiving water quality.

- (6) Inspections of construction sites must include, but not be limited to:
- (a) Check for coverage under the General Construction Permit (Notice of Intent (NOI) and/or Waste Discharge Identification No.) during initial inspections;
 - (b) Assessment of compliance with Copermittee ordinances and permits related to runoff, including the implementation and maintenance of designated minimum BMPs;
 - (c) Assessment of BMP effectiveness;
 - (d) Visual observations for non-storm water discharges, potential illicit connections, and potential discharge of pollutants in storm water runoff;
 - (e) Review of site monitoring data results, if the site monitors its runoff
 - (f) Education and outreach on storm water pollution prevention, as needed; and
 - (g) Creation of a written or electronic inspection report.
- (7) The Copermittees must track the number of inspections for each inventoried construction site throughout the reporting period to verify that each site is inspected at the minimum frequencies required.

f. ENFORCEMENT OF CONSTRUCTION SITES

- (1) Each Copermittee must develop and implement an escalating enforcement process that achieves prompt corrective actions at construction sites for violations of the Copermittee's water quality protection permits, requirements, and ordinances. This enforcement process must include authorizing the Copermittee's construction site inspectors to take immediate enforcement actions when appropriate and necessary. The enforcement process must include appropriate sanctions such as stop work orders, non-monetary penalties, fines, bonding requirements, and/or permit denials for non-compliance.
- (2) Each Copermittee must be able to respond to construction complaints received from third-parties and to ensure the San Diego Water Board that corrective actions have been implemented, if warranted.

g. REPORTING OF NON-COMPLIANT SITES

- (1) In addition to the notification requirements in Attachment B, each Copermittee must notify the San Diego Water Board when the Copermittee issues high level enforcement (as defined in the Copermittee's JRMP) to a construction site that poses a significant threat to water quality in its jurisdiction as a result of violations of its storm water ordinances.
- (2) Each Copermittee must annually notify the San Diego Water Board, prior to the commencement of the rainy season, of all construction sites with alleged violations that pose a significant threat to water quality. Information may be

provided as part of the JRMP annual report if submitted prior to the rainy season. Information provided must include, but not be limited to, the following:

- (a) WDID number if enrolled under the General Construction Permit
- (b) Site Location, including address
- (c) Current violations or suspected violations

3. EXISTING DEVELOPMENT COMPONENT

a. MUNICIPAL

Each Copermittee must implement a municipal program for the Copermittee's areas and activities that meets the requirements of this section, prevents illicit discharges into the MS4, reduces municipal discharges of storm water pollutants from the MS4 to the MEP, and prevents municipal discharges from the MS4 from causing or contributing to a violation of water quality standards.

(1) Source Identification / Inventory

Each Copermittee must maintain an updated watershed-based inventory of all its municipal areas and those activities that have the potential to generate pollutants. The inventory must include the name, address (if applicable), and a description of the area/activity; which pollutants are potentially generated by the area/activity; whether the area/activity is adjacent to an ESA; and identification of whether the area/activity is tributary to and within the same hydrologic subarea as a CWA section 303(d) water body segment and generates pollutants for which the water body segment is impaired. Linear facilities, such as roads, streets, and highways, do not need to be individually inventoried. The use of an automated database system, such as Geographical Information Systems (GIS) is highly recommended.

(2) General BMP Implementation

- (a) Pollution Prevention: Each Copermittee must implement pollution prevention methods in its municipal program and must require their use by appropriate departments, personnel, and contractors.
- (b) Designate Minimum BMPs: Each Copermittee must designate a minimum set of BMPs for all municipal areas and those activities that have the potential to generate pollutants. The designated minimum BMPs for municipal areas and activities must be area or activity specific as appropriate.

(c) Each Copermittee must designate BMPs for special events that are expected to generate significant trash and litter. Controls to consider must include:

- (i) Temporary screens on catch basins and storm drain inlets;
- (ii) Temporary fencing to prevent windblown trash from entering adjacent water bodies and MS4 channels;
- (iii) Proper management of trash and litter;
- (iv) Catch basin cleaning following the special event and prior to an anticipated rain event;
- (v) Street sweeping of roads, streets, highways and parking facilities following the special event; and
- (vi) Other equivalent controls.

(d) Designate BMPs for ESAs and 303(d) Impairments: Each Copermittee must designate enhanced measures for its municipal areas and activities tributary to and within the same hydrologic subarea as CWA section 303(d) impaired water body segments when an area or those activities have the potential to generate pollutants for which the water body segment is impaired. Each Copermittee must also designate additional controls for its municipal areas and activities within or directly adjacent to or discharging directly to receiving waters within environmentally sensitive areas (as defined in Attachment C of this Order).

(e) Implement BMPs: Each Copermittee must implement, or require the implementation of, the designated minimum and enhanced BMPs and any additional measures necessary based on its inventory to comply with this Order for each of its municipal area and those activities that have the potential to discharge pollution.

(3) BMP Implementation for Management of Pesticides, Herbicides, and Fertilizers

Each Copermittee must implement BMPs to reduce the contribution of storm water pollutants to the MEP associated with the application, storage, and disposal of pesticides, herbicides and fertilizers from its municipal areas and activities to MS4s and receiving waters. Such BMPs must include, at a minimum:

- (a) Educational activities, permits, certifications and other measures for municipal applicators and distributors;
- (b) Integrated Pest Management (IPM) measures that rely on non-chemical solutions;
- (c) The use of native vegetation;
- (d) Schedules for irrigation and chemical application; and

- (e) The collection and proper disposal of unused pesticides, herbicides, and fertilizers.

(4) BMP implementation for Flood Control Structures

- (a) Each Copermittee must implement procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies.
- (b) Each Copermittee must include water quality protection measures, where feasible, when retrofitting existing flood control structural devices.
- (c) Each Copermittee must evaluate its existing flood control structures as part of ongoing routine maintenance, identify structures causing or contributing to a condition of pollution, implement measures to reduce or eliminate the structure's effect on pollution, and evaluate the feasibility of retrofitting the structural flood control device. The inventory and evaluation must be completed by and submitted to the San Diego Water Board in each JRMP Annual Report.

(5) BMP Implementation for Sweeping of Municipal Areas

Where municipal area sweeping is implemented as an MS4 BMP for municipal roads, streets, highways, and parking facilities, each Copermittee must design and implement the program based on the following criteria:

- (a) Roads, streets, highways, and parking facilities identified as consistently generating the highest volumes of trash and/or debris must be swept at least two times per month.
- (b) Roads, streets, highways, and parking facilities identified as consistently generating moderate volumes of trash and/or debris must be swept at least monthly.
- (c) Roads, streets, highways, and parking facilities identified as generating low volumes of trash and/or debris must be swept as necessary, but no less than once per year.

(6) Operation and Maintenance of Municipal Separate Storm Sewer System (MS4) and Treatment Controls

- (a) Treatment Controls: Each Copermittee must implement a schedule of inspection and maintenance activities to verify proper operation of all its municipal structural treatment controls designed to reduce storm water pollutant discharges to or from its MS4s and related drainage structures.

(b) MS4 and Facilities: Each Copermittee must implement a schedule of maintenance activities for its MS4 and facilities (including but not limited to catch basins, storm drain inlets, detention basins, etc). The maintenance activities must, at a minimum, include:

- (i) Inspection and removal of accumulated waste at least once a year between May 1 and September 30 of each year for all MS4 facilities;
- (ii) Additional facilities cleaning as necessary between October 1 and April 30 of each year;
- (iii) Following two years of inspections, any MS4 facility that requires inspection and cleaning less than annually may be inspected as needed, but not less than every other year;
- (iv) Open channels and basins must be cleaned of observed anthropogenic litter in a timely manner;
- (v) Maintenance activities within open channels must not adversely impact beneficial uses;
- (vi) Record keeping of the maintenance and cleaning activities including the overall quantity of waste removed;
- (vii) Proper disposal of waste removed pursuant to applicable laws; and
- (viii) Measures to eliminate waste discharges during MS4 maintenance and cleaning activities.

(7) Infiltration From Sanitary Sewer to MS4/Provide Preventive Maintenance

(a) Each Copermittee must implement controls and measures to prevent and eliminate infiltration of seepage from sanitary sewers to MS4s through thorough, routine preventive maintenance of the MS4. Each Copermittee that operates both a municipal sanitary sewer system and a MS4 must implement controls and measures to prevent and eliminate infiltration of seepage from the sanitary sewers to the MS4s that must include overall sanitary sewer and MS4 surveys and thorough, routine preventive maintenance of both.

(b) Each Copermittee must implement controls to limit infiltration of seepage from sanitary sewers to municipal separate storm sewer systems where necessary. Such controls must include:

- (i) Adequate plan checking for construction and new development;
- (ii) Incident response training for its municipal employees that identify sanitary sewer spills;
- (iii) Code enforcement inspections;
- (iv) MS4 maintenance and inspections;
- (v) Interagency coordination with sewer agencies; and

- (vi) Proper education of its municipal staff and contractors conducting field operations on the MS4 or its municipal sanitary sewer (if applicable).

(8) Inspection of Municipal Areas and Activities

- (a) At a minimum, each Copermittee must inspect the following high priority municipal areas and activities annually:

- (i) Roads, Streets, Highways, and Parking Facilities;
- (ii) Flood Management Projects and Flood Control Devices not otherwise inspected per Section F.3.a.(6)(b);
- (iii) Areas and activities tributary to and within the same hydrologic subarea as a CWA section 303(d) impaired water body segment, where an area or activity generates pollutants for which the water body segment is impaired;
- (iv) Areas and activities within or adjacent to or discharging directly to receiving waters within environmentally sensitive areas (as defined in Attachment C of this Order);
- (v) Municipal Facilities:
 - [a] Active or closed municipal landfills;
 - [b] Publicly owned treatment works (including water and wastewater treatment plants) and sanitary sewage collection systems;
 - [c] Solid waste transfer facilities;
 - [d] Land application sites;
 - [e] Corporate yards including maintenance and storage yards for materials, waste, equipment and vehicles; and
 - [f] Household hazardous waste collection facilities.
- (vi) Municipal airfields;
- (vii) Parks and recreation facilities;
- (viii) Special event venues following special events (festivals, sporting events, etc.);
- (ix) Power washing activities; and
- (x) Other municipal areas and activities that the Copermittee determines may contribute a significant pollutant load to the MS4.

- (b) Other municipal areas and activities must be inspected as needed and in response to water quality data, valid public complaints, and findings from municipal or contract staff.

- (c) Based upon site inspection findings, each Copermittee must implement all follow-up actions necessary to comply with this Order.

(9) Enforcement of Municipal Areas and Activities

Each Copermittee must enforce its storm water ordinance for all its municipal areas and activities as necessary to maintain compliance with this Order.

(10) Copermittee Maintained Unpaved Roads Maintenance

- (a) The Copermittees must develop, where they do not already exist, and implement or require implementation of BMPs for erosion and sediment control measures during their maintenance activities on Copermittee maintained unpaved roads, particularly in or adjacent to receiving waters.
- (b) The Copermittees must develop and implement or require implementation of appropriate BMPs to minimize impacts on streams and wetlands during their unpaved road maintenance activities.
- (c) The Copermittees must maintain as necessary their unpaved roads adjacent to streams and riparian habitat to reduce erosion and sediment transport;
- (d) Re-grading of unpaved roads during maintenance must be sloped outward where consistent with road engineering safety standards or alternative equally effective BMPs must be implemented to minimize erosion and sedimentation from unpaved roads; and
- (e) Through their maintenance of unpaved roads, the Copermittees must examine the feasibility of replacing existing culverts or design of new culverts or bridge crossings to reduce erosion and maintain natural stream geomorphology.

b. COMMERCIAL / INDUSTRIAL

Each Copermittee must implement a commercial / industrial program that meets the requirements of this section, prevents illicit discharges into the MS4, reduces commercial / industrial discharges of storm water pollutants from the MS4 to the MEP, and prevents commercial / industrial discharges from the MS4 from causing or contributing to a violation of water quality standards.

(1) Source Identification

- (a) Each Copermittee must maintain an updated watershed-based inventory of all industrial and commercial sites/sources within its jurisdiction (regardless of ownership) that could contribute a significant pollutant load to the MS4. The inventory must include the following minimum

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM

F.3 EXISTING DEVELOPMENT

F.3.a. MUNICIPAL

F.3.b. COMMERCIAL / INDUSTRIAL

information for each industrial and commercial site/source: name; address; pollutants potentially generated by the site/source; and identification of whether the site/source is tributary to a CWA §303(d) water body segment and generates pollutants for which the water body segment is impaired; and a narrative description including SIC codes which best reflects the principal products or services provided by each facility.

At a minimum, the following sites/sources must be included in the inventory:

(i) Commercial Sites/Sources:

- [a] Automobile repair, maintenance, fueling, or cleaning;
- [b] Airplane repair, maintenance, fueling, or cleaning;
- [c] Boat repair, maintenance, fueling, or cleaning;
- [d] Equipment repair, maintenance, fueling, or cleaning;
- [e] Automobile and other vehicle body repair or painting;
- [f] Mobile automobile or other vehicle washing;
- [g] Automobile (or other vehicle) parking lots and storage facilities;
- [h] Retail or wholesale fueling;
- [i] Pest control services;
- [j] Eating or drinking establishments, including such retail establishments with food markets;
- [k] Mobile carpet, drape or furniture cleaning;
- [l] Cement mixing or cutting;
- [m] Masonry;
- [n] Painting and coating;
- [o] Botanical or zoological gardens and exhibits;
- [p] Landscaping;
- [q] Nurseries and greenhouses;
- [r] Golf courses, parks and other recreational areas/facilities;
- [s] Cemeteries;
- [t] Pool and fountain cleaning;
- [u] Marinas;
- [v] Portable sanitary services;
- [w] Building material retailers and storage;
- [x] Animal boarding facilities and kennels;
- [y] Mobile pet services;
- [z] Power washing services;
- [aa] Plumbing services; and
- [bb] Other sites and sources with a history of un-authorized discharges to the MS4.

(ii) Industrial Sites/Sources:

- [a] Industrial Facilities, as defined at 40 CFR § 122.26(b)(14), including those subject to the General Industrial Permit or other individual NPDES permit;
- [b] Operating and closed landfills;
- [c] Facilities subject to SARA Title III; and
- [d] Hazardous waste treatment, disposal, storage and recovery facilities.

(iii) ESAs and 303(d) Listed Waterbodies: All other commercial or industrial sites/sources tributary to and within the same hydrologic subarea as a CWA Section 303(d) impaired water body segment, where the site/source generates pollutants for which the water body segment is impaired. All other commercial or industrial sites/sources within or directly adjacent to or discharging directly to receiving waters within environmentally sensitive areas (as defined in Attachment C of this Order) or that generate pollutants tributary to and within the same hydrologic subarea as an observed exceedance of an action level.

(iv) All other commercial or industrial sites/sources that the Copermittee determines may contribute a significant pollutant load to the MS4.

(2) General BMP Implementation

- (a) Pollution Prevention: Each Copermittee must require the use of pollution prevention methods by the inventoried industrial and commercial sites/sources.
- (b) Designate / Update Minimum BMPs: Each Copermittee must designate a minimum set of BMPs for all inventoried industrial and commercial sites/sources. Where BMPs have already been designated, each Copermittee must review and update its existing BMPs for adequacy no later than with the submittal of the JRMP. Copermittees may continue to regularly review and update their designated BMPs for adequacy and subsequently submit any updates in their Annual Report. The designated minimum BMPs must be specific to facility types and pollutant-generating activities, as appropriate.
- (c) Designate Enhanced BMPs for ESAs and 303(d) Impairments: Each Copermittee must designate enhanced measures for inventoried industrial and commercial sites/sources tributary to and within the same hydrologic subarea as CWA section 303(d) impaired water body segments (where a site/source generates pollutants for which the water body segment is

impaired). Each Copermittee must also designate additional controls for industrial and commercial sites/sources within or directly adjacent to or discharging directly to coastal lagoons, the ocean, or other receiving waters within environmentally sensitive areas (as defined in Attachment C of this Order). Copermittees may continue to regularly review and update their designated enhanced BMPs for adequacy and subsequently submit any updates in their next Annual Report.

- (d) Implement BMPs: Each Copermittee must implement, or require the implementation of, the designated minimum and enhanced BMPs and any additional measures necessary based on inspections, incident responses, and water quality data to comply with this Order at each industrial and commercial site/source within its jurisdiction.

(3) Mobile Businesses Program

- (a) Each Copermittee must develop and implement a program to reduce the discharge of storm water pollutants from mobile businesses to the MEP and to prohibit non-storm water discharges pursuant to Section B of this Order. Each Copermittee must keep as part of its commercial source inventory a listing of mobile businesses known to operate within its jurisdiction that conduct services listed above in section F.3.b.(1)(a). The program must include:
 - (i) Development and implementation of minimum standards and BMPs to be required for each of the various types of mobile businesses;
 - (ii) Development and implementation of an enforcement strategy which specifically addresses the unique characteristics of mobile businesses;
 - (iii) Notification of those mobile businesses known to operate within the Copermittee's jurisdiction of the minimum standards and BMP requirements;
 - (iv) Development and implementation of an outreach and education strategy; and
 - (v) Inspection of mobile businesses as needed to implement the program.
- (b) If they choose to, the Copermittees may cooperate in developing and implementing their programs for mobile businesses, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education.

(4) Inspection of Industrial and Commercial Sites/Sources

Each Copermittee must conduct industrial and commercial site inspections for compliance with its ordinances, permits, and this Order. Mobile businesses must be inspected as needed pursuant to section F.3.b.(3).

(a) Inspection Procedures: Inspections must include but not be limited to:

- (i) Review of BMP implementation plans not including SSMPs required pursuant to section F.1.d, if the site uses or is required to use such a plan;
- (ii) Review of facility monitoring data, if the site monitors its runoff;
- (iii) Check for coverage under the General Industrial Permit (Notice of Intent (NOI) and/or Waste Discharge Identification Number), if applicable;
- (iv) Assessment of compliance with Copermittee ordinances and Copermittee issued permits related to runoff;
- (v) Assessment of the implementation, maintenance and effectiveness of the designated minimum and/or enhanced BMPs;
- (vi) Visual observations for non-storm water discharges, potential illicit connections, and potential discharge of pollutants in storm water runoff; and
- (vii) Education and training on storm water pollution prevention, as conditions warrant.

(b) Frequencies: At a minimum all sites determined to pose a high threat to water quality must be inspected each year. All inventoried sites must be inspected at least once during a five year period. In evaluating threat to water quality, each Copermittee must consider, at a minimum, the following:

- (i) Type of activity (SIC code);
- (ii) Materials used at the facility;
- (iii) Wastes generated;
- (iv) Pollutant discharge potential, including whether the facility generates a pollutant that exceeds an action level;
- (v) Non-storm water discharges;
- (vi) Size of facility;
- (vii) Proximity to receiving water bodies;
- (viii) Sensitivity of receiving water bodies;
- (ix) Whether the facility is subject to the General Industrial Permit or an individual NPDES permit;
- (x) Whether the facility has filed a No Exposure Certification/Notice of Non-Applicability;
- (xi) Facility design;

- (xii) Total area of the site, portion of the site where industrial or commercial activities occur, and area of the site exposed to rainfall and runoff;
 - (xiii) The facility's compliance history; and
 - (xiv) Any other relevant factors.
- (c) Third-Party Certifications: Each Copermittee may propose to develop and implement a third party certification program subject to San Diego Water Board Executive Officer acceptance. This program would verify industrial and commercial site/source compliance with the Copermittees' ordinances, permits, and this Order. To the extent that third party certifications are conducted to fulfill the requirements of Section F.3.b.(4) above, the Copermittee retains responsibility for compliance with this Order and will be responsible for conducting and documenting quality assurance and quality control of the third-party certifications.

The Copermittee's proposed third party certification program must include the following:

- (i) A description of the procedures and measures for quality assurance and quality control;
 - (ii) A listing of sites/sources that may and may not participate in the program;
 - (iii) The representative percentage of certifications that would qualify to satisfy the inspection requirements in section F.3.b(4)(c) above;
 - (iv) Photo documentation of potential storm water violations identified during the third party inspection;
 - (v) Reporting to the Copermittee of identified significant potential violations, including imminent or observed illegal discharges, within 24 hours of the third party inspection;
 - (vi) Reporting to the Copermittee of all findings within one week of the inspection being conducted; and
 - (vii) Copermittee follow-up and/or enforcement actions for identified potential storm water violations within two business days of the potential violation report receipt.
- (d) Based upon site inspection findings, each Copermittee must implement all follow-up actions and enforcement necessary to comply with this Order.
- (e) To the extent that the San Diego Water Board has conducted an inspection of an industrial site during a particular year, the requirement for the responsible Copermittee to inspect this facility during the same year is deemed satisfied.

- (f) The Copermittees must track the number of inspections for the inventoried industrial and commercial sites/sources throughout the reporting period to verify that the sites/sources are inspected at the minimum frequencies listed in this Order.

(5) Enforcement of Industrial and Commercial Sites/Sources

Each Copermittee must enforce its storm water ordinance for all industrial and commercial sites/sources as necessary to maintain compliance with this Order. Copermittee ordinances or other regulatory mechanisms must include appropriate sanctions to achieve compliance. Sanctions must include the following tools or their equivalent: Non-monetary penalties, fines, bonding requirements, liens and/or permit denials for non-compliance.

(6) Reporting of Non-Compliant Sites

Each Copermittee must annually notify the San Diego Water Board, prior to the commencement of the wet season, of any unresolved high level enforcement action (as defined in the Copermittees' JRMP) that poses a significant threat to water quality in its jurisdiction as a result of violations of their storm water ordinances.

C. RESIDENTIAL

Each Copermittee must implement a residential program that meets the requirements of this section, prevents illicit discharges into the MS4, reduces residential discharges of storm water pollutants from the MS4 to the MEP, and prevents residential discharges from the MS4 from causing or contributing to a violation of water quality standards.

(1) Threat to Water Quality Prioritization

Each Copermittee must identify residential areas and activities that pose a high threat to water quality. At a minimum, these must include:

- (a) Automobile repair, maintenance, washing, and parking;
- (b) Home and garden care activities and product use (pesticides, herbicides, and fertilizers);
- (c) Disposal of trash, pet waste, green waste, and household hazardous waste (e.g., paints, cleaning products);
- (d) Any other residential source that the Copermittee determines may contribute a significant pollutant load to the MS4;

- (e) Any residential areas tributary to and within the same hydrologic subarea as a CWA section 303(d) impaired water body, where the residence generates pollutants for which the water body is impaired; and
- (f) Any residential areas within or directly adjacent to or discharging directly to receiving waters within an environmentally sensitive area (as defined in Attachment C of this Order)

(2) BMP Implementation

- (a) Pollution Prevention: Each Copermittee must actively encourage the use of pollution prevention methods by residents.
- (b) Designate BMPs: Each Copermittee must designate minimum BMPs for high-threat-to-water quality residential areas and activities. The designated minimum BMPs for high-threat-to-water quality residential areas and activities must be area or activity specific.
- (c) Hazardous Waste BMPs: Each Copermittee must facilitate the proper management and disposal of used oil, toxic materials, and other household hazardous wastes. Such facilitation must include educational activities, public information activities, and establishment of collection sites operated individually and/or jointly by the Copermittee(s) or a private entity. Curbside collection of household hazardous wastes is encouraged.
- (d) Implement BMPs: Each Copermittee must implement, or require implementation of, the designated minimum BMPs and any additional measures necessary to comply with Sections A and B of this Order.
- (e) Each Copermittee must implement, or require implementation of, BMPs for residential areas and activities that have not been designated a high threat to water quality, as necessary.

(3) Enforcement of Residential Areas and Activities

Each Copermittee must enforce its storm water ordinance for all residential areas and activities as necessary to maintain compliance with this Order.

(4) Common Interest Areas (CIA) / Home Owner Association (HOA) Areas, and Mobile Home Parks

Each Copermittee must ensure that effective measures exist and are implemented or required to be implemented to ensure that runoff within and from common interest developments, including areas managed by associations and mobile home parks, and meets the objectives of this section and Order.

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM

F.3 EXISTING DEVELOPMENT

F.3.c. RESIDENTIAL

F.3.d. RETROFITTING

(a) BMP Implementation: Each Copermittee must implement or require implementation of management measures based on a review of pertinent factors, including:

- (i) Maintenance duties and procedures typically used by CIA/HOA maintenance associations within its jurisdiction;
- (ii) Whether streets and storm drains are publicly or privately owned within the CIA/HOA or mobile home park;
- (iii) Whether the CIA/HOA area or mobile home park has been identified as a high priority residential area based on an evaluation of the site potential to generate pollutants contributing to a 303(d) listed waterbody or an observed action level exceedance; and
- (iv) Other activities conducted or authorized by the HOA that may pose a significant risk to inland receiving waters.

(b) Legal Authority and Enforcement: By July 1, 2012, each Copermittee must review, and if necessary update, its Municipal Code to verify that they have the legal authority to implement and enforce its ordinances within CIA/HOA areas and mobile home parks.

d. RETROFITTING EXISTING DEVELOPMENT

Each Copermittee must develop and implement a retrofitting program that meets the requirements of this section. The goals of the existing development retrofitting program are to address the impacts of existing development through retrofit projects that reduce impacts from hydromodification, promote LID, support riparian and aquatic habitat restoration, reduce the discharges of storm water pollutants from the MS4 to the MEP, and prevent discharges from the MS4 from causing or contributing to a violation of water quality standards. Where feasible, at the discretion of the Copermittee, the existing development retrofitting program may be coordinated with flood control projects and other infrastructure improvement programs.

(1) The Copermittee(s) must identify and inventory existing areas of development (i.e. municipal, industrial, commercial, residential) as candidates for retrofitting. Potential retrofitting candidates must include but are not limited to:

- (a) Areas of development that generate pollutants of concern to a TMDL or an ESA;
- (b) Receiving waters that are channelized or otherwise hardened;
- (c) Areas of development tributary to receiving waters that are channelized or otherwise hardened;

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM

F.3 EXISTING DEVELOPMENT

F.3.c. RESIDENTIAL

F.3.d. RETROFITTING

- (d) Areas of development tributary to receiving waters that are significantly eroded; and
 - (e) Areas of development tributary to an ASBS or SWQPA.
- (2) Each Copermittee must evaluate and rank the inventoried areas of existing developments to prioritize retrofitting. Criteria for evaluation must include but is not limited to:
- (a) Feasibility;
 - (b) Cost effectiveness;
 - (c) Pollutant removal effectiveness, including reducing pollutants exceeding action level;
 - (d) Tributary area potentially treated;
 - (e) Maintenance requirements;
 - (f) Landowner cooperation;
 - (g) Neighborhood acceptance;
 - (h) Aesthetic qualities;
 - (i) Efficacy at addressing concern; and
 - (j) Potential improvements on public health and safety.
- (3) Each Copermittee must consider the results of the evaluation in prioritizing work plans for the following year in accordance with Sections G.1 and J. Highly feasible projects expected to benefit water quality should be given a high priority to implement source control and treatment control BMPs. Where feasible, the retrofit projects may be designed in accordance with the SSMP requirements within sections F.1.d.(3) through F.1.d.(8) and the Hydromodification requirements in Section F.1.h.
- (4) The Copermittees must cooperate with private landowners to encourage site specific retrofitting projects. The Copermittee must consider the following practices in cooperating and encouraging private landowners to retrofit their existing development:
- (a) Demonstration retrofit projects;
 - (b) Retrofits on public land and easements that treat runoff from private developments;
 - (c) Education and outreach;
 - (d) Subsidies for retrofit projects;
 - (e) Requiring retrofit projects as enforcement, mitigation or ordinance compliance;
 - (f) Public and private partnerships; and
 - (g) Fees for existing discharges to the MS4 and reduction of fees for retrofit implementation.

- (5) The known completed retrofit BMPs must be tracked in accordance with Section F.1.f. Retrofit BMPs on publicly owned properties must be inspected per section F.1.f. Privately owned retrofit BMPs must be inspected as needed.
- (6) Where constraints on retrofitting preclude effective BMP deployment on existing developments at locations critical to protect receiving waters (as identified in section F.3.d.(1)), a Copermittee may propose a regional mitigation project to improve water quality. Such regional projects may include but are not limited to:
 - (a) Regional water quality treatment BMPs;
 - (b) Urban creek or wetlands restoration and preservation;
 - (c) Daylighting and restoring underground creeks;
 - (d) Localized rainfall storage and reuse to the extent such projects are fully protective of downstream water rights;
 - (e) Hydromodification project; and
 - (f) Removal of invasive plant species.
- (7) A retrofit project or regional mitigation project may qualify as a Watershed Water Quality Activity provided it meets the requirements in section G. Watershed Workplan.

4. ILLICIT DISCHARGE DETECTION AND ELIMINATION

Each Copermittee must implement a program that meets the requirements of this section to actively detect and eliminate illicit discharges and disposal into the MS4. The program must address all types of illicit discharges and connections excluding those non-storm water discharges not prohibited by the Copermittee in accordance with section B of this Order.

a. PREVENT AND DETECT ILLICIT DISCHARGES AND CONNECTIONS

Each Copermittee must implement measures to prevent and detect illicit discharges to the MS4.

- (1) Legal Authority: Each Copermittee must retain legal authority to prevent and eliminate illicit discharges and connections to the MS4.
- (2) Inspections: Each Copermittee must include use of appropriate Copermittee personnel and contractors to assist in identifying illicit discharges and connections during their daily activities.

- (a) Visual inspections for illegal discharges and connections must be conducted during routine maintenance of all MS4 facilities.
- (b) Copermittee staff and contractors conducting non-MS4 field operations must be trained to report suspected illegal discharges and connections to proper Copermittee staff.

b. MAINTAIN MS4 MAP

Each Copermittee must maintain an updated map of its entire MS4 and the corresponding drainage areas within its jurisdiction. The use of GIS is strongly encouraged. The MS4 map must include all segments of the storm sewer system owned, operated, and maintained by the Copermittee, as well as all known locations of inlets that discharge and/or collect runoff into the Copermittee's MS4, all known locations of connections with other MS4s (e.g. Caltrans), and all known locations of all the outfalls that discharge runoff from the Copermittee's MS4. The accuracy of the MS4 map must be confirmed during dry weather field screening and analytical monitoring and must be updated at least annually. The MS4 map including any GIS layers must be submitted with the updated JRMP.

c. FACILITATE PUBLIC REPORTING OF ILLICIT DISCHARGES AND CONNECTIONS - PUBLIC HOTLINE

Each Copermittee must promote, publicize and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s. Each Copermittee must facilitate public reporting through development and operation of a public hotline. Public hotlines can be Copermittee-specific or shared by Copermittees. All storm water hotlines must be capable of receiving reports in both English and Spanish 24 hours per day and seven days per week. All reported incidents, and how each was resolved, must be summarized in each Copermittee's Annual Report.

d. DRY WEATHER FIELD SCREENING AND ANALYTICAL MONITORING

Each Copermittee must conduct dry weather field screening and analytical monitoring of MS4 outfalls and other portions of its MS4 within its jurisdiction to detect illicit discharges and connections in accordance with Receiving Waters and MS4 Discharge Monitoring and Reporting Program No. R9-2010-0016 in Attachment E of this Order.

e. INVESTIGATION / INSPECTION AND FOLLOW-UP

Each Copermittee must implement procedures to investigate and inspect portions of its MS4 that, based on the results of field screening, analytical monitoring, or other appropriate information, indicate a reasonable potential of containing illicit discharges, illicit connections, or other sources of pollutants in non-storm water.

- (1) Develop response criteria for data: Each Copermittee must develop, update, and use numeric criteria action levels (or other actions level criteria where appropriate) to determine when follow-up investigations will be performed in response to water quality monitoring. The criteria must include required non-storm water action levels (see Section C) and a consideration of 303(d)-listed waterbodies and environmentally sensitive areas (ESAs) as defined in Attachment C.
- (2) Respond to data: Each Copermittee must investigate portions of the MS4 for which water quality data or conditions indicates a potential illegal discharge or connection.
 - (a) Obvious illicit discharges (i.e. color, odor, or significant exceedances of action levels) must be investigated immediately.
 - (b) Field screen data: Within two business days of receiving dry weather field screening results that exceed action levels, the Copermittee(s) having jurisdiction must either initiate an investigation to identify the source of the discharge or document the rationale for why the discharge does not pose a threat to water quality and does not need further investigation. This documentation must be included in the Annual Report.
 - (c) Analytical data: Within five business days of receiving analytical laboratory results that exceed action levels, the Copermittee(s) having jurisdiction must either initiate an investigation to identify the source of the discharge or document the rationale for why the discharge does not pose a threat to water quality and does not need further investigation. This documentation must be included in the Annual Report.
- (3) Respond to notifications: Each Copermittee must respond to and resolve each reported incident (e.g., public hotline, staff notification, etc.) made to the Copermittee in a timely manner. Criteria may be developed to assess the validity of, and prioritize the response to, each report.

f. ELIMINATION OF ILLICIT DISCHARGES AND CONNECTIONS

Each Copermittee must take immediate action to initiate steps necessary to eliminate all detected illicit discharges, illicit discharge sources, and illicit connections after detection within its jurisdiction. Elimination measures may include an escalating series of enforcement actions for those illicit discharges that are not a serious threat to public health or the environment. Illicit discharges that pose a serious threat to the public's health or the environment must be eliminated immediately.

g. ENFORCE ORDINANCES

Each Copermittee must implement and enforce its ordinances, orders, or other legal authority to prevent illicit discharges and connections to its MS4 and to eliminate detected illicit discharges and connections to its MS4.

h. PREVENT AND RESPOND TO SEWAGE SPILLS (INCLUDING FROM PRIVATE LATERALS AND FAILING SEPTIC SYSTEMS) AND OTHER SPILLS

Each Copermittee must implement management measures and procedures (including a notification mechanism) to prevent, respond to, contain and clean up all sewage (see below) and other spills that may discharge into its MS4 from any source (including private laterals and failing septic systems). Copermittees must coordinate with spill response teams to prevent entry of spills into the MS4 and contamination of surface water, ground water and soil. Each Copermittee must coordinate spill prevention, containment and response activities throughout all appropriate Copermittee departments, programs and agencies so that maximum water quality protection is available at all times.

5. PUBLIC PARTICIPATION COMPONENT

Each Copermittee must incorporate a mechanism for public participation in the updating, development, and implementation of the JRMP.

6. EDUCATION COMPONENT

Each Copermittee must implement education programs to (1) measurably increase the knowledge regarding MS4s, impacts of runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to measurably change the behavior of target communities and thereby reduce pollutants in storm water discharges and eliminate prohibited non-storm water discharges to MS4s and the environment. At a minimum, the education programs must meet the requirements of this section and address the following target communities:

DIRECTIVES F: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
F.4 ILLICIT DISCHARGE DETECTION AND ELIMINATION
F.5 PUBLIC PARTICIPATION
F.6 EDUCATION

- Copermittee Departments and Personnel
- New Development / Redevelopment Project Applicants, Developers, Contractors, Property Owners, and other Responsible Parties
- Construction Site Owners and Operators
- Commercial Owners and Operators
- Industrial Owners and Operators
- Residential Community and General Public

a. GENERAL REQUIREMENTS

- (1) At a minimum, the Copermittee education programs must educate each target community on the following topics, as appropriate to the target community's potential storm water and non-storm water discharges to the MS4:
 - (a) Applicable water quality laws, regulations, permits, and requirements;
 - (b) Best management practices;
 - (c) General runoff concepts;
 - (d) Existing water quality, including local water quality conditions, impaired waterbodies and environmentally sensitive areas; and
 - (e) Other topics, as determined by the Copermittee(s), such as public reporting mechanisms, water conservation, low-impact development techniques, and public health and vector issues associated with runoff.
- (2) Each Copermittee must implement educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.

b. SPECIFIC REQUIREMENTS

(1) Copermittee Departments and Personnel

- (a) Each Copermittee must implement an education program so its staff and contractors (and Planning Boards and Elected Officials, if applicable) responsible for implementing the requirements of this Order have an understanding of the following topics as applicable to their responsibilities:
 - (i) Applicable water quality laws and regulations;
 - (ii) The potential effects and impacts that Copermittee departments and personnel activities related to their job duties can have on water quality);
 - (iii) Plan review policies and procedures to verify consistent application;
 - (iv) Methods of minimizing impacts to receiving water quality resulting from development, construction, and other potential pollutant generating activities;

- (v) Proper implementation of erosion and sediment control, source control, treatment control, and other BMPs to minimize the impacts to receiving water quality resulting from development, construction, and other potential pollutant generating activities;
 - (vi) Applicable recordkeeping and tracking mechanisms; and
 - (vii) Inspection and enforcement procedures, BMP implementation, and review of monitoring data.
- (b) Each Copermittee must train its staff responsible for oversight and conducting storm water compliance inspections and enforcement of construction activities (e.g. construction, building, code enforcement, grading review staffs, inspectors, and other responsible construction staff) annually prior to the rainy season.
- (c) Each Copermittee must train its staff responsible for conducting storm water compliance inspections and enforcement of industrial and commercial facilities at least once a year.

(2) New Development / Redevelopment and Construction Sites

As early in the planning and development process as possible and all through the permitting and construction process, each Copermittee must notify parties responsible for the project about the importance of educating all construction workers in the field about storm water issues and BMPs, in addition to the topics under Section F.6.a.(1).

(3) Commercial and Industrial Sites / Sources

At least once during the five-year period of this Order, each Copermittee must notify the owner/operator of each of its inventoried commercial and industrial site/source of the BMP requirements applicable to the site/source.

(4) Residential and General Public

Each Copermittee shall collaboratively conduct or participate in development and implementation of a program to educate residential and general public target communities. The Copermittee residential and general public education programs must address potential pollutant generating activities (e.g., car washing, mobile operations, yard maintenance) and pollutant generating products (e.g., pesticides, fertilizers, household chemicals). The target audiences of the residential and general public education programs must include underserved target audiences (e.g., disadvantaged communities), residents and managers of CIA/HOA areas, and owners and residents of mobile home parks.

G. WATERSHED WATER QUALITY WORKPLAN

Each Copermittee must collaborate with other Copermittees to develop and implement a Watershed Water Quality Workplan (Watershed Workplan) to identify, prioritize, address, and mitigate the highest priority water quality issues/pollutants in the Upper Santa Margarita Watershed.

1. Watershed Workplan Components

The work plan must, at a minimum:

- a. Characterize the receiving water quality in the watershed. Characterization must include assessment and analysis of regularly collected water quality data, reports, monitoring and analysis generated in accordance with the requirements of the Receiving Waters Monitoring and Reporting Program, as well as applicable information available from other public and private organizations. This characterization must include an updated watershed map.
- b. Identify and prioritize water quality problem(s) in terms of constituents by location, in the watershed's receiving waters. In identifying water quality problem(s), the Copermittees must, at a minimum, give consideration to TMDLs, receiving waters listed on the CWA section 303(d) list, waters with persistent violations of water quality standards, toxicity, or other impacts to beneficial uses, and other pertinent conditions.
- c. Identify the likely sources, pollutant discharges and/or other factors causing the highest water quality problem(s) within the watershed. Efforts to determine such sources must include, but not be limited to: use of information from the construction, industrial/commercial, municipal, and residential source identification programs required within the JRMP of this Order; water quality monitoring data collected as part of the Receiving Water Monitoring and Reporting Program required by this Order, and additional focused water quality monitoring to identify specific sources within the watershed.
- d. Develop a watershed BMP implementation strategy to attain receiving water quality objectives in the identified highest priority water quality problem(s) and locations. The BMP implementation strategy must include a schedule for implementation of the BMPs to abate specific receiving water quality problems and a list of criteria to be used to evaluate BMP effectiveness. Identified watershed water quality problems may be the result of jurisdictional discharges that will need to be addressed with BMPs applied in a specific jurisdiction in order to generate a benefit to the watershed. This implementation strategy must include a map of any implemented and/or proposed BMPs.
- e. Develop a strategy to monitor improvements in receiving water quality directly

resulting from implementation of the BMPs described in the Watershed Workplan. The monitoring strategy must review the necessary data to report on the measured pollutant reduction that results from proper BMP implementation. Monitoring must, at a minimum, be conducted in the receiving water to demonstrate reduction in pollutant concentrations and progression towards attainment of receiving water quality objectives.

- f. Establish a schedule for development and implementation of the Watershed strategy outlined in the Workplan. The schedule must, at a minimum, include forecasted dates of planned actions to address Provisions E.2(a) through E.2(e) and dates for watershed review meetings through the remaining portion of this Permit cycle. Annual watershed workplan review meetings must be open to the public and appropriately publically noticed such that interested parties may come and provide comments on the watershed program.

2. Watershed Workplan Implementation

Watershed Copermittee's must implement the Watershed Workplan within 90 days of submittal unless otherwise directed by the San Diego Water Board.

3. Copermittee Collaboration

Watershed Copermittees must collaborate to develop and implement the accepted Watershed Workplan. Watershed Copermittee collaboration must include frequent regularly scheduled meetings. The Copermittees must pursue efforts to obtain any interagency agreements, or other coordination efforts, with non-Copermittee owners of the MS4 (such as Caltrans, Native American tribes, and school districts) to control the contribution of pollutants from one portion of the shared MS4 to another portion of the shared MS4. The Copermittees must, as appropriate, participate in watershed management efforts to address water quality issues within the entire Santa Margarita Watershed (such as the County of San Diego and U.S. Marine Corps Camp Pendleton).

4. Public Participation

Watershed Copermittees must implement a watershed-specific public participation mechanism within each watershed. A required component of the watershed-specific public participation mechanism must be a minimum 30-day public review of and opportunity to comment on the Watershed Workplan prior to submittal to the San Diego Water Board. The Workplan must include a description of the public participation mechanisms to be used and identification of the persons or entities anticipated to be involved during the development and implementation of the Watershed Workplan.

5. Watershed Workplan Review and Updates

Watershed Copermittees must review and update the Watershed Workplan annually to identify needed changes to the prioritized water quality problem(s) listed in the workplan. All updates to the Watershed Workplan must be presented during an Annual Watershed Review Meeting. Annual Watershed Review Meetings must occur once every calendar year and be conducted by the Watershed Copermittees. Annual Watershed Review Meetings must be open to the public and adequately noticed. Individual Watershed Copermittees must also review and modify their jurisdictional programs and JRMP Annual Reports, as necessary, so that they are consistent with the updated Watershed Workplan.

6. Pyrethroid Toxicity Reduction Evaluation

The Watershed Copermittees must incorporate the pyrethroid pollutant reduction program¹⁸ into the Watershed Workplan. The pyrethroid pollutant reduction program must include the following elements:

- a. Pursue state and federal regulatory change;
- b. Implement a set of source controls targeted specifically at urban pyrethroid use;
- c. Through the annual reporting process, monitor the implementation of those controls, assess effectiveness, and identify sources or areas where additional effort is needed;
- d. Implement additional controls as needed; and
- e. Continue to monitor implementation, as well as conditions within the target receiving waters, assess effectiveness, and re-evaluate control programs.

H. FISCAL ANALYSIS

1. **Secure Resources:** Each Copermittee must exercise its full authority to secure the resources necessary to meet all requirements of this Order.
2. **Annual Analysis:** Each Copermittee must conduct an annual fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the programs required by this Order. The analysis must include estimated expenditures for the current reporting period, the preceding period, and the next reporting period.
 - a. Each analysis must include a description of the source of funds that are proposed to meet the necessary expenditures.
 - b. Each analysis must include a narrative description of circumstances resulting in a 25 percent or greater annual change for any budget line items.

¹⁸ The pyrethroid pollutant reduction program is described in the "Riverside County – Santa Margarita Region Pyrethroid Source Identification Toxicity Reduction Evaluation, Final Phase II Report", January 2009 by MACTEC.

3. Annual Reporting: Each Copermittee must submit its annual fiscal analysis with the annual JRMP report.

I. TOTAL MAXIMUM DAILY LOADS

1. The waste load allocations (WLAs) of fully approved and adopted TMDLs are incorporated as Water Quality Based Effluent Limitations on a pollutant by pollutant, watershed by watershed basis. Early TMDL requirements, including monitoring, may be required and inserted into this Order pursuant to Finding E.10.
2. The Cities of Wildomar and Murrieta must comply with the requirements and WLAs assigned to the discharges from their MS4s contributing to the Lake Elsinore/Canyon Lake (San Jacinto Watershed) Nutrient TMDLs as specified in Section VI.D.2 of the Santa Ana Water Board's Order R8-2010-0033, including relevant sections of the fact sheet and findings, and subsequent revisions thereto.

J. PROGRAM EFFECTIVENESS ASSESSMENT AND REPORTING

Beginning with the Annual Report due in 2013, each Copermittee must annually assess and report upon the effectiveness of its JRMP and Watershed Workplan implementation to (1) reduce the discharge of storm water pollutants from its MS4 to the MEP; (2) prohibit non-stormwater discharges; and (3) prevent runoff discharges from the MS4 from causing or contributing to a violation of water quality standards.

1. Program Effectiveness Assessments

a. IDENTIFY EFFECTIVENESS ASSESSMENTS

With the JRMP and Watershed Workplan submittal, each Copermittee must establish assessment measures or methods for each of the six outcome levels described by CASQA¹⁹, using data from each JRMP program component, the MRP, and the Watershed Workplan.

- (1) Assessment interval: For each established assessment measure or method, an assessment interval must be established as appropriate to the measure or method.
- (2) Projected Timeframe: For each established assessment measure or method, each Copermittee must identify the projected timeframe within which the associated outcome level can adequately assess change.

¹⁹ Effectiveness assessment outcome levels as defined by CASQA are defined in Attachment C of this Order. See "*Municipal Stormwater Program Effectiveness Assessment Guidance*" (CASQA, May 2007) for guidance for assessing program activities at the various outcome levels.

b. PERFORM ASSESSMENTS

- (1) Annually: Each year, the Copermittee must perform each applicable assessment based on the associated assessment interval, and determine whether the desired outcome has been met.
- (2) With the submittal of the Report of Waste Discharge, the Copermittees must determine whether their program implementation is resulting in the protection and/or improvement of water quality through an Integrated Assessment.

2. Respond to Assessments

- a. Where the assessments indicate that the desired outcome level has not been achieved at the end of the projected timeframe, the Copermittee must review its applicable activities and BMPs to identify any modifications and improvements needed to maximize effectiveness, as necessary to comply with this Order. If the Copermittee determines that the existing activities/BMPs are adequate, or that the projected timeframe should be extended, justification and an updated timeframe for attainment of the outcome level must be provided in the Annual Report.
- b. Each Copermittee must develop and implement a work plan and schedule to address any program modifications and improvements in response to the findings of its assessment. The work plan and schedule must be provided and updated with the applicable Annual Report. The work plan must include, at a minimum, the following:
 - (1) The problems and priorities identified during the assessment;
 - (2) A list of priority pollutants and known or suspected sources;
 - (3) A brief description of the strategy employed to reduce, eliminate or mitigate the negative impacts;
 - (4) A description and schedule for new and/or modified BMPs. The schedule is to include dates for significant milestones;
 - (5) A description of how the selected activities will address an identified high priority problem. This will include a description of the expected effectiveness and benefits of the new and/or modified BMPs;
 - (6) A description of implementation effectiveness metrics;
 - (7) A description of how efficacy results will be used to modify priorities and implementation; and
 - (8) A review of past activities implemented, progress in meeting water quality standards, and planned program adjustments.

3. Assessment and Response Reporting

Each Copermittee must include a summary of its effectiveness assessments within each Annual Report. Beginning with the FY 2012-2013 Annual Report, the Program Effectiveness reporting must include:

- a. The results of each of the effectiveness assessments performed pursuant to J.1.b, including the demonstrated CASQA effectiveness level(s);
- b. Responses to effectiveness assessments: A description of any program modifications planned in accordance with section J.2, including the work plan and identified schedule for implementation. The description must include the basis for determining that each modified activity and/or BMP represents an improvement expected to result in improved water quality; and
- c. A description of any steps to be implemented to improve the Copermittee's ability to assess program effectiveness.

K. REPORTING

The Copermittees may propose alternate reporting criteria and schedules, as part of their updated JRMP, for the Executive Officer's acceptance.

1. Runoff Management Plans

a. JURISDICTIONAL RUNOFF MANAGEMENT PLANS

- (1) The written account of the overall program to be conducted by each Copermittee to meet the jurisdictional requirements of section F of this Order is referred to as the Jurisdictional Runoff Management Plan (JRMP). Each Copermittee must revise and update its existing JRMP so that it describes all activities the Copermittee will undertake to implement the requirements of this Order. Each Copermittee must submit its updated and revised JRMP to the San Diego Water Board no later than June 30, 2012.
- (2) At a minimum, each Copermittee's JRMP must be updated and revised to demonstrate compliance with each applicable section of this Order.

b. WATERSHED WORKPLANS

Copermittees must update and revise the Watershed Workplan to describe any changes in water quality problems or priorities, and any necessary change to actions Copermittees will take to implement jurisdictional or watershed BMPs to address those identified. The Copermittees must assemble and submit the Watershed Workplan to the San Diego Water Board no later than June 30, 2012, and must implement the Workplan within 90 days unless otherwise directed by the San Diego Water Board.

2. Other Required Reports and Plans**a. SSMP UPDATES**

- (1) Copermittees must submit their updated SSMP in accordance with the applicable requirements of section F.1 with the JRMP by June 30, 2012.
- (2) Within 180 days of determination that the SSMP is in compliance with this Order's provisions, each Copermittee must amend its ordinances consistent with the SSMP and implement the updated SSMP. Any amended or new ordinances must be submitted to the San Diego Water Board the applicable Annual Report.

b. HMP

- (1) By June 30, 2013, the Copermittees must submit to the San Diego Water Board Executive Officer a draft HMP that has been reviewed by the public, including identification of the appropriate limiting range of flow rates in accordance with the applicable requirements of section F.1.h.
- (2) Within 180 of receiving San Diego Water Board comments on the draft HMP, the Copermittees must submit a final HMP that addressed the San Diego Water Board's comments.
- (3) Within 90 days of receiving a finding of adequacy from the Executive Officer each Copermittee must incorporate and implement the HMP for all Priority Development Projects.
- (4) Prior to acceptance of the HMP by the San Diego Water Board, the early implementation measures likely to be included in the HMP shall be encouraged by the Copermittees.

C. REPORT OF WASTE DISCHARGE

The Copermittees must submit to the San Diego Water Board, no later than 180 days in advance of the expiration date of this Order, a Report of Waste Discharge (ROWD) as an application for issuance of new waste discharge requirements. The fourth annual report for this Order may supplement the ROWD, provided the ROWD contains the minimum information below.

At a minimum, the ROWD must include the following: (1) Proposed changes to the Copermittees' runoff management programs; (2) Proposed changes to monitoring programs; (3) Justification for proposed changes; (4) Name and mailing addresses of the Copermittees; (5) Names and titles of primary contacts of the Copermittees; (6) Any other information necessary for the reissuance of this Order and (7) Any other information required by federal regulations for permit reapplications.

3. Annual Reports**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM (JRMP) ANNUAL REPORTS**

- a. Each Copermittee must generate individual JRMP Annual Reports that cover implementation of its jurisdictional activities during the past annual reporting period. Each Annual Report must verify and document compliance with this Order as directed in this section. Each Copermittee must retain records in accordance with the Standard Provisions in Attachment B of this Order, available for review, that document compliance with each requirement of this Order. The reporting period for these annual reports must be the previous fiscal year.
- b. Each Copermittee must submit its JRMP Annual Reports to the San Diego Water Board by October 31 of each year, beginning on October 31, 2013.
- c. Each JRMP Annual Report must contain, at a minimum, the following information, as applicable to the Copermittee:
 - (1) Information required to be reported annually in Section H (Fiscal Analysis) of this Order;
 - (2) Information required to be reported annually in Section J (Program Effectiveness) of this Order;
 - (3) The completed Reporting Checklist found in Attachment D; and
 - (4) Information for each program component as described in the following Table 5:

Table 5. Annual Reporting Requirements

Program Component	Reporting Requirement
New Development	1. All updated relevant sections of the General Plan and environmental review process and a description of any planned updates within the next annual reporting period, if applicable;
	2. All revisions to the SSMP, including where applicable: (a) Identification and summary of where the SSMP fails to meet the requirements of this Order; (b) Updated procedures for identifying pollutants of concern for each Priority Development Project; (c) Updated treatment BMP ranking matrix; (d) Updated site design and treatment control BMP design standards;
	3. Number of Priority Development Projects reviewed and approved during the reporting period. Brief description of BMPs required at approved Priority Development Projects. Verification that site design, source control, and treatment BMPs were required on all applicable Priority Development Projects;
	4. Name and location of all Priority Development Projects that were granted a waiver from implementing LID BMPs pursuant to section F.1.d.(4) during the reporting period;
	5. Updated watershed-based BMP maintenance tracking database of approved treatment control BMPs and treatment control BMP maintenance within its jurisdiction, including updates to the list of high-priority Priority Development Projects; and verification that the requirements of this Order were met during the reporting period;

Table 5. Annual Reporting Requirements (Cont'd)

Program Component	Reporting Requirement
New Development (Cont'd)	6. Name and brief description of all approved Priority Development Projects required to implement hydrologic control measures in compliance with section F.1.h including a brief description of the management measures planned to protect downstream beneficial uses and prevent adverse physical changes to downstream stream channels;
	7. Number and description of all enforcement activities applicable to the new development and redevelopment component and a summary of the effectiveness of those activities.
Construction	1. All updated relevant ordinances and description of planned ordinance updates within the next annual reporting period, if applicable;
	2. A description of any changes to procedures used for identifying priorities for inspecting sites and enforcing control measures that consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality;
	3. Any changes to the designated minimum and enhanced BMPs;
	4. Summary of the inspection program, including the following information: (a) Total number and date of inspections conducted at each facility; (b) Number, date, and types of enforcement actions by facility; (c) Brief description of each high-level enforcement actions at construction sites including the effectiveness of the enforcement. Supporting paper (or electronic) files must be maintained by the Copermittees and made available upon San Diego Water Board request. Supporting files must include a record of inspection dates, the results of each inspection, photographs (if any), and a summary of any enforcement actions taken.
Municipal	1. Updated source inventory;
	2. All changes to the designated municipal BMPs;
	3. Descriptions of any changes to procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies;
	4. Summary and assessment of BMP retrofits implemented at flood control structures, including: (a) List of projects retrofitted; (b) List and description of structures evaluated for retrofitting; (c) List of structures still needing to be evaluated and the schedule for evaluation;

Table 5. Annual Reporting Requirements (Cont'd)

Program Component	Reporting Requirement
Municipal (Cont'd)	5. Summary of the municipal structural treatment control operations and maintenance activities, including: (a) Number of inspections and types of facilities; (b) Summary of findings;
	6. Summary of the MS4 and MS4 facilities operations and maintenance activities, including: (a) Number and types of facilities maintained; (b) Amount of material removed; (c) List of facilities planned for bi-annual inspections and the justification;
	7. Summary of the municipal areas/programs inspection activities, including: (a) Number and date of inspections conducted at each facility; (b) The BMP violations identified during the inspection by facility; (c) Number, date and types of enforcement actions by facility; (d) Summary of inspection findings and follow-up activities for each facility;
	8. Description of activities implemented to address sewage infiltration into the MS4;
	9. Description of BMPs and their implementation for unpaved roads construction and maintenance.
Commercial / Industrial	1. Updated inventory of commercial / industrial sources;
	2. Summary of the inspection program, including the following information: (a) Number and date of inspections conducted at each facility or mobile business; (b) The BMP violations identified during the inspection by facility; (c) Number, date, and types of enforcement actions by facility or mobile business; (d) Brief description of each high-level enforcement actions at commercial/industrial sites including the effectiveness of the enforcement and follow-up activities for each facility;
	3. All changes to designated minimum and enhanced BMPs;
	4. A list of industrial sites, including each name, address, and SIC code, that the Copermittee suspects may require coverage under the General Industrial Permit, but has not submitted an NOI.

Table 5. Annual Reporting Requirements (Cont'd)

Program Component	Reporting Requirement
Residential	1. All updated minimum BMPs required for residential areas and activities;
	2. Quantification and summary of applicable runoff and storm water enforcement actions within residential areas and activities;
	3. Description of efforts to manage runoff and storm water pollution in common interest areas and mobile home parks.
Retrofitting Existing Development	1. Updated inventory and prioritization of existing developments identified as candidates for retrofitting;
	2. Description of efforts to retrofit existing developments during the reporting year;
	3. Description of efforts taken to encourage private landowners to retrofit existing development;
	4. A list of all retrofit projects that have been implemented, including site location, a description of the retrofit project, pollutants expected to be treated, and the tributary acreage of runoff that will be treated;
	5. Any proposed retrofit or regional mitigation projects and timelines for future implementation;
	6. Any proposed changes to the Copermittee's overall retrofitting program.
Illicit Discharge Detection and Elimination	1. Any changes to the legal authority to implement Illicit Discharge Detection and Elimination activities;
	2. Any Changes to the established investigation procedures;
	3. Any changes to public reporting mechanisms, including phone numbers and web pages;
	4. Summaries of illicit discharges (including spills and water quality data events) and how each significant case was resolved;
	5. A description of instances when field screening and analytical data exceeded action levels, including those instances for which no investigation was conducted;
	6. A description of follow-up and enforcement actions taken in response to investigations of illicit discharges and a description of the outcome of the investigation/enforcement actions.
Workplans	Updated workplans including priorities, strategy, implementation schedule and effectiveness evaluation.

d. Each JRMP Annual Report must also include the following information regarding non-storm water discharges (see Section B.2. of this Order):

- (1) Identification of non-storm water discharge categories identified as a source of pollutants to waters of the U.S;
- (2) A description of any updates to ordinances, orders, or similar means to prohibit non-storm water discharge categories identified under section B.2 above ;
- (3) Identification of any control measures to be required and implemented for

non-storm water discharge categories identified as needing controls by the San Diego Water Board; and

- (4) A description of a program to address pollutants from non-emergency fire fighting flows identified by the Copermittee to be significant sources of pollutants.

4. Interim Reporting Requirements

For the reporting periods, prior to submittal of the JRMP, each JRMP Annual Report must be submitted in accordance with the requirements and deadlines described in Order No. 2004-001.

5. Universal Reporting Requirements

All submittals must include an executive summary, introduction, conclusion, recommendations, and signed certified statement. Each Copermittee must submit a signed certified statement covering its responsibilities for each applicable submittal. The Principal Copermittee must submit a signed certified statement covering its responsibilities for each applicable submittal and the sections of the submittals for which it is responsible.

L. MODIFICATION OF PROGRAMS

Modifications of JRMPs and/or Watershed Workplan may be initiated by the Executive Officer of the San Diego Water Board or by the Copermittees. Requests by Copermittees must be made to the Executive Officer, and must be submitted during the annual review process. Requests for modifications should be incorporated, as appropriate, into the Annual Reports or other deliverables required or allowed under this Order.

1. Minor modifications to JRMPs, and/or Watershed Workplan, may be accepted by the Executive Officer where the Executive Officer finds the proposed modification complies with all discharge prohibitions, receiving water limitations, and other requirements of this Order.
2. Proposed modifications that are not minor require amendment of this Order in accordance with this Order's rules, policies, and procedures.

M. PRINCIPAL COPERMITTEE RESPONSIBILITIES

Within 180 days of adoption of this Order, the Copermittees must designate the Principal Copermittee and notify the San Diego Water Board of the name of the Principal Copermittee. The Principal Copermittee must, at a minimum:

1. Serve as liaison between the Copermittees and the San Diego Water Board on general permit issues, and when necessary and appropriate, represent the Copermittees before the San Diego Water Board.
2. Coordinate permit activities among the Copermittees and facilitate collaboration on the development and implementation of programs required under this Order.
3. Coordinate the submittal of the documents and reports as required by section K of this Order and Receiving Waters and MS4 Discharge Monitoring and Reporting Program No. R9-2010-0016 in Attachment E of this Order.

N. RECEIVING WATERS AND MS4 DISCHARGE MONITORING AND REPORTING PROGRAM

Pursuant to CWC section 13267, the Copermittees must comply with all the requirements contained in Receiving Waters and MS4 Discharge Monitoring and Reporting Program (MRP) No. R9-2010-0016 in Attachment E of this Order.

O. STANDARD PROVISIONS, REPORTING REQUIREMENTS, AND NOTIFICATIONS

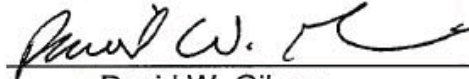
1. Each Copermittee must comply with Standard Provisions, Reporting Requirements, and Notifications contained in Attachment B of this Order. This includes 24 hour/5 day reporting requirements for any instance of non-compliance with this Order as described in section 5.e of Attachment B.
2. All plans, reports and subsequent amendments submitted in compliance with this Order must be implemented immediately (or as otherwise specified). All submittals by Copermittees must be adequate to implement the requirements of this Order.

DIRECTIVES M: PRINCIPAL COPERMITTEE RESPONSIBILITIES
DIRECTIVES N: RECEIVING WATERS AND MS4 DISCHARGE MONITORING AND
REPORTING PROGRAM
DIRECTIVES O: STANDARD PROVISIONS, REPORTING REQUIREMENTS, AND
NOTIFICATIONS

P. ADDITIONAL PROVISIONS

The Executive Officer shall meet with Camp Pendleton and other stakeholders at six (6) month intervals to identify and investigate water quality impacts, flow impacts, and impacts to water rights that may derive from the implementation of Low Impact Development BMPs required by Order R9-2010-0016 as they are developed by the storm water Copermittees. Any key issues or amendments to the Order that derive from those analyses and discussions will be promptly brought to the San Diego Water Board for their consideration.

I, David W. Gibson, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on November 10, 2010.

A handwritten signature in dark ink, appearing to read "David W. Gibson", is written over a horizontal line.

David W. Gibson
Executive Officer

This page left intentionally blank

ATTACHMENT A**BASIN PLAN PROHIBITIONS**

California Water Code Section 13243 provides that a Regional 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 following discharge prohibitions are applicable to any person, as defined by Section 13050(c) of the California Water Code, 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 San Diego Region.

1. The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in California Water Code Section 13050, is prohibited.
2. The discharge of waste to land, except as authorized by waste discharge requirements or the terms described in California Water Code Section 13264 is prohibited.
3. The discharge of pollutants or dredged or fill material to waters of the United States except as authorized by a NPDES permit or a dredged or fill material permit (subject to the exemption described in California Water Code Section 13376) is prohibited.
4. Discharges of recycled water to lakes or reservoirs used for municipal water supply or to inland surface water tributaries thereto are prohibited, unless this Regional Board issues a NPDES permit authorizing such a discharge; the proposed discharge has been approved by the State Department of Health Services and the operating agency of the impacted reservoir; and the discharger has an approved fail-safe long-term disposal alternative.
5. The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of the Regional Board. Consideration would include streamflow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if streamflow provided 100:1 dilution capability.
6. The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited, unless the discharge is authorized by the Regional Board.
7. The dumping, deposition, or discharge of waste directly into waters of the state, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited unless authorized by the Regional Board.
8. Any discharge to a storm water conveyance system that is not composed entirely of "storm water" is prohibited unless authorized by the Regional Board. [The federal regulations, 40 CFR 122.26(b)(13), define storm water as storm water

runoff, snow melt runoff, and surface runoff and drainage. 40 CFR 122.26(b)(2) defines an illicit discharge as any discharge to a storm water conveyance system that is not composed entirely of storm water except discharges pursuant to a NPDES permit and discharges resulting from fire fighting activities. [§122.26 amended at 56 FR 56553, November 5, 1991; 57 FR 11412, April 2, 1992].

9. The unauthorized discharge of treated or untreated sewage to waters of the state or to a storm water conveyance system is prohibited.
10. The discharge of industrial wastes to conventional septic tank/subsurface disposal systems, except as authorized by the terms described in California Water Code Section 13264, is prohibited.
11. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the state is prohibited.
12. The discharge of any radiological, chemical, or biological warfare agent into waters of the state is prohibited.
13. The discharge of waste into a natural or excavated site below historic water levels is prohibited unless the discharge is authorized by the Regional Board.
14. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities which cause deleterious bottom deposits, turbidity or discoloration in waters of the state or which unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.
15. The discharge of treated or untreated sewage from vessels to Mission Bay, Oceanside Harbor, Dana Point Harbor, or other small boat harbors is prohibited.

ATTACHMENT B**STANDARD PROVISIONS, REPORTING REQUIREMENTS, AND NOTIFICATIONS****1. STANDARD PROVISIONS – PERMIT COMPLIANCE [40 CFR 122.41]****(a) *Duty to comply* [40 CFR 122.41(a)].**

- (1) The Copermitttee must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
- (2) The Copermitttee shall comply with effluent standards or prohibitions established under section 307(a) of the CWA toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the Order has not yet been modified to incorporate the requirement.

(b) *Need to halt or reduce activity not a defense* [40 CFR 122.41(c)]. It shall not be a defense for the Copermitttee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.**(c) *Duty to mitigate* [40 CFR 122.41(d)].** The Copermitttee shall take all reasonable steps to minimize or prevent any discharge or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment.**(d) *Proper operation and maintenance* [40 CFR 122.41(e)].** The Copermitttee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Copermitttee to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Copermitttee only when necessary to achieve compliance with the conditions of this Order.**(e) *Property rights* [40 CFR 122.41(g)].**

- (1) This Order does not convey any property rights of any sort or any exclusive privilege.
- (2) The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

(f) *Inspection and entry* [40 CFR 122.41(i)]. The Copermitttee shall allow the Regional Water Quality Control Board, San Diego Region (Regional Board), State Water Resources Control Board (SWRCB), United States Environmental Protection Agency

(USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon presentation of credentials and other documents as may be required by law, to:

- (1) Enter upon the Copermittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
- (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
- (3) Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
- (4) Sample or monitor, at reasonable times, for the purpose of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location.

(g) *Bypass* [40 CFR 122.41(m)]

(1) Definitions:

- i) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
 - ii) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- (2) Bypass not exceeding limitations - The Copermittee may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance (g)(3), (g)(4) and (g)(5) below.
- (3) Prohibition of Bypass - Bypass is prohibited, and the Regional Board may take enforcement action against a Copermittee for bypass, unless:
- i) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - iii) The Copermittee submitted notice as required under Standard Provisions – Permit Compliance (g)(3) above.

(4) Notice

- i) Anticipated bypass. If the Copermittee knows in advance of the need for a bypass, it shall submit a notice, if possible at least ten days before the date of the bypass.
 - ii) Unanticipated bypass. The Copermittee shall submit notice of an unanticipated bypass as required in Standard Provisions 5(e) below (24-hour notice).
- (h) *Upset* [40 CFR 122.41(n)] Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based effluent limitations because of factors beyond the reasonable control of the Copermittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- (1) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance (h)(2) below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- (2) Conditions necessary for a demonstration of upset. A Copermittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i) An upset occurred and that the Copermittee can identify the cause(s) of the upset;
 - ii) The permitted facility was at the time being properly operated;
 - iii) The Copermittee submitted notice of the upset as required in Standard Provisions – Permit Compliance (5)(e)(ii)(B) below (24-hour notice); and
 - iv) The Copermittee complied with any remedial measures required under Standard Provisions – Permit Compliance 1(c) above.
- (3) Burden of Proof. In any enforcement proceeding, the Copermittee seeking to establish the occurrence of an upset has the burden of proof.

2. STANDARD PROVISIONS – PERMIT ACTION

- (a) *General* [40 CFR 122.41(f)] This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Copermittee for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition.
- (b) *Duty to reapply* [40 CFR 122.41(b)]. If the Copermittee wishes to continue an activity regulated by this Order after the expiration date of this Order, the Copermittee must apply for and obtain new permit.
- (c) *Transfers*. This Order is not transferable to any person except after notice to the Regional Board. The Regional Board may require modification or revocation and

reissuance of the Order to change the name of the Copermittee and incorporate such other requirements as may be necessary under the CWA and the CWC.

3. STANDARD PROVISIONS – MONITORING

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 CFR Section 122.41 (j) (1)]
- (b) Monitoring results must be conducted according to test procedures under 40 CFR Part 136, or in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [40 CFR Section 122.41(j)(4)][40 CFR Section 122.44(i)(1)(iv)].

4. STANDARD PROVISIONS – RECORDS

- (a) Except for records of monitoring information required by this Order related to the Copermittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Copermittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application, This period may be extended by request of the Regional Water Board Executive Officer at any time [40 CFR Section 122.41(j)(2)].
- (b) *Records of monitoring information* [40 CFR 122.41(j) (3)] shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- (c) *Claims of confidentiality* [40 CFR Section 122.7(b)] of the following information will be denied:
 - (1) The name and address of any permit applicant or Copermittee; and
 - (2) Permit applications and attachments, permits and effluent data.

5. STANDARD PROVISIONS – REPORTING

- (a) *Duty to provide information* [40 CFR 122.41(h)]. The Copermittee shall furnish to the Regional Board, SWRCB, or USEPA within a reasonable time, any information which the Regional Board, SWRCB, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Copermittee shall also furnish to the Regional Board, SWRCB, or USEPA, copies of records required to be kept by this Order.

(b) *Signatory and Certification Requirements* [40 CFR 122.41(k)]

- (1) All applications, reports, or information submitted to the Regional Board, SWRCB, or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting 5(b)ii), 5(b)iii), 5(b)iv), and 5(b) (see 40 CFR 122.22)
- (2) *Applications* [40 CFR 122.22(a)(3)] All permit applications shall be signed by either a principal executive officer or ranking elected official.
- (3) *Reports* [40 CFR 122.22(b)]. All reports required by this Order, and other information requested by the Regional Board, SWRCB, or USEPA shall be signed by a person described in Standard Provisions – Reporting 5(b)(2) above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - i) The authorization is made in writing by a person described in Standard Provisions-Reporting 5(b)(2) above;
 - ii) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and,
 - iii) The written authorization is submitted to the Regional Water Board and State Water Board.
- (4) *Changes to authorization* [40 CFR Section 122.22(c)] If an authorization under Standard Provisions – Reporting 5(b)(3) of this reporting requirement is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting 5(b)(3) above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications to be signed by an authorized representative.
- (5) *Certification* [40 CFR Section 122.22(d)] Any person signing a document under Standard Provisions – Reporting 5(b)(2), or 5(b)(3) above shall make the following certification:

"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 fine and imprisonment for knowing violations."

(c) *Monitoring reports.* [40 CFR 122.41(l)(4)]

- (1) Monitoring results shall be reported at the intervals specified in the Receiving Waters and Runoff Monitoring and Reporting Program No. R9-2009-0002.
- (2) Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Board or SWRCB for reporting results of monitoring of sludge use or disposal practices.
- (3) If the Copermittee monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Board.
- (4) Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.

(d) *Compliance schedules.* [40 CFR Section 122.41(l)(5)] Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order shall be submitted no later than 14 days following each schedule date.

(e) *Twenty-four hour reporting* [40 CFR Section 122.41(l)(6)]

- (1) The Copermittee shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Copermittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Copermittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- (2) The following shall be included as information, which must be reported within 24 hours under this paragraph:
 - i) Any unanticipated bypass that exceeds any effluent limitation in the Order (See 40 CFR 122.41(g)).
 - ii) Any upset which exceeds any effluent limitation in this Order.
- (3) The Regional Board may waive the above-required written report under this provision on a case-by-case basis if the oral report has been received within 24 hours.

(f) *Planned changes.* [40 CFR Section 122.41(l)(1)] The Copermittee shall give notice to the Regional Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when:

- (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants, which are not subject to effluent limitations in this Order.
 - (3) The alteration or addition results in a significant change in the Copermittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing Order, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- (g) *Anticipated noncompliance.* [40 CFR Section 122.41(l)(7)] The Copermittee shall give advance notice to the Regional Board or SWRCB of any planned changes in the permitted facility or activity, which may result in noncompliance with Order requirements.
- (h) *Other noncompliance* [40 CFR Section 122.41(l) 7)] The Copermittee shall report all instances of noncompliance not reported under Standard Provisions 5(c), 5(d), and 5(e) above, at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting 5(e) above.
- (i) *Other information* [40 CFR Section 122.41(l)(8)] When the Copermittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Board, SWRCB, or USEPA, the Copermittee shall promptly submit such facts or information.

6. STANDARD PROVISIONS – ENFORCEMENT

- (a) The Regional Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, Sections 13385, 13386, and 13387.

7. ADDITIONAL STANDARD PROVISIONS

- (a) *Municipal separate storm sewer systems* [40 CFR 122.42(c)]. The operator of a large or medium municipal separate storm sewer system or a municipal separate storm sewer that has been designated by the Director under 40 CFR 122.26(a)(1)(v) must submit an annual report by the anniversary of the date of the issuance of the permit for such system. The report shall include:
- (1) The status of implementing the components of the storm water management program that are established as permit conditions;
 - (2) Proposed changes to the storm water management programs that are established as permit conditions. Such proposed changes shall be consistent with 40 CFR 122.26(d)(2)(iii); and
 - (3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under 40 CFR 122.26(d)(2)(iv) and 40 CFR

122.26(d)(2)(v);

- (4) A summary of data, including monitoring data, that is accumulated throughout the reporting year;
 - (5) Annual expenditures and budget for year following each annual report;
 - (6) A summary describing the number and nature of enforcement actions, inspections, and public education programs; and
 - (7) Identification of water quality improvements or degradation.
- (b) *Storm water discharges* [40 CFR 122.42(d)]. The initial permits for discharges composed entirely of storm water issued pursuant to 40 CFR 122.26(e)(7) shall require compliance with the conditions of the permit as expeditiously as practicable, but in no event later than three years after the date of issuance of the permit.
- (c) *Other Effluent Limitations and Standards* [40 CFR 122.44(b)(1)]. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this Order, the Regional Board may institute proceedings under these regulations to modify or revoke and reissue the Order to conform to the toxic effluent standard or prohibition.
- (d) *Discharge is a privilege* [CWC section 13263(g)]. No discharge of waste into the waters of the State, whether or not such discharge is made pursuant to waste discharge requirements, shall create a vested right to continue such discharge. All discharges of waste into waters of the State are privileges, not rights.
- (e) *Review and revision of Order* [CWC section 13263(e)]. Upon application by any affected person, or on its own motion, the Regional Board may review and revise this permit.
- (f) *Termination or modification of Order* [CWC section 13381]. This permit may be terminated or modified for causes, including, but not limited to, all of the following:
- (1) Violation of any condition contained in this Order.
 - (2) Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts.
 - (3) A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.
- (g) *Transfers*. When this Order is transferred to a new owner or operator, such requirements as may be necessary under the CWC may be incorporated into this Order.
- (h) *Conditions not stayed*. The filing of a request by the Copermittee for modification, revocation and reissuance, or termination of this Order, or a notification of planned change in or anticipated noncompliance with this Order does not stay any condition of this Order.

- (i) *Availability.* A copy of this Order shall be kept at a readily accessible location and shall be available to on-site personnel at all times.
- (j) *Duty to minimize or correct adverse impacts.* The Copermittees shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.
- (k) *Interim Effluent Limitations.* The Copermittee shall comply with any interim effluent limitations as established by addendum, enforcement action, or revised waste discharge requirements which have been, or may be, adopted by this Regional Board.
- (l) *Responsibilities, liabilities, legal action, penalties* [CWC sections 13385 and 13387]. The Porter-Cologne Water Quality Control Act provides for civil and criminal penalties comparable to, and in some cases greater than, those provided for under the CWA.

Nothing in this Order shall be construed to protect the Copermittee from its liabilities under federal, state, or local laws.

Except as provided for in 40CFR 122.41(m) and (n), nothing in this Order shall be construed to relieve the Copermittee from civil or criminal penalties for noncompliance.

Nothing in this Order shall be construed to preclude the institution of any legal action or relieve the Copermittee from any responsibilities, liabilities, or penalties to which the Copermittee is or may be subject to under Section 311 of the CWA.

Nothing in this Order shall be construed to preclude institution of any legal action or relieve the Copermittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authoring preserved by Section 510 of the CWA.

- (m) *Noncompliance.* Any noncompliance with this Order constitutes violation of the CWA and is grounds for denial of an application or modification of the Order (also see 40 CFR 122.41(a)).
- (n) *Director.* For purposes of this Order, the term "Director" used in parts of 40 CFR incorporated into this Order by reference and/or applicable to this Order shall have the same meaning as the term "Regional Board" used elsewhere in this Order, except that in 40 CFR 122.41(h) and (l), "Director" shall mean "Regional Board, SWRCB, and USEPA."
- (o) The Regional Board has, in prior years, issued a limited number of individual NPDES permits for non-storm water discharges to MS4s. The Regional Board or SWRCB may in the future, upon prior notice to the Copermittee(s), issue an NPDES permit for any non-storm water discharge (or class of non-storm water discharges) to a MS4. Copermittees may prohibit any non-storm water discharge (or class of non-storm water discharges) to a MS4 that is authorized under such separate NPDES permits.

- (p) *Effective date.* This Order shall become effective on the date of its adoption provided the USEPA has no objection. If the USEPA objects to its issuance, this Order shall not become effective until such objection is withdrawn. This Order supersedes Order No. 2001-01 upon the effective date of this Order.
- (q) *Expiration.* This Order expires five years after adoption.
- (r) *Continuation of expired order* [23 CCR 2235.4]. After this Order expires, the terms and conditions of this Order are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on the continuation of expired permits (40 CFR 122.6) are complied with.
- (s) *Applications.* Any application submitted by a Copermittee for reissuance or modification of this Order shall satisfy all applicable requirements specified in federal regulations as well as any additional requirements for submittal of a Report of Waste Discharge specified in the CWC and the California Code of Regulations.
- (t) *Confidentiality.* Except as provided for in 40 CFR 122.7, no information or documents submitted in accordance with or in application for this Order will be considered confidential, and all such information and documents shall be available for review by the public at the Regional Board office.
- (u) *Severability.* The provisions of this Order are severable, and if any provision of this Order, or the application of any provisions of this Order to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this Order shall not be affected thereby.
- (v) *Report submittal.* The Copermittee shall submit reports and provide notifications as required by this Order to the following:

NORTHERN WATERSHED UNIT
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
9174 SKY PARK COURT, SUITE 100
SAN DIEGO CA 92123-4340
Telephone: (858) 467-2952 Fax: (858) 571-6972

EUGENE BROMLEY
US ENVIRONMENTAL PROTECTION AGENCY
REGION IX
PERMITS ISSUANCE SECTION (W-5-1)
75 HAWTHORNE STREET
SAN FRANCISCO CA 94105

Unless otherwise directed, the Copermittee shall submit one hard copy for the official record and one electronic copy of each report required under this Order to the Regional Board and one electronic copy to the EPA.

ATTACHMENT C**ACRONYMS AND ABBREVIATIONS**

ADT	Average Daily Traffic
AMAL	Average Monthly Action Level
ASBS	Area of Special Biological Significance
AST	Active/Passive Sediment Treatment
BMP	Best Management Practice
Basin Plan	Water Quality Control Plan for the San Diego Basin
BU	Beneficial Use
CASQA	California Stormwater Quality Association
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
CWC	California Water Code
CZARA	Coastal Zone Act Reauthorization Amendments of 1990
DAMP	Drainage Area Management Plan
DNQ	Detected, but not Quantified
EIA	Effective Impervious Area
ESAs	Environmentally Sensitive Areas
GIS	Geographic Information System
HMP	Hydromodification Management Plan
IBI	Index of Biotic Integrity
JRMP	Jurisdictional Runoff Management Plan
LID	Low Impact Development
MDAL	Maximum Daily Action Level
MEP	Maximum Extent Practicable
ML	Minimum Level
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
Copermittees	County of Riverside, the 4 incorporated cities within the County of Riverside in the San Diego Region, and the Riverside County Flood Control District
RGOs	Retail Gasoline Outlets
ROWD	Riverside County Copermittees' Report of Waste Discharge (application for NPDES reissuance)
RWLs	Receiving Water Limitations
SAL	Storm Water Action Level
San Diego Water Board	California Regional Water Quality Control Board, San Diego Region
SIC	Standard Industrial Classification Code
SSMP	Standard Urban Storm Water Mitigation Plan
State Board	State Water Resources Control Board
SWQPA	State Water Quality Protected Area
TMDL	Total Maximum Daily Load

USEPA	United States Environmental Protection Agency
WLA	Waste Load Allocation
WQMP	Water Quality Management Plan
WRMP	Watershed Runoff Management Plan

DEFINITIONS

Active/Passive Sediment Treatment - Using mechanical, electrical or chemical means to flocculate or coagulate suspended sediment for removal from runoff from construction sites prior to discharge.

Anthropogenic Litter – Trash generated from human activities, not including sediment.

Average Monthly Action Level – the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Basin Plan – Water Quality Control Plan, San Diego Basin, Region 9, and amendments, developed by the Regional Board.

Beneficial Uses - The uses of water necessary for the survival or well being of man, plants, and wildlife. These uses of water serve to promote tangible and intangible economic, social, and environmental goals. "Beneficial Uses" of the waters of the State that may be protected include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. Existing beneficial uses are uses that were attained in the surface or ground water on or after November 28, 1975; and potential beneficial uses are uses that would probably develop in future years through the implementation of various control measures. "Beneficial Uses" are equivalent to "Designated Uses" under federal law. [California Water Code Section 13050(f)].

Best Management Practices (BMPs) - Defined in 40 CFR 122.2 as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In the case of municipal storm water permits, BMPs are typically used in place of numeric effluent limits.

Bioassessment - The use of biological community information to evaluate the biological integrity of a water body and its watershed. With respect to aquatic ecosystems, bioassessment is the collection and analysis of samples of the benthic macroinvertebrate community together with physical/habitat quality measurements associated with the sampling site and the watershed to evaluate the biological condition (i.e. biological integrity) of a water body.

Biocriteria - Under the CWA, numerical values or narrative expressions that define a desired biological condition for a water body that are legally enforceable. The USEPA

defines biocriteria as: “numerical values or narrative expressions that describe the reference biological integrity of aquatic communities inhabiting waters of a given designated aquatic life use... (that)...describe the characteristics of water body segments least impaired by human activities.”

Biofiltration - refers to practices that use vegetation and amended soils to detain and treat runoff from impervious areas. Treatment is through filtration, infiltration, adsorption, ion exchange, and biological uptake of pollutants.

Biological Integrity - Defined in Karr J.R. and D.R. Dudley. 1981. Ecological perspective on water quality goals. Environmental Management 5:55-68 as: “A balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of natural habitat of the region.” Also referred to as ecosystem health.

Clean Water Act Section 402(p) [33 USC 1342(p)] - The federal statute requiring municipal and industrial dischargers to obtain NPDES permits for their discharges of storm water.

Clean Water Act Section 303(d) Water Body - An impaired water body in which water quality does not meet applicable water quality standards and/or is not expected to meet water quality standards, even after the application of technology based pollution controls required by the CWA. The discharge of runoff to these water bodies by the Copermittees is significant because these discharges can cause or contribute to violations of applicable water quality standards.

Construction Site – Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, disturbances to ground such as stockpiling, and excavation.

Contamination - As defined in the Porter-Cologne Water Quality Control Act, contamination is “an impairment of the quality of waters of the State by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. ‘Contamination’ includes any equivalent effect resulting from the disposal of waste whether or not waters of the State are affected.”

Critical Channel Flow (Qc) – The channel flow that produces the critical shear stress that initiates bed movement or that erodes the toe of channel banks. When measuring Qc, it should be based on the weakest boundary material – either bed or bank.

CWA – Federal Clean Water Act

CWC – California Water Code

Daily Discharge – Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day or any 24 hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g. concentration.)

The Daily Discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day, or other 24 hour period other than a day), or by the arithmetic mean of analytical results from one or more grab samples taken over the course of a day.

Detected, but not Quantified – those sample results less than the reporting level, but greater than or equal to the laboratory's Method of Detection Limit (MDL.)

Development Projects - Construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project, industrial, commercial, or any other projects.

Dilution Credit – the amount of dilution granted to a discharger in the calculation of a WQBEL, based on the allowance of a specific mixing zone. It is calculated from the dilution ratio, or determined through conducting of a mixing zone study, or modeling of the discharge and receiving water.

Dry Season – May 1 through September 30 of each year.

Dry Weather – weather is considered dry if the preceding 72 hours has been without precipitation.

Effectiveness Assessment Outcome Level 1 - Compliance with Activity-based Permit Requirements – Level 1 outcomes are those directly related to the implementation of specific activities prescribed by this Order or established pursuant to it.

Effectiveness Assessment Outcome Level 2 - Changes in Attitudes, Knowledge, and Awareness – Level 2 outcomes are measured as increases in knowledge and awareness among target audiences such as residents, businesses, and municipal employees.

Effectiveness Assessment Outcome Level 3 - Behavioral Change and BMP Implementation – Level 3 outcomes measure the effectiveness of activities in affecting behavioral change and BMP implementation.

Effectiveness Assessment Outcome Level 4 - Load Reductions – Level 4 outcomes measure load reductions which quantify changes in the amounts of pollutants associated with specific sources before and after a BMP or other control measure is employed.

Effectiveness Assessment Outcome Level 5 - Changes in Runoff and Discharge Quality – Level 5 outcomes are measured as changes in one or more specific constituents or stressors in discharges into or from MS4s.

Effectiveness Assessment Outcome Level 6 - Changes in Receiving Water Quality – Level 6 outcomes measure changes to receiving water quality resulting from discharges into and from MS4s, and may be expressed through a variety of means such as compliance with water quality objectives or other regulatory benchmarks, protection of biological integrity, or beneficial use attainment.

Enclosed Bays – Enclosed bays are indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all

bays where the narrowest distance between the headlands or outermost bay works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays do not include inland surface waters or ocean waters.

Erosion – When land is diminished or worn away due to wind, water, or glacial ice. Often the eroded debris (silt or sediment) becomes a pollutant via storm water runoff. Erosion occurs naturally but can be intensified by land clearing activities such as farming, development, road building, and timber harvesting.

Environmentally Sensitive Areas (ESAs) - Areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Resources Control Board (Water Quality Control Plan for the San Diego Basin (1994) and amendments); State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Resources Control Board (Water Quality Control Plan for the San Diego Basin (1994) and amendments); areas designated as preserves or their equivalent under the Natural Communities Conservation Program within the Cities and County of Orange; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees.

Estuaries – waters, including coastal lagoons, located at the mouth of streams that serve as areas of mixing fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and ocean water. Estuaries do not include inland surface waters or ocean waters.

Feasibility Analysis – Detailed description of the selection process for the treatment control BMPs for a Priority Development Project, including justification of why one BMP is selected over another. For a Priority Development Project where a treatment control BMP with a low removal efficiency ranking (as identified by the Model SUSMP) is proposed, the analysis shall include a detailed and adequate justification exhibiting the reasons implementation of a treatment control BMP with a higher removal efficiency is infeasible for the Priority Development Project or portion of the Priority Development Project.

Flow Duration – The long-term period of time that flows occur above a threshold that causes significant sediment transport and may cause excessive erosion damage to creeks and streams (not a single storm event duration). The simplest way to visualize this is to consider a histogram of pre- and post-project flows using long-term records of hourly data. To maintain pre-project flow duration means that the total number of hours (counts) within each range of flows in a flow-duration histogram cannot increase between the pre- and post-project condition. Flow duration within the range of geomorphologically significant flows is important for managing erosion.

GIS – Geographic Information System

Grading - The cutting and/or filling of the land surface to a desired slope or elevation.

Hazardous Material – Any substance that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical

reactivity. These also include materials named by the USEPA in 40 CFR 116 to be reported if a designated quantity of the material is spilled into the waters of the U.S. or emitted into the environment.

Hazardous Waste - Hazardous waste is defined as “any waste which, under Section 600 of Title 22 of this code, is required to be managed according to Chapter 30 of Division 4.5 of Title 22 of this code” [CCR Title 22, Division 4.5, Chapter 11, Article 1].

Household Hazardous Waste – Paints, cleaning products, and other wastes generated during home improvement or maintenance activities.

Hydromodification – 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, such as stream channelization, concrete lining, installation of dams and water impoundments, and excessive streambank and shoreline erosion are also considered hydromodification, due to their disruption of natural watershed hydrologic processes.

Illicit Connection – Any connection to the MS4 that conveys an illicit discharge.

Illicit Discharge - Any discharge to the MS4 that is not composed entirely of storm water except discharges pursuant to a NPDES permit and discharges resulting from fire fighting activities [40 CFR 122.26(b)(2)].

Implementation Assessment – Assessment conducted to determine the effectiveness of Copermittee programs and activities in achieving measurable targeted outcomes, and in determining whether priority sources of water quality problems are being effectively addressed.

Inactive Slopes – Slopes on which no grading or other soil disturbing activities are conducted for 10 or more days.

Inland Surface Waters – all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Integrated Assessment – Assessment to be conducted to evaluate whether program implementation is properly targeted to and resulting in the protection and improvement of water quality.

Jurisdictional Runoff Management Plan (JRMP) – A written description of the specific jurisdictional runoff management measures and programs that each Copermittee will implement to comply with this Order and ensure that storm water pollutant discharges in runoff are reduced to the MEP and do not cause or contribute to a violation of water quality standards.

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.

Low Impact Development Best Management Practices (LID BMPs) – LID BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States through storm water management and land development strategies that emphasize conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions. LID BMPs include retention practices that do not allow runoff, such as infiltration, rain water harvesting and reuse, and evapotranspiration. LID BMPs also include flow-through practices such as biofiltration that may have some discharge of storm water following pollutant reduction.

Maximum Daily Action Level (MDAL) – is the highest allowable daily discharge of a pollutant, over a calendar day (or 24 hour period). For pollutants with action levels expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with action levels expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Maximum Extent Practicable (MEP) – The technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) for storm water 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 runoff management programs. Their total collective and individual activities conducted pursuant to the runoff management programs 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."

Minimum Level – 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 sample weights, volumes and processing steps have been followed.

Monitoring Year – the monitoring year includes a full wet season and dry season, beginning annually on October 1st and ending on September 30th.

Municipal Separate Storm Sewer System (MS4) – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designated or used for collecting or conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of the Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.26.

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

NOI – Notice of Intent

Non-Storm Water - All discharges to and from a MS4 that do not originate from precipitation events (i.e., all discharges from a MS4 other than storm water). Non-storm water includes illicit discharges, non-prohibited discharges, and NPDES permitted discharges.

Nuisance - As defined in the Porter-Cologne Water Quality Control Act a nuisance is “anything which 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.”

Ocean Waters – the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Board's California Ocean Plan.

Order – Order No. R9-2009-0002 (NPDES No. CAS0108740)

Person - A person is defined as an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof [40 CFR 122.2].

Point Source - Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant - Any agent that may cause or contribute to the degradation of water quality such that a condition of pollution or contamination is created or aggravated.

Pollution - As defined in the Porter-Cologne Water Quality Control Act: “the alteration of the quality of the waters of the State by waste, to a degree that unreasonably affects the either of the following: 1) The waters for beneficial uses; or 2) Facilities that serve these beneficial uses.” Pollution may include contamination.

Pollutants of Concern – Pollutants for which water bodies are listed as impaired under CWA section 303(d), pollutants associated with the land use type of a development, and/or pollutants commonly associated with runoff. Pollutants commonly associated with runoff include total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and polynuclear aromatic hydrocarbons; synthetic organics (e.g., pesticides, herbicides,

and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (decaying vegetation, animal waste, and anthropogenic litter).

Pollution Prevention - Pollution prevention is defined as practices and processes that reduce or eliminate the generation of pollutants, in contrast to source control BMPs, treatment control BMPs, or disposal.

Post-Construction BMPs - A subset of BMPs including structural and non-structural controls which detain, retain, filter, or educate to prevent the release of pollutants to surface waters during the final functional life of developments.

Pre-Project or Pre-Development Runoff Conditions (Discharge Rates, Durations, Etc.) – Runoff conditions that exist onsite immediately before the planned development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.

Principal Copermittee – County of Orange

Priority Development Projects - New development and redevelopment project categories listed in Section F.1.d(2) of Order No. R9-2009-0002.

Rainy Season – (aka Wet Season) is the period of time from October 1 forward to April 30 when the San Diego region experiences the most rainfall.

Receiving Waters – Waters of the United States.

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 - The creation, addition, and or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include trenching and resurfacing associated with utility work; resurfacing existing roadways; new sidewalk construction, pedestrian ramps, or bikelane on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Retain – to keep or hold in a particular place, condition, or position without discharge to surface waters.

Runoff - All flows in a storm water conveyance system that consists of the following components: (1) storm water (wet weather flows) and (2) non-storm water including dry weather flows.

San Diego Water Board – As used in this document the term "San Diego Water Board" is synonymous with the term "Regional Board" as defined in Water Code section 13050(b) and is intended to refer to the California Regional Water Quality Control Board for the San Diego Region as specified in Water Code Section 13200.

Sediment - Soil, sand, and minerals washed from land into water. Sediment resulting from anthropogenic sources (i.e. human induced land disturbance activities) is considered a pollutant. This Order regulates only the discharges of sediment from anthropogenic sources and does not regulate naturally occurring sources of sediment. Sediment can destroy fish-nesting areas, clog animal habitats, and cloud waters so that sunlight does not reach aquatic plants.

Shared Treatment Control BMP - BMPs used by multiple developments to infiltrate, filter, or treat the required volume or flow prior to discharge to a receiving water. This could include, for example, a treatment BMP at the end of an enclosed storm drain that collects runoff from several commercial developments.

Source Control BMP – Land use or site planning practices, or structural or nonstructural measures that aim to prevent runoff pollution by reducing the potential for contamination at the source of pollution. Source control BMPs minimize the contact between pollutants and runoff.

State Water Quality Protection Area – A nonterrestrial marine or estuarine area designated to protect marine species or biological communities from an undesirable alteration in natural water quality, including, but not limited to, areas of special biological significance that have been designated by the State Water Resources Control Board through its water quality control planning process. Areas of special biological significance are a subset of State Water Quality Protection Areas, and require special protection as determined by the State Water Resources Control Board pursuant to the California Ocean Plan adopted and reviewed pursuant to Article 4 (commencing with Section 13160) of Chapter 3 of Division 7 of the California Water Code and pursuant to the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (California Thermal Plan) adopted by the state board.

Storm Water – Per 40 CFR 122.26(b)(13), means storm water runoff, snowmelt runoff and surface runoff and drainage. Surface runoff and drainage pertains to runoff and drainage resulting from precipitation events.

Standard Storm Water Mitigation Plan (SSMP) – A plan developed to mitigate the impacts of runoff from Priority Development Projects.

Third Party Inspectors - Industrial and commercial facility inspectors who are not contracted or employed by a regulatory agency or group of regulatory agencies, such as the Regional Board or Copermittees. The third party inspector is not a regular facility employee self-inspecting their own facility. The third party inspector could be a contractor or consultant employed by a facility or group of businesses to conduct inspections.

Total Maximum Daily Load (TMDL) - The maximum amount of a pollutant that can be discharged into a water body from all sources (point and non-point) and still maintain water quality standards. Under CWA section 303(d), TMDLs must be developed for all water bodies that do not meet water quality standards after application of technology-based controls.

Toxicity - Adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies). The water quality objectives for toxicity provided in the Water Quality Control Plan, San Diego Basin, Region 9, (Basin Plan), state in part..."All waters shall be free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life....The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge".

Treatment Control BMP – 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.

Unpaved Road – is a long, narrow stretch without pavement used for traveling by motor passenger vehicle between two or more points. Unpaved roads are generally constructed of dirt, gravel, aggregate or macadam and may be improved or unimproved.

Waste - As defined in CWC Section 13050(d), "waste includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal."

Article 2 of CCR Title 23, Chapter 15 (Chapter 15) contains a waste classification system that applies to solid and semi-solid waste, which cannot be discharged directly or indirectly to water of the state and which therefore must be discharged to land for treatment, storage, or disposal in accordance with Chapter 15. There are four classifications of waste (listed in order of highest to lowest threat to water quality): hazardous waste, designated waste, non-hazardous solid waste, and inert waste.

Water Quality Assessment – Assessment conducted to evaluate the condition of non-storm water and storm water discharges, and the water bodies which receive these discharges.

Water Quality Objective - Numerical or narrative limits on constituents or characteristics of water designated to protect designated beneficial uses of the water. [California Water Code Section 13050 (h)]. California's water quality objectives are established by the State and Regional Water Boards in the Water Quality Control Plans. Numeric or narrative limits for pollutants or characteristics of water designed to protect the beneficial uses of the water. In other words, a water quality objective is the maximum concentration of a pollutant that can exist in a receiving water and still generally ensure that the beneficial uses of the receiving water remain protected (i.e., not impaired). Since water quality objectives are designed specifically to protect the

beneficial uses, when the objectives are violated the beneficial uses are, by definition, no longer protected and become impaired. This is a fundamental concept under the Porter Cologne Act. Equally fundamental is Porter Cologne's definition of pollution. A condition of pollution exists when the water quality needed to support designated beneficial uses has become unreasonably affected or impaired; in other words, when the water quality objectives have been violated. These underlying definitions (regarding beneficial use protection) are the reason why all waste discharge requirements implementing the federal NPDES regulations require compliance with water quality objectives. (Water quality objectives are also called water quality criteria in the CWA.)

Water Quality Standards - The beneficial uses (e.g., swimming, fishing, municipal drinking water supply, etc.) of water and the water quality objectives necessary to protect those uses.

Waters of the State - Any water, surface or underground, including saline waters within the boundaries of the State [CWC section 13050 (e)]. The definition of the Waters of the State is broader than that for the Waters of the United States in that all water in the State is considered to be a Waters of the State regardless of circumstances or condition. Under this definition, a MS4 is always considered to be a Waters of the State.

Waters of the United States - As defined in the 40 CFR 122.2, the Waters of the U.S. are defined as: "(a) All waters, which 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 seas; and (g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition. 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 Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA."

Watershed - That geographical area which drains to a specified point on a water course, usually a confluence of streams or rivers (also known as drainage area, catchment, or river basin).

Watershed Runoff Management Plan (WRMP) – A written description of the specific watershed runoff management measures and programs that each watershed group of Copermittees will implement to comply with this Order and ensure that storm water pollutant discharges in runoff are reduced to the MEP and do not cause or contribute to a violation of water quality standards.

WDRs – Waste Discharge Requirements

This page left intentionally blank

Order No. R9-2009-0002

D-1

November 10, 2010

ATTACHMENT D**SCHEDULED SUBMITTALS SUMMARY AND REPORTING CHECKLIST**

Submittal	Permit Section	Completion Date	Frequency
Prohibitions on dry-weather discharges not listed in Section B.2	B.2	July 1, 2012, then in JRMP Annual Report	Annual
Submit Certified Statement of Adequate Legal Authority	E.2	June 30, 2012	One time
Updated SSMP	F.1.d, K.2.a	June 30, 2012	One time
Identify and remove barriers to LID implementation	F.1.d.(4)(a)(v)	With JRMP Annual Report	Annual
Hydromodification Management Plan	F.1.h.(5), K.2.b	June 30, 2013	One Time for Draft
Flood Control Structure BMP Inventory and Evaluation	F.3.a.(4)	With JRMP Annual Report	Annual
Retrofitting Program	F.3.d.(3)	With JRMP Annual Report	Annual
Updated Watershed Workplans	G.1 K.1.b	June 30, 2012	One time
Fiscal Analysis	H.3	With JRMP Annual Report	Annual
Updated Jurisdictional Runoff Management Plans	K.1.a	June 30, 2012	One time
Report of Waste Discharge	K.2.c	At least 180 days prior to expiration of this Order	One time
Principal Copermittee submits JRMP Annual Reports to Regional Board	K.3.a.(2)	October 31, 2013 and annually thereafter	Annual
Principal Copermittee submits Notification of Principal Copermittee	M	180 days after adoption of the Order	One Time

Jurisdictional Runoff Management Program Annual Report Checklist

In the JRMP Annual Report each Copermittee shall provide an Annual Report Checklist. The Annual Report Checklist must be no longer than 2 pages, be current as of the 1st day of the rainy season of that year, and include a signed certification statement. The Annual Report Summary Checklist must provide the following information:

Order Requirements

Were All Requirements of this Order Met?

Construction

Number of Active Sites
Number of Inactive Sites
Number of Sites Inspected
Number of Inspections
Number of Violations
Number of Construction Enforcement Actions Taken

New Development

Number of Development Plan Reviews
Number of Grading Permits Issued
Number of Projects Exempted from Interim/Final Hydromodification Requirements

Post Construction Development

Number of Priority Development Projects
Number of SUSMP Required Post-Construction BMP Inspections
Number of SUSMP Required Post-Construction BMP Violations
Number of SUSMP Required Post-Construction BMP Enforcement Actions Taken

Illicit Discharges and Connections

Number of IC/ID Inspections
Number of IC/ID Detections by Staff
Number of IC/ID Detections from the Public
Number of IC/ID Eliminations
Number of IC/ID Violations
Number of IC/ID Enforcement Actions Taken

MS4 Maintenance

Number of Inspections Conducted
Amount of Waste Removed
Total Miles of MS4 Inspected

Municipal/Commercial/Industrial

Number of Facilities
Number of Inspections Conducted
Number of Facilities Inspected
Number of Violations
Number of Enforcement Actions Taken

Attachment E

**RECEIVING WATERS AND MS4 DISCHARGE MONITORING AND REPORTING
PROGRAM NO. R9-2010-0016**

I.	PURPOSE	2
II.	MONITORING PROGRAM	2
A.	Receiving Waters Monitoring Program.....	3
1.	Mass Loading Station (MLS) Monitoring.....	3
2.	Stream Assessment Monitoring	6
3.	Follow-up Analysis and Actions	9
4.	Regional Monitoring Programs	10
B.	Wet Weather MS4 Discharge Monitoring	11
C.	Non-Storm Water Dry Weather Action Levels and IDDE	13
D.	High Priority Inland Aquatic Habitat Monitoring	15
E.	Special Studies	18
F.	Monitoring Provisions	22
III.	REPORTING PROGRAM	25
A.	Monitoring Reporting	25
B.	Interim Reporting Requirements	27
C.	Reporting Dates and Frequencies.....	28

I. PURPOSE

- A. This Receiving Waters and MS4 Discharge Monitoring and Reporting Program (MRP) is intended to meet the following goals:
1. Assess compliance with Order No. R9-2010-0016;
 2. Measure and improve the effectiveness of the Copermittees' runoff management programs;
 3. Assess the chemical, physical, and biological impacts to receiving waters resulting from MS4 discharges;
 4. Characterize storm water discharges;
 5. Identify sources of specific pollutants;
 6. Prioritize drainage and sub-drainage areas that need management actions;
 7. Detect and eliminate illicit discharges and illicit connections to the MS4;
 8. Assess the overall health of receiving waters; and
 9. Provide information to implement required BMP improvements.
- B. This Receiving Waters and MS4 Discharges Monitoring and Reporting Program is designed to answer the following core management questions¹:
1. Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
 2. What is the extent and magnitude of the current or potential receiving water problems?
 3. What is the relative MS4 discharge contribution to the receiving water problem(s)?
 4. What are the sources of MS4 discharge that contribute to receiving water problem(s)?
 5. Are conditions in receiving waters getting better or worse?

II. MONITORING PROGRAM

The Monitoring Program is designed to assess the condition of receiving waters, monitor pollutants in storm and non-storm water effluent from the MS4, and conduct Special Studies to address conditions of concern. Where feasible, the Monitoring Program is designed to allow the Copermittees to combine required monitoring elements or efforts that are not mutually exclusive while still meeting the requirements of the Order.

¹ Core management questions from "Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California: A report from the Stormwater Monitoring Coalition's Model Monitoring Technical Committee." Technical Report No. 419. August 2004.

A. Receiving Waters Monitoring Program

Each Copermittee must collaborate with the other Copermittees to develop, conduct, and report on a year-round watershed based Receiving Waters Monitoring Program. The monitoring program design, implementation, analysis, assessment, and reporting must be conducted on a watershed basis for the Santa Margarita Hydrologic Unit (HU) and must be designed to meet the goals and answer the questions listed in section I above. The monitoring program must include the following components:

1. MASS LOADING STATION (MLS) MONITORING

- a. Locations: The following existing mass loading stations must continue to be monitored: Lower Temecula Creek, Lower Murrieta Creek at the USGS Weir, and a permanent reference station.² Copermittees may propose, for San Diego Water Board review and approval, changing the location of a mass loading station.
- b. Frequency: Each mass loading station must be monitored each year three times during wet weather events and twice during dry weather flow conditions.
- c. Timing: Each mass loading station must be monitored for the first wet weather event of the season which meets USEPA's criteria described in 40 CFR 122.21(g)(7). Monitoring of the third wet weather event must be conducted after February 1. Dry weather mass loading monitoring events must be sampled at least three months apart between May and October. If flows are not evident for the second event, then sampling must be conducted during non-rain events in the following wet weather season.
- d. Protocols: Protocols for mass loading sampling and analysis including analytical methods, target reporting limits, and data reporting formats must be compatible with the State Water Resources Control Board's (State Water Board's) State Surface Water Ambient Monitoring Program (SWAMP). If the mass loading sampling and analysis are determined to be impracticable with the SWAMP standards, the Copermittees must provide a written explanation and discussion in the submittal of the Planned Monitoring Program. Wet weather samples must be flow-weighted composites, collected for the duration of the entire runoff event. Where such monitoring is not practical, such as for large watersheds with significant groundwater recharge flows, composites must be collected at a minimum during the first 3 hours of

² A map depicting mass loading stations can be found in the Fact Sheet for Order R9-2010-0016.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 4 -

November 10, 2010

flow. Dry weather event sampling must be time-weighted composites composed of 24 discrete hourly samples, whereby the mass loads of pollutants are calculated as the product of the composite sample concentration and the total volume of water discharged past the monitoring point during the time of sample collection.

- (1) Automatic samplers must be used to collect samples from mass loading stations.
 - (2) Grab samples must be analyzed for temperature, pH, specific conductance, biochemical oxygen demand, oil and grease, E. coli , fecal coliform, enterococcus and for total petroleum hydrocarbons whenever a sheen is observed.
- e. Copermittees must measure or estimate flow rates and volumes for each mass loading station sampling event to determine mass loadings of pollutants. Data from nearby USGS gauging stations may be utilized, or flow rates may be estimated in accordance with the USEPA Storm Water Sampling Guidance Document (EPA-833-B-92-001), Section 3.2.1.
 - f. In the event that the required number of sampling events are not conducted during one monitoring year at any given station, the Copermittees must provide a written explanation for the reduced number of sampling events in the subsequent Receiving Waters Monitoring Annual Report. The explanation must include, at a minimum, streamflow data from the nearest USGS gauging station, a full description of any equipment failures and subsequent remedies if applicable, efforts made to resample a future event, and any quality assurance or quality control issues encountered. The explanation must also include a description of steps taken to prevent further sampling failures.
 - g. The following constituents must be analyzed for each monitoring event at each station:

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 5 -

November 10, 2010

Table 1. Analytical Testing for Mass Loading (II.A.1) and Stream Assessment (II.A.2)

Conventional, Nutrients, Hydrocarbons	Pesticides	Metals (Total and Dissolved)	Bacteriological (mass loading)
• Total Dissolved Solids • Total Suspended Solids • Turbidity • Total Hardness • pH • Specific Conductance • Temperature • Dissolved Oxygen • Total Phosphorus • Dissolved Phosphorus • Nitrite NO_2^- • Nitrate NO_3^- • Total Kjeldahl Nitrogen • Ammonia • Biological Oxygen Demand, 5-day • Chemical Oxygen Demand • Total Organic Carbon • Dissolved Organic Carbon • Methylene Blue Active Substances • Oil and Grease • Sulfate	• Diazinon • Chlorpyrifos • Malathion • Carbamates • Pyrethroids	• Arsenic • Cadmium • Total Chromium • Hexavalent Chromium** • Copper • Lead • Iron • Manganese • Nickel • Selenium • Zinc • Mercury • Silver • Thallium	• E. coli • Fecal Coliform • Enterococcus
NO_2^- Nitrate and nitrite may be combined and reported as nitrate + nitrite. ** Hexavalent Chromium sampling must occur only for mass loading stations for the 1st wet weather event and 1 dry weather event.			

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 6 -

November 10, 2010

- h. Toxicity testing must be conducted for each monitoring event at each station according to the following Table 2:

Table 2. Toxicity Testing for Mass Loading (II.A.1) and Stream Assessment (II.A.2)

Program Component	Dry Weather Flows	Storm Water Flows
	Freshwater Organisms	Freshwater Organisms
Mass Loading	3 chronic* 3 acute*	3 acute*
Stream Assessment**	3 chronic* 3 acute*	n/a
Sediment Toxicity Special Study	1 chronic 1 acute	n/a
Table Notes * Toxicity testing must include use of <i>Pimephales promelas</i> (fathead minnow), <i>Hyaella azteca</i> and <i>Pseudokirchneriella subcapitata</i> (formerly <i>Selenastrum capricornutum</i>, unicellular algae). ** Duplicative toxicity testing is not required for Stream Assessment Monitoring stations co-located at mass loading stations since Stream Assessment Monitoring must be conducted in conjunction with dry weather mass loading. Species Notes: 1. Acute toxicity may be determined during the course of chronic toxicity monitoring per U.S. EPA protocols.		

- i. The presence of acute toxicity must be determined in accordance with USEPA protocol (EPA-821-R-02-012). The presence of chronic freshwater toxicity must be determined in accordance with USEPA protocol (EPA-821-R-02-013).

2. Stream Assessment Monitoring

Copermittees must conduct Stream Assessment Monitoring using multiple lines of evidence to assess the condition of biological communities in freshwater receiving waters. Stream assessment must include the collection and reporting of the following specified instream biological, chemical, and physical (including habitat) data.

- a. Locations: At a minimum, the program must consist of station identification, sampling, monitoring, and analysis of data for six stream assessment stations in order to determine the biological, chemical and physical integrity of streams within the County of Riverside. The two existing mass loading stations at Murrieta and Temecula Creeks must continue to be monitored. Copermittees may propose, for San Diego Water Board review and approval, changing the location of stream assessment monitoring stations where the mass loading stations

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 7 -

November 10, 2010

location has changed pursuant to section II.A.1.a. Two reference stream assessment stations, including the existing Adobe Creek station, must be identified, sampled, monitored, and analyzed. Locations of reference stations must be identified according to protocols outlined in "A Quantitative Tool for Assessing the Integrity of Southern Coastal California Streams," by Ode, et al. 2005.³

- b. Frequency: Stream assessment stations must be monitored in May or June (to represent the influence of wet weather on the communities). The timing of monitoring of stream assessment stations located at mass loading stations must coincide with dry weather monitoring of those mass loading stations.
- c. Parameters / Methods: Stream assessment monitoring must include bioassessment, aquatic chemistry, and aqueous toxicity.
 - (1) Aquatic chemistry and aqueous toxicity must be conducted as outlined in Tables 1 and 2 using the same parameters and methods as the mass loading station monitoring.
 - (2) Bioassessment analysis procedures must include calculation of the Index of Biotic Integrity (IBI) for benthic macroinvertebrates for all bioassessment stations, as outlined in "A Quantitative Tool for Assessing the Integrity of Southern Coastal California Streams," by Ode, et al. 2005.
 - (3) Monitoring of stream assessment stations must be conducted according to the most current bioassessment Standard Operating Procedures (SOP) developed by the Surface Water Ambient Monitoring Program (SWAMP), and amendments, as applicable.⁴ In collecting macroinvertebrate samples, the discharger must use the "Reachwide Benthos (Multihabitat) Procedure." The discharger must conduct, concurrently with all required macroinvertebrate collections, the "full" suite of physical/habitat characterization measurements specified in the SWAMP Bioassessment SOP, and as summarized in the *SWAMP Stream Habitat Characterization Form — Full Version*.⁵

³ Ode, et al. 2005. "A Quantitative Tool for Assessing the Integrity of Southern Coastal California Streams." Environmental Management. Vol. 35, No. 1, pp. 1-13.

⁴ Ode, P.R.. 2007. Standard operating procedures for collecting macroinvertebrate samples and associated physical and chemical data for ambient bioassessments in California. California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP) Bioassessment SOP 001.

http://www.swrcb.ca.gov/water_issues/programs/swamp/tools.shtml#monitoring

⁵ Available at:

http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/fieldforms_fullversion052908.pdf

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 8 -

November 10, 2010

- (4) Monitoring of stream assessment stations must incorporate assessment of algae using SWAMP's SOP for Collecting Stream Algae Samples.⁶ Assessment of freshwater algae must include algal taxonomic composition (diatoms and soft algae) and algal biomass. Future bioassessment must incorporate algal IBI scores, when developed.
- d. A qualified professional environmental laboratory must perform all sampling, laboratory, quality assurance, and analytical procedures in accordance with the Southern California Regional Watershed Monitoring Program Bioassessment Quality Assurance Project Plan.⁷ The Copermittees must utilize future Quality Assurance Project Plans as developed by SWAMP.
- (1) The Copermittees must have and follow a quality assurance (QA) plan that covers the required stream assessment monitoring. External QA checks must be funded by the Copermittees, and performed by the California Department of Fish and Game's Aquatic Bioassessment Laboratory. An alternate laboratory with equivalent expertise and performance may be used if approved in advance in writing by San Diego Water Board.
- (2) Identified organisms must be archived (i.e., retained) by the Copermittee(s) for a period of not less than three years from the date that all QA steps are completed. The identified organisms must be relinquished to the San Diego Water Board upon request by the San Diego Water Board.
- (3) The macroinvertebrate results (i.e., taxonomic identifications consistent with the specified SAFIT STEs, and number of organisms within each taxa) must be submitted to the San Diego Water Board in electronic format. SWAMP is currently developing standardized formats for reporting bioassessment data. All bioassessment data collected after those formats become available must be submitted using the SWAMP formats. Until those formats are available, the biological data must be submitted in MS-Excel⁸ (or equivalent) format.

⁶ Fetscher et al. 2009. Standard Operating Procedures for Collecting Stream Algae Samples and Associated Physical Habitat and Chemical Data for Ambient Bioassessments in California.

⁷ Version 1.0 of the Southern California Regional Watershed Monitoring Program Bioassessment Quality Assurance Program Plan was released on June 25, 2009.

⁸ Any version of Excel, 2000 or later, may be used.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 9 -

November 10, 2010

The physical/habitat data must be reported using the standard format titled *SWAMP Stream Habitat Characterization Form — Full Version*.

3. FOLLOW-UP ANALYSIS AND ACTIONS (TIE AND TRE TRIAD APPROACH)

When results from the required monitoring indicate adverse water quality effects at a mass loading station or stream assessment station as defined in Table 3, Copermittees within the watershed(s) that discharge to that location must evaluate the extent and causes of MS4 discharge pollution to the adverse effects in receiving waters and prioritize and implement management actions to eliminate non-storm water discharges and/or reduce storm water sources from the MS4 as described in Table 3. Toxicity Identification Evaluations (TIEs) must be conducted to determine the cause of toxicity as outlined in Table 3 below. Other follow-up activities, which must be conducted by the Copermittees, are also identified in Table 3. Once the cause of toxicity has been identified by a TIE, the Copermittees must perform source identification projects as needed and implement the measures necessary to reduce or eliminate the pollutant discharges and abate the sources causing the toxicity.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 10 -

November 10, 2010

Table 3. Triad Approach to Determining Follow-Up Actions⁹

Chemistry	Toxicity	Benthic Alteration	Example Conclusions	Possible Actions or Decisions
1. Exceedance of water quality objectives	Evidence of toxicity	Indications of alteration	Strong evidence of pollution-induced degradation	Use TIE to identify contaminants of concern, based on TIE metric Initiate upstream source identification as a high priority
2. No persistent exceedances of water quality objectives	No evidence of toxicity	No indications of alteration	No evidence of current pollution-induced degradation Potentially harmful pollutants not yet concentrated enough to cause visible impact	No immediate action necessary Conduct periodic broad scans for new and/or potentially harmful pollutants
3. Exceedance of water quality objectives	No evidence of toxicity	No indications of alteration	Contaminants are not bioavailable Test organisms not sensitive to problem pollutants	TIE would not provide useful information with no evidence of toxicity Continue monitoring for toxic and benthic impacts Initiate upstream source identification as a low priority Consider whether different or additional test organisms should be evaluated
4. No persistent exceedances of water quality objectives	Evidence of toxicity	No indications of alteration	Unmeasured contaminant(s) or conditions have the potential to cause degradation Pollutant causing toxicity at very low levels	Recheck chemical analyses; verify toxicity test results Consider additional advanced chemical analyses Use TIE to identify contaminants of concern, based on TIE metric Initiate upstream source identification as a medium priority
5. No persistent exceedances of water quality objectives	No evidence of toxicity	Indications of alteration	Alteration may not be due to toxic contamination Test organisms not sensitive to problem pollutants	No action necessary due to toxic chemicals Initiate upstream source identification (for physical sources) as a high priority Consider whether different or additional test organisms should be evaluated
6. Exceedance of water quality objectives	Evidence of toxicity	No indications of alteration	Toxic contaminants are bioavailable, but in situ effects are not demonstrable Benthic analysis not sensitive enough to detect impact Potentially harmful pollutants not yet concentrated enough to change community	Determine if chemical and toxicity tests indicate persistent degradation Recheck benthic analyses; consider additional data analyses If recheck indicates benthic alteration, perform TIE to identify contaminants of concern, based on TIE metric Initiate upstream source identification as a high priority If recheck shows no effect, use TIE to identify contaminants of concern, based on TIE metric Initiate upstream source identification as a medium priority
7. No persistent exceedances of water quality objectives	Evidence of toxicity	Indications of alteration	Unmeasured toxic contaminants are causing degradation Pollutant causing toxicity at very low levels Benthic impact due to habitat disturbance, not toxicity	Recheck chemical analyses and consider additional advanced analyses Use TIE to identify contaminants of concern, based on TIE metric Initiate upstream source identification as a high priority Consider potential role of physical habitat disturbance
8. Exceedance of water quality objectives	No evidence of toxicity	Indications of alteration	Test organisms not sensitive to problem pollutants Benthic impact due to habitat disturbance, not toxicity	TIE would not provide useful information with no evidence of toxicity Initiate upstream source identification as a high priority Consider whether different or additional test organisms should be evaluated Consider potential role of physical habitat disturbance

4. REGIONAL MONITORING PROGRAMS

The San Diego Water Board recognizes the importance and advantages of participation by Copermittees in Regional Monitoring Programs. As such, the Copermittees may propose participation in additional regional monitoring programs to supplement and/or replace monitoring required under this Order. The regional monitoring plan must be submitted to the San Diego Water Board¹⁰ for review and approval. Documentation of participation and monitoring must be included in the annual report(s).

⁹ Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California. Stormwater Monitoring Coalition August 2004. See Table 5-4 for definitions.

¹⁰ For the purposes of Receiving Waters and MS4 Discharge Monitoring and Reporting Program No. R9-2010-0016, review and approval by the San Diego Water Board of draft monitoring plans, proposals or protocols shall be conducted by the San Diego Water Board Executive Officer.

B. Wet Weather MS4 Discharge Monitoring

Each Copermittee must collaborate with the other Copermittees to develop, conduct, and report on a year-round, watershed-based, Wet Weather MS4 Discharge Monitoring Program. The monitoring program design, implementation, analysis, assessment, and reporting must be conducted on a watershed basis for each of the hydrologic subareas within the Santa Margarita HU under jurisdiction of the Copermittees. The monitoring program must be designed to meet the goals, and answer the questions, listed in Section I above, as well as to implement required Storm Water Action Levels (SALs) in the Order. The monitoring program must include the following components;

1. MS4 OUTFALL MONITORING

The Copermittees must collaborate to develop and implement a monitoring program to characterize pollutant discharges from MS4 outfalls in each watershed during wet weather. The program must include the rationale and criteria for selection of outfalls to be monitored. The program must, at a minimum, include collection of samples for pollutants listed in Table 4 (below). This monitoring program must be designed to sample a representative percentage¹¹ of the major outfalls within each hydrologic subarea and must begin no later than the 2012-2013 monitoring year.

- a. The program must comply with Section D of this Order for Storm Water Action Levels (SALs). Samples must be collected during the first 24 hours of the storm water discharge or for the entire storm water discharge if it is less than 24 hours.
 - (1) Grab samples may be utilized only for pH, indicator bacteria, DO, temperature and hardness.
 - (2) All other constituents must be sampled using 24-hour composite samples or for the entire storm water discharge if the storm event is less than 24 hours.
- b. Sampling to compare MS4 outfall discharges with total metal SALs must include a measurement of receiving water hardness at each outfall. If a total metal concentration exceeds a SAL in Section D of

¹¹ A representative percentage determination must consider hydrologic conditions, total drainage area of the site, population density of the site, traffic density, age of the structures or buildings in the area, and land use types (commercial, residential and industrial).

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 12 -

November 10, 2010

the Order, that concentration must be compared to the California Toxic Rule criteria and the USEPA 1-hour maximum concentration for the detected level of receiving water hardness associated with that sample. If it is determined that the sample's total metal concentration for that specific pollutant exceeds the SAL but does not exceed the applicable 1-hour criteria for the measured level of hardness, then the SAL shall be considered not exceeded for that measurement.

Table 4. Analytical Testing for Wet Weather MS4 Discharges

Conventionals, Nutrients, Hydrocarbons	Pesticides	Metals (Total and Dissolved)	Bacteriological
• Total Dissolved Solids • Total Suspended Solids • Turbidity* • Total Hardness • pH • Specific Conductance • Temperature • Dissolved Oxygen • Total Phosphorus* • Dissolved Phosphorus • Nitrite °* • Nitrate °* • Total Kjeldahl Nitrogen • Ammonia • Biological Oxygen Demand, 5-day • Chemical Oxygen Demand • Total Organic Carbon • Dissolved Organic Carbon • Oil and Grease • Sulfate	• Diazinon • Chlorpyrifos • Pyrethroids	• Arsenic • Cadmium* • Chromium • Copper* • Lead* • Nickel • Selenium • Zinc* • Mercury • Silver • Thallium • Iron • Manganese	• Fecal Coliform • Enterococcus • E. coli
° Nitrate and nitrite may be combined and reported as nitrate + nitrite. ★ Pollutant for which there is a Storm Water Action Level			

2. SOURCE IDENTIFICATION MONITORING

The Copermittees must collaborate to develop and implement a monitoring program to identify sources of pollutants causing the priority water quality problems within each hydrologic subarea. The monitoring program must include focused monitoring which moves upstream into each watershed as necessary to identify sources. This monitoring program must be implemented within each hydrologic subarea and must begin no later than the 2012-2013 monitoring year.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 13 -

November 10, 2010

3. COMMENCEMENT OF MS4 OUTFALL AND SOURCE IDENTIFICATION MONITORING

The Principal Copermittee must submit to the San Diego Water Board for review and approval, a detailed draft of the wet weather MS4 discharge monitoring program to be implemented. The description must identify and provide the rationale for all constituents monitored, locations of monitoring, frequency of monitoring, and analyses to be conducted with the data generated. The draft must be submitted with the proposed monitoring program (Section III.A.1).

C. Non-Storm Water Dry Weather Action Levels and Illicit Discharge Detection and Elimination

Each Copermittee must collaborate with the other Copermittees to conduct, and report on a year-round watershed based Dry Weather Non-storm Water MS4 Discharge Monitoring Program. The monitoring program's implementation, analysis, assessment, and reporting must be conducted to assess compliance with section B and C of this Order, meet the goals of the MRP, and conduct Illicit Discharge Detection and Elimination Activities under Section F.4 of this Order. The monitoring program must also be designed to assess the contribution of dry weather flows to Clean Water Act Section 303(d) listed impairments. The monitoring program must include the following components:

1. MS4 OUTFALL MONITORING

Each Copermittee's program must be designed to determine levels of pollutants in effluent discharges from the MS4 into receiving waters. Each Copermittee must conduct the following dry weather field screening and analytical monitoring tasks:

a. Dry Weather Non-storm Water Effluent Analytical Monitoring Station Identification

- (1) Sampling Stations must be located at major outfalls pursuant to section C of this Order. Other outfall sampling points (or any other point of access such as manholes) identified by the Copermittees as potential high risk sources of polluted effluent or as identified under Section C.4 of the Order must be sampled.
- (2) Each Copermittee must clearly identify each dry weather effluent analytical monitoring station on its MS4 Map as either a separate GIS layer or a map overlay hereinafter referred to as a Dry Weather Non-storm Water Effluent Analytical Stations Map.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 14 -

November 10, 2010

b. Develop Dry Weather Non-storm Water Effluent Analytical Monitoring Procedures

Each Copermittee must develop and/or update written procedures for effluent analytical monitoring including field observations, monitoring, and analyses to be conducted. These procedures must be consistent with 40 CFR part 136. At a minimum, the procedures must meet the following guidelines and criteria:

- (1) Determining Sampling Frequency: Effluent analytical monitoring must be conducted at major outfalls and identified stations. The Copermittees must sample a representative percentage of major outfalls and identified stations within each hydrologic subarea.¹² The sampling must be done to assess compliance with dry weather non-storm water action levels pursuant to section C of this Order. All monitoring conducted must be preceded by a minimum of 72 hours of dry weather.
- (2) Sampling of non-storm water discharges may be done utilizing grab samples. If a ponded MS4 discharge is observed at a monitoring station, the Copermittee(s) must record the observation and collect at least one (1) grab sample. If flow is evident, a 1-hour composite sample may be taken. The Copermittee(s) must estimate the discharge flow by measuring the width of water surface, approximate depth of water, and approximate flow velocity. A flow meter may also be utilized.
- (3) Effluent samples must undergo analytical laboratory analysis for (a) all constituents described in *Table 1. Analytical Testing for Mass Loading and Stream Assessment* of this Order; (b) Constituents with assigned non-storm water action levels under Section C of this Order; and (c) Total Residual Chlorine.
- (4) If the station is dry (i.e. no flowing or ponded MS4 discharge is observed), the Copermittee(s) must make and record all applicable observations on the MS4 outfall and receiving waters, including any evidence of past non-storm water flows and the presence of trash.

¹² A representative percentage determination must consider hydrologic conditions, total drainage area of the site, population density of the site, traffic density, age of the structures or buildings in the area, and land use types (commercial, residential and industrial).

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 15 -

November 10, 2010

2. SOURCE IDENTIFICATION MONITORING

The Copermittees must collaborate to develop and implement a monitoring program to identify sources of pollutants in non-storm water discharges in accordance with Sections C and F.4 of this Order. The source identification portion of the monitoring program must include: the following components:

- a. Development and/or update of response criteria for dry weather non-storm water effluent analytical monitoring results:
 - (1) Response criteria must include action levels described in Section C of this Order.
 - (2) Response criteria must include evaluation of LC₅₀ levels for toxicity to appropriate test organisms.
- b. Develop and/or update Illicit Discharge Detection and Elimination response procedures for source identification follow up investigations and elimination in the event of exceedance of dry weather non-storm water effluent analytical monitoring response criteria (see above). These procedures must be consistent with procedures required in section C, F.4.d, and F.4.e. of this Order.

3. COMMENCEMENT OF MS4 OUTFALL AND SOURCE IDENTIFICATION MONITORING

The Copermittees must commence implementation of dry weather effluent analytical monitoring under the requirements of this Order no later than **July 1, 2012**. If monitoring indicates an illicit connection or illegal discharge, the Copermittee(s) must conduct the follow-up investigation and elimination activities described in sections C, F.4.d and F.4.e of this Order. In the interim period until the dry weather non-storm water effluent analytical monitoring program of this Order is implemented, each Copermittee must continue to implement dry weather field screening and analytical monitoring as it was most recently implemented pursuant to Order No. 2004-001.

D. High Priority Inland Aquatic Habitat Monitoring

The Copermittees must develop and submit to the San Diego Water Board by April 01, 2012, an inland aquatic habitat monitoring program for areas supporting high priority aquatic and/or riparian species. The goal of the monitoring program is to assess if MS4 storm water and non-storm water

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 16 -

November 10, 2010

discharges are affecting high priority inland aquatic habitat. The monitoring will assist the Copermittees in preventing the degradation of high quality waters within the jurisdiction of this Order that support high priority species by identifying discharges from MS4s which may cause or have the potential to cause impairment of beneficial uses within these areas.¹³ High priority species include those federally and/or state listed as endangered, threatened, or as a species of concern. The design and goal of the monitoring program must be consistent with the criteria listed in Section I.B of this Monitoring Program, including evaluation of the protection of high priority species in receiving waters. The Copermittees must implement the program unless otherwise directed in writing by the San Diego Water Board.

The monitoring program must include the following components:

1. OUTFALL AND RECEIVING WATER MONITORING

The program must be designed to determine levels of pollutants in storm water and non-storm water effluent discharges from the MS4 discharged into high priority inland aquatic habitat(s) and the level of those pollutants found in ambient receiving waters subject to the discharge. The Copermittees must conduct the following field screening and analytical monitoring tasks:

a. MS4 and Receiving Waters Monitoring Station Identification

- (1) MS4 discharge stations must be major outfalls that directly discharge into high priority inland aquatic habitat. MS4 discharge stations may be selected in conjunction with monitoring required under Section II.B and II.C of the Receiving Waters and MS4 Discharge Monitoring Program.
- (2) Receiving water station(s) must be located upstream and downstream of the discharge within the high priority inland aquatic habitat. Receiving water stations must be located to prevent any significant co-mingling of receiving water flows with other sources.

¹³ In accordance with requirements of State Water Resources Control Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 17 -

November 10, 2010

b. Develop Analytical Monitoring Procedures

Each Copermittee must develop procedures for analytical monitoring (these procedures must be consistent with 40 CFR part 136), including field observations, pollutants to be monitored, analyses to be conducted, and quality assurance/control. At a minimum, the procedures must meet the following guidelines and criteria:

- (1) Determining Sampling Frequency: The Copermittees must sample a representative number of major outfalls and receiving waters that are considered high priority inland aquatic habitat. Sampling of the discharge and receiving waters must be paired and occur during both storm and non-storm conditions.
- (2) Sampling in receiving waters may be done utilizing grab samples, though composite samples are encouraged. Sampling of storm and non-storm water discharges from the MS4 must be done in accordance with Section II.B and II.C. If ponded receiving waters is/are observed at a monitoring station, the Copermittees must make written observations and collect at least one (1) grab sample. The Copermittee(s) must estimate the flow by measuring the width of water surface, approximate depth of water, and approximate flow velocity
- (3) The proposed constituents for which samples will undergo analytical laboratory analysis.
- (4) Procedures for recording applicable observations when monitoring stations are dry (i.e. no flowing water or ponded conditions).

3. ASSESSMENT OF MONITORING RESULTS

The program must include a discussion of monitoring results within the monitoring annual report. The discussion must include an evaluation of the contribution of MS4 discharges to ambient water conditions within high priority inland aquatic habitats, as well as any actions taken to prevent and/or reduce sources of those pollutants.

4. SOURCE IDENTIFICATION MONITORING

The Copermittees must collaborate to conduct source identification monitoring in accordance with Section II.B and II.C of the Monitoring and Reporting Program of this Order.

E. Special Studies

1. The Copermittees must conduct special studies, including any monitoring and/or modeling required for TMDL development and implementation, as directed by the San Diego Water Board.
2. Sediment Toxicity Study

The Copermittees must develop and submit to the San Diego Water Board by April 01, 2012, a special study workplan to investigate the toxicity of sediment in streams and potential impact on benthic macroinvertebrate IBI scores. The Sediment Toxicity Special Study must be implemented in conjunction with the Stream Assessment Monitoring in II.A.2. The Copermittees must implement the special study unless otherwise directed in writing by the San Diego Water Board.

The Sediment Toxicity Special Study must include the following elements:

- a. Sampling Locations: At least 4 stream assessment locations must be sampled, including 1 reference site and 1 mass loading site. Selection of sites must be done with consideration of subjectivity of receiving waters to discharges from residential and agricultural land uses.
- b. Frequency: At a minimum, sampling must occur once per year at each site for at least 2 years. Sampling must be done in conjunction with the stream assessment sampling required under Section II.A.2 of the Monitoring and Reporting Program of this Order.
- c. Parameters/Methods: At a minimum, sediment toxicity analysis must include the measurement of metals, pyrethroids and organochlorine pesticides. The analysis must include estimates of bioavailability based upon sediment grain size, organic carbon and receiving water temperature at the sampling site. Acute and chronic toxicity testing must be done using *Hyalella azteca* in accordance with Table 2.
- d. Results: Results and a Discussion must be included in the Monitoring Annual Report (see III.A). The Discussion must include an assessment of the relationship between observed IBI scores under Section II.A.2 and all variables measured.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 19 -

November 10, 2010

3. Trash and Litter Investigation

The Copermittees must develop and submit to the San Diego Water Board by September 01, 2012, a special study workplan to assess trash (including litter) as a pollutant within receiving waters on a watershed based scale. Litter is defined in California Government Code 68055.1g as "...improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or container constructed of steel, aluminum, glass, paper, plastic and other natural and synthetic, materials, thrown or deposited on lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing." A lead Copermittee must be selected for the Santa Margarita HU for the purposes of this Special Study. The Copermittees must implement the special study unless otherwise directed in writing by the San Diego Water Board

The Trash and Litter Investigation must include the following elements:

- a. Locations: The lead Copermittee must identify suitable sampling locations within the Santa Margarita HU.
- b. Frequency: Trash at each location must be monitored a minimum of twice during the wet season following a qualified monitoring storm event (minimum of 0.1 inches preceded by 72 hours of dry weather) and twice during the dry season.
- c. Protocol: The lead Copermittee for the Santa Margarita HU must use the "Final Monitoring Workplan for the Assessment of Trash in San Diego County Watersheds" and "A Rapid Trash Assessment Method Applied to Waters of the San Francisco Bay Region" to develop a monitoring protocol for the Santa Margarita HU.
- d. Results and Discussion from the Trash and Litter Study must be included in the Monitoring Annual Report. The Results and Discussion must, at a minimum, include source identification, an evaluation of BMPs for trash reduction and prevention, and a description of any BMPs implemented in response to study results.

4. Agricultural, Federal and Tribal Input Study

The Copermittees must develop and submit to the San Diego Water Board by September 01, 2012, a special study workplan to investigate the water quality of agricultural, federal and tribal runoff that is discharged into

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 20 -

November 10, 2010

their MS4 (see Finding D.3.c of the Order). The Copermittees must implement the special study unless otherwise directed in writing by the San Diego Water Board.

The Agricultural, Federal and Tribal Input Special Study must include the following elements:

- a. Locations: The Copermittees must identify a representative number of sampling stations within their MS4 that receive discharges of agricultural, federal, and tribal runoff that has not co-mingled with any other source. At least one station from each category must be identified.
- b. Frequency: One storm event must be monitored at each sampling location each year for at least 2 years.
- c. Parameters/Methods: At a minimum, analysis must include those constituents listed in Table 1 of the MRP (see II.A.1). Grab samples may be utilized, though composite samples are preferred. Copermittees must also measure or estimate flow rates and volumes of discharges into the MS4.
- d. Results: Results and Discussion from the Agricultural, Federal and Tribal Input Study must be included in the Monitoring Annual Report.

5. MS4 and Receiving Water Maintenance Study

The Copermittees must develop and submit to the San Diego Water Board by April 01, 2012, a special study workplan to investigate receiving waters that are also considered part of the MS4 (see Finding D.3.c of the Order) and which are subject to continual vegetative clearance activities (e.g. mowing). The study must be designed to assess the effects of vegetation removal activities and water quality, including, but not limited to, modification of biogeochemical functions, in-stream temperatures, receiving water bed and bank erosion potential and sediment transport. The Copermittees must implement the special study unless otherwise directed in writing by the San Diego Water Board.

The MS4 and Receiving Water Maintenance Special Study must include the following elements:

- a. Locations: The Copermittees must identify suitable sampling locations, including at least one reference system that is not subject to maintenance activities.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 21 -

November 10, 2010

- b. Parameters/Methods: At a minimum, the Copermittees must monitor pre and post maintenance activities for indicator bacteria, turbidity (NTU), temperature, dissolved oxygen and nutrients (Nitrite, Nitrate, Total Kjeldahl Nitrogen, Ammonia and Total Phosphorous). Copermittees must also measure or estimate flow rates and volumes.
- c. Results and Discussion from the MS4 and Receiving Water Maintenance Study must be included in the Annual Monitoring Report. The Discussion must include relevance of findings to CWA Section 303(d) listed impaired waters.

6. Intermittent and Ephemeral Stream Perennial Conversion Study

The Copermittees must develop and submit to the San Diego Water Board by April 01, 2013, a special study workplan to investigate the extent of any impacts to beneficial uses from the conversion of historically ephemeral or intermittent receiving waters to perennially flowing waters due to the continued discharge of currently exempted non-storm water from the MS4 and/or discharges into MS4s covered under a separate NPDES permit into receiving waters. The goal of the study is to assess if any impacts to beneficial uses, including, but not limited to, WILD, WARM, COLD or RARE, have occurred due to continuous discharge of currently exempted non-storm water discharges, and if the discharges should no longer be exempt. The Copermittees must implement the special study unless otherwise directed in writing by the San Diego Water Board.

The Intermittent and Ephemeral Stream Perennial Conversion Special Study must include the following elements:

- a. Locations: The Copermittees must investigate their MS4 and adjacent downstream receiving waters to identify portions that have historically been ephemeral or intermittent but currently exhibit perennial flow due to exempted non-storm water discharges. Investigation must include historic habitat assessments, USGS gauging information, and historic aerial photography. Sampling must occur at a minimum of 2 identified perennially converted locations. Should the Copermittees be unable to locate any converted waters, a full description of the investigation must be documented in the annual report.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 22 -

November 10, 2010

- b. Parameters/Methods: The Copermittees must conduct water quality monitoring of the non-storm water discharge in accordance with Section C of this Order. In addition, the Copermittees must select a minimum of 2 downstream sampling points within the receiving waters subject the discharge and conduct the following:
 - (1) Grab samples must be taken and analyzed for indicator bacteria, nutrients (Nitrite, Nitrate, Total Kjeldahl Nitrogen, Ammonia and Total Phosphorous), turbidity (NTU), temperature, dissolved oxygen, total hardness, pH and 303(d) listed pollutants for all receiving waters at or downstream of the sampling site. The Copermittees must measure or estimate flow rates and volumes at each sampling point.
 - (2) Sampling at each site must include a quantitative and qualitative evaluation of beneficial uses. At a minimum, sampling must include observation estimation of active bed and bank erosion and erosion potential, invasive/non-native plant cover, aquatic non-native species, and potential vector control requirements.
 - c. Results and Discussion from the Intermittent and Ephemeral Stream Perennial Conversion Study must be included in the Annual Monitoring Report.
7. Stormwater Monitoring Coalition (SMC) Regional Monitoring of Southern California Coastal Watersheds:

The Copermittees must implement the monitoring program developed by the SMC for Regional Monitoring of the southern California coastal watersheds within the Santa Margarita Hydrologic Unit. Each Copermittee must evaluate the results of the monitoring program within and downstream of their jurisdiction and integrate the results into program assessments and modifications.

F. Monitoring Provisions

All monitoring activities must meet the following requirements:

- 1. Where procedures are not otherwise specified in this Receiving Waters Monitoring and Reporting Program, sampling, analysis and quality assurance/quality control must be conducted in accordance with the Quality Assurance Management Plan (QAMP) for the State of California's Surface Water Ambient Monitoring Program (SWAMP), adopted by the State Water Resources Control Board (SWRCB).

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 23 -

November 10, 2010

2. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity [40 CFR 122.41(j)(1)].
3. The Copermittees must 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 San Diego Water Board or USEPA at any time and must be extended during the course of any unresolved litigation regarding this discharge. [40 CFR 122.41(j)(2), CWC section 13383(a)]
4. Records of monitoring information must include [40 CFR 122.41(j)(3)]:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
5. 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 Receiving Waters Monitoring and Reporting Program or approved by the San Diego Water Board [40 CFR 122.41(j)(4)].
6. 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 must, 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 imprisonment of not more than four years, or both. [40 CFR 122.41(j)(5)]
7. Calculations for all limitations which require averaging of measurements must utilize an arithmetic mean unless otherwise specified in this Receiving Waters Monitoring and Reporting Program. [40 CFR 122.41(l)(4)(iii)]

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 24 -

November 10, 2010

8. All chemical, bacteriological, and toxicity analyses must be conducted at a laboratory certified for such analyses by the California Department of Health Services or a laboratory approved by the San Diego Water Board.
9. For priority toxic pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Copermittees must instruct their laboratories to establish calibration standards that are equivalent to or lower than the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). If a Copermittee can demonstrate that 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 (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. The Copermittee must submit documentation from the laboratory to the San Diego Water Board for approval prior to raising the ML for any priority toxic pollutant.
10. The San Diego Water Board may make revisions to this Receiving Waters and MS4 Discharge Monitoring and Reporting Program at any time during the term of Order No. R9-2010-0016 and may include a reduction or increase in the number of parameters to be monitored, locations monitored, the frequency of monitoring, or the number and size of samples collected.
11. The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance must, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both. [40 CFR 122.41(k)(2)]
12. Monitoring must be conducted according the USEPA test procedures approved under 40 CFR 136, "Guidelines Establishing Test Procedures for Analysis of Pollutants under the Clean Water Act" as amended, unless other test procedures have been specified in this Receiving Waters and MS4 Discharge Monitoring and Reporting Program, in Order No. R9-2010-0016, or by the San Diego Water Board.
13. If a Copermittee(s) 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 must

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 25 -

November 10, 2010

be included in the calculation and reporting of the data submitted in the reports requested by the San Diego Water Board. [40 CFR 122.41(l)(4)(ii)]

III. REPORTING PROGRAM

A. Monitoring Reporting

1. Planned Monitoring Program: The Principal Copermittee must submit to the San Diego Water Board by **June 1, 2012**, a proposed workplan describing the Receiving Waters and MS4 Discharge Monitoring Program to be implemented. Any updates to the planned monitoring program workplan proposed by the Copermittees shall be submitted with each Monitoring Annual Report. The Copermittees shall implement the proposed workplan unless otherwise directed in writing by the San Diego Water Board.
2. Monitoring Annual Report: The Principal Copermittee must submit the Receiving Waters and MS4 Discharge Monitoring Annual Report to the San Diego Water Board on October 1 of each year, beginning on **October 1, 2013**. Receiving Waters and MS4 Discharge Monitoring Annual Reports must include monitoring conducted under the previous fiscal year, must meet the following requirements:
 - a. Annual monitoring reports must include the data/results, methods of evaluating the data, graphical summaries of the data, and an explanation/discussion of the data for each monitoring program component.
 - b. Annual monitoring reports must include a watershed-based analysis of the findings of each monitoring program component (mass loading, bioassessment, etc...). Each watershed-based analysis must include:
 - (1) Identification and prioritization of water quality problems within each watershed.
 - (2) Identification and description of the nature and magnitude of potential sources of the water quality problems within each watershed.
 - (3) Evaluation and presentation of pollutant load and concentration increases or decreases at each mass loading station over time.
 - (4) Evaluation of pollutant loads and concentrations measured at mass loading stations with respect to land use, population, sources, and other characteristics of watersheds using tools such as multiple linear regression, factor analysis, and cluster analysis.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 26 -

November 10, 2010

- (5) Identification of links between source activities/conditions and observed receiving water impacts.
 - (6) Identification of recommended future monitoring to identify and address sources of water quality problems.
 - (7) Results and discussion of any TIE conducted, together with actions that will be implemented to reduce the discharge of pollutants in storm water, eliminate any discharge of pollutants in non-storm water, and abate the sources causing the toxicity.
- c. Annual monitoring reports must include an analysis and interpretation of the data for each watershed with respect to the management questions listed in section I.B of this Receiving Waters Monitoring and Reporting Program.
 - d. Annual monitoring reports must include a discussion describing how each of the goals listed in section I.A of this MRP is addressed by the Copermittees' monitoring program for the monitoring year covered by the report.
 - e. Annual monitoring reports must include identification and analysis of any long-term trends in storm water or receiving water quality. Trend analysis must use nonparametric approaches, such as the Mann-Kendall test, including exogenous variables in a multiple regression model, and/or using a seasonal nonparametric trend model, where applicable.
 - f. Annual monitoring reports must provide an estimation of total pollutant loads (wet weather loads plus dry weather loads) due to MS4 Discharge for each of the hydrologic subareas, including for 303(d) pollutants specified in Table 2 of the Order.
 - g. Annual monitoring reports must, for each monitoring program component listed above, include an assessment of compliance with applicable water quality standards.
 - h. Annual monitoring reports must describe monitoring station locations by latitude and longitude coordinates, frequency of sampling, quality assurance/quality control procedures, and sampling and analysis protocols.

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 27 -

November 10, 2010

- i. Annual monitoring reports must use a standard report format and include the following elements:
 - (1) A stand alone comprehensive executive summary addressing all sections of the monitoring report;
 - (2) Comprehensive interpretations and conclusions; and
 - (3) Recommendations for future actions.
 - j. All monitoring reports submitted to the Principal Copermittee or the San Diego Water Board must contain the certified perjury statement described in Attachment B of this Order No. R9-2010-0016.
 - k. Annual monitoring reports must be reviewed prior to submittal to the San Diego Water Board by a committee of the Copermittees (consisting of no less than three different Copermittee members).
 - l. Annual monitoring reports must be submitted in both electronic and paper formats. Electronic formats must be CEDEN or SWAMP-uploadable.¹⁴
3. Monitoring programs and reports must comply with section II.F of Receiving Waters and MS4 Discharge Monitoring and Reporting Program No. R9-2010-0016 and Attachment B of this Order.
4. Following completion of an annual cycle of monitoring in October, the Copermittees must make the monitoring data and results available to the San Diego Water Board at the San Diego Water Board's request. Following completion of the annual cycle of monitoring, the Copermittees must upload monitoring data and results into the California Environmental Data Exchange Network (CEDEN)¹⁵.

B. Interim Reporting Requirements

For the October 2010 to October 2012 monitoring period, the Principal Copermittee must submit the Receiving Waters Monitoring Annual Report as required under Order No. 2004-001. The Receiving Waters Monitoring Annual Report must address the monitoring conducted to comply with the requirements of Order No. 2004-0001.

¹⁴ For updates to the SWAMP templates and formats, see <http://www.waterboards.ca.gov/swamp>.

¹⁵ <http://www.ceden.org/>

Receiving Waters
and MS4 Discharge Monitoring
and Reporting Program
No. R9-2010-0016

- 28 -

November 10, 2010

C. Reporting Dates

Table 5. Table of Required MRP Reporting Dates and Frequencies.

Submittal	Section	Completion Date	Frequency
Description of Proposed Monitoring Program	III.A.1	June 1, 2012	One Time
Receiving Waters and MS4 Discharge Monitoring Annual Reports, Including Proposed Updates to the Monitoring Program	III.A.2	Starting October 1, 2013	Annual
Copermittees submit Interim Monitoring Program Annual Report	III.B	As required under Order No. 2004-001	One Time
Draft Wet Weather MS4 Discharge Monitoring Program	II.B	June 01, 2012	One Time
Draft High Priority Inland Aquatic Habitat Monitoring	II.D	April 01, 2012	One Time
Draft Sediment Toxicity Special Study	II.E.2	April 01, 2012	One Time
Draft Trash and Litter Special Study	II.E.3	September 01, 2012	One Time
Draft Agricultural, Federal and Tribal Input Study	II.E.4	September 01, 2012	One Time
Draft MS4 and Receiving Water Maintenance Study	II.E.5	April 01, 2012	One Time
Draft Intermittent and Ephemeral Stream Perennial Conversion Study	II.E.6	April 01, 2013	One Time

Attachment F

SOURCE DATA

I.	STORM WATER ACTION LEVELS DATABASE.....	2
II.	NUMERIC ACTION LEVELS EVALUATION DATA ¹	9

¹ Represented data from monitoring conducted by the Copermittees and provided in the 2008-09 Annual Monitoring Report.

Source Data

- 2 -

November 10, 2010

Order No. R9-2010-0016

I. STORM WATER ACTION LEVELS DATABASE

N02+NO3 (mg/l)	Phosphorous Total (mg/l)	Cadmium Total (ug/l)	Copper Total (ug/l)	Lead Total (ug/l)	Zinc Total (ug/l)	Turbidity (NTU)
4.70	7.90	9.80	800.00	660.00	22500.00	10
4.20	7.19	6.00	340.00	620.00	18000.00	15
3.90	4.96	6.00	320.00	540.00	11000.00	15
3.90	4.50	6.00	270.00	520.00	9970.00	16
3.60	4.40	6.00	244.00	460.00	9100.00	22
3.60	4.24	6.00	230.00	450.00	8800.00	23
3.60	2.59	5.30	220.00	450.00	6500.00	23
3.50	2.59	5.00	220.00	440.00	5500.00	24
3.30	2.50	4.10	210.00	430.00	5000.00	24
3.30	2.50	4.00	210.00	400.00	4900.00	30
3.10	2.50	4.00	209.00	380.00	4600.00	31
3.00	2.27	4.00	209.00	360.00	4300.00	33
2.96	2.00	4.00	200.00	350.00	3800.00	36
2.90	2.00	4.00	200.00	330.00	3800.00	36
2.70	2.00	4.00	200.00	320.00	3400.00	39
2.70	2.00	3.90	200.00	320.00	3390.00	40
2.60	1.90	3.80	200.00	320.00	3100.00	45
2.60	1.90	3.40	180.00	310.00	2500.00	50
2.60	1.80	3.40	180.00	310.00	2200.00	50
2.50	1.80	3.20	166.00	310.00	2100.00	60
2.50	1.70	3.10	163.00	310.00	1829.00	61
2.32	1.70	3.00	160.00	300.00	1700.00	62
2.30	1.70	3.00	150.00	290.00	1500.00	65
2.20	1.60	3.00	140.00	280.00	1400.00	65
2.20	1.60	3.00	140.00	270.00	1300.00	66
2.10	1.60	3.00	140.00	270.00	1300.00	69
2.10	1.53	3.00	140.00	270.00	1285.00	70
2.10	1.50	3.00	140.00	270.00	1200.00	72
2.10	1.50	3.00	130.00	260.00	1100.00	80
2.00	1.47	3.00	130.00	260.00	1054.00	84
2.00	1.46	3.00	128.00	250.00	1000.00	97
2.00	1.40	3.00	120.00	250.00	980.00	111
2.00	1.40	3.00	120.00	250.00	960.00	140
1.90	1.40	3.00	120.00	245.00	850.00	151
1.90	1.30	2.90	120.00	230.00	850.00	157
1.90	1.30	2.80	120.00	230.00	850.00	590
1.90	1.30	2.70	111.00	225.00	850.00	
1.90	1.30	2.60	111.00	220.00	840.00	
1.80	1.30	2.50	110.00	220.00	780.00	
1.80	1.30	2.40	110.00	210.00	768.00	
1.70	1.24	2.40	110.00	210.00	760.00	
1.70	1.20	2.30	110.00	200.00	750.00	

Source Data

- 3 -

November 10, 2010

Order No. R9-2010-0016

1.70	1.20	2.20	110.00	200.00	740.00	
1.70	1.20	2.10	110.00	190.00	740.00	
1.70	1.20	2.00	100.00	190.00	730.00	
1.70	1.10	2.00	100.00	190.00	720.00	
1.70	1.10	2.00	100.00	190.00	710.00	
1.60	1.10	2.00	100.00	170.00	710.00	
1.60	1.10	2.00	100.00	170.00	700.00	
1.60	1.06	2.00	100.00	170.00	700.00	
1.60	1.00	2.00	99.00	160.00	690.00	
1.60	0.96	2.00	94.00	160.00	690.00	
1.60	0.96	2.00	91.00	150.00	680.00	
1.60	0.94	2.00	91.00	150.00	680.00	
1.53	0.94	2.00	90.00	150.00	670.00	
1.50	0.92	2.00	90.00	150.00	660.00	
1.50	0.91	2.00	89.00	150.00	660.00	
1.50	0.85	2.00	87.00	140.00	660.00	
1.50	0.85	2.00	87.00	140.00	650.00	
1.50	0.85	2.00	84.00	140.00	630.00	
1.50	0.83	2.00	83.00	130.00	610.00	
1.40	0.83	2.00	82.00	130.00	610.00	
1.40	0.83	2.00	81.00	130.00	597.00	
1.40	0.81	2.00	81.00	130.00	590.00	
1.40	0.81	2.00	77.00	130.00	590.00	
1.40	0.81	2.00	77.00	123.00	576.00	
1.40	0.80	2.00	76.00	120.00	570.00	
1.40	0.80	2.00	74.00	120.00	570.00	
1.32	0.78	2.00	72.00	120.00	560.00	
1.30	0.78	1.90	72.00	120.00	560.00	
1.30	0.77	1.90	72.00	120.00	540.00	
1.30	0.77	1.90	72.00	115.00	540.00	
1.30	0.76	1.80	72.00	110.00	520.00	
1.30	0.76	1.80	71.00	110.00	520.00	
1.30	0.75	1.80	70.00	110.00	520.00	
1.30	0.75	1.70	70.00	110.00	510.00	
1.29	0.75	1.60	67.00	102.00	500.00	
1.20	0.74	1.60	66.00	100.00	500.00	
1.20	0.73	1.60	66.00	100.00	490.00	
1.20	0.72	1.60	66.00	100.00	480.00	
1.20	0.72	1.60	65.00	100.00	475.00	
1.20	0.72	1.60	65.00	100.00	470.00	
1.20	0.71	1.50	63.00	99.00	470.00	
1.20	0.71	1.50	63.00	97.00	462.00	
1.20	0.69	1.40	62.00	97.00	460.00	
1.20	0.68	1.30	62.00	97.00	460.00	
1.20	0.68	1.30	60.00	95.00	450.00	
1.20	0.68	1.20	60.00	91.00	440.00	
1.10	0.68	1.20	59.00	90.00	440.00	
1.10	0.68	1.20	56.59	90.00	440.00	

Source Data

- 4 -

November 10, 2010

Order No. R9-2010-0016

1.10	0.67	1.20	55.00	87.00	430.00	
1.10	0.66	1.10	55.00	86.00	430.00	
1.10	0.66	1.10	54.00	86.00	430.00	
1.10	0.65	1.10	54.00	84.00	420.00	
1.10	0.65	1.10	54.00	82.00	420.00	
1.10	0.65	1.10	53.00	82.00	410.00	
1.10	0.65	1.00	53.00	81.00	409.00	
1.00	0.63	1.00	52.00	78.00	400.00	
1.00	0.62	1.00	51.00	78.00	400.00	
1.00	0.61	1.00	50.00	78.00	400.00	
1.00	0.60	1.00	50.00	77.00	390.00	
1.00	0.60	1.00	50.00	76.00	390.00	
1.00	0.59	1.00	50.00	76.00	390.00	
0.99	0.57	1.00	50.00	69.00	390.00	
0.99	0.57	1.00	50.00	69.00	390.00	
0.98	0.56	1.00	50.00	67.00	370.00	
0.97	0.56	1.00	50.00	66.00	370.00	
0.96	0.55	1.00	49.00	66.00	370.00	
0.96	0.55	1.00	49.00	66.00	360.00	
0.95	0.55	1.00	49.00	65.00	360.00	
0.95	0.53	1.00	48.00	64.00	360.00	
0.93	0.53	1.00	48.00	61.00	360.00	
0.93	0.53	1.00	47.00	57.00	350.00	
0.93	0.52	1.00	46.08	57.00	350.00	
0.93	0.52	1.00	46.00	56.00	350.00	
0.92	0.52	1.00	46.00	56.00	340.00	
0.90	0.52	1.00	44.25	53.00	340.00	
0.88	0.51	1.00	44.00	53.00	340.00	
0.87	0.51	1.00	44.00	52.60	340.00	
0.86	0.50	1.00	44.00	52.00	340.00	
0.85	0.49	1.00	44.00	51.00	340.00	
0.84	0.49	1.00	43.00	51.00	334.00	
0.83	0.48	1.00	43.00	50.00	330.00	
0.81	0.48	1.00	43.00	50.00	330.00	
0.81	0.48	1.00	42.00	50.00	330.00	
0.80	0.47	1.00	42.00	50.00	330.00	
0.80	0.47	1.00	42.00	50.00	330.00	
0.78	0.47	1.00	41.00	50.00	330.00	
0.78	0.46	1.00	40.00	50.00	330.00	
0.77	0.46	1.00	40.00	50.00	320.00	
0.77	0.46	1.00	40.00	50.00	320.00	
0.77	0.45	1.00	40.00	50.00	320.00	
0.74	0.45	1.00	40.00	50.00	320.00	
0.73	0.44	1.00	39.00	49.00	310.00	
0.72	0.44	1.00	39.00	47.00	310.00	
0.69	0.44	1.00	39.00	46.00	310.00	
0.69	0.44	1.00	39.00	46.00	308.00	
0.69	0.44	1.00	39.00	44.00	300.00	

Source Data

- 5 -

November 10, 2010

Order No. R9-2010-0016

0.67	0.44	1.00	39.00	44.00	300.00	
0.67	0.44	1.00	37.00	43.00	300.00	
0.66	0.43	1.00	37.00	42.00	300.00	
0.66	0.42	1.00	37.00	41.00	290.00	
0.65	0.42	1.00	37.00	41.00	285.00	
0.63	0.41	1.00	37.00	41.00	280.00	
0.62	0.41	1.00	36.00	41.00	280.00	
0.62	0.41	1.00	36.00	41.00	280.00	
0.62	0.40	1.00	36.00	40.10	280.00	
0.60	0.40	1.00	36.00	40.00	280.00	
0.59	0.40	1.00	35.00	39.30	280.00	
0.59	0.40	1.00	35.00	39.00	280.00	
0.58	0.40	1.00	34.00	39.00	280.00	
0.57	0.40	1.00	34.00	39.00	280.00	
0.57	0.40	1.00	33.40	38.00	270.00	
0.55	0.40	1.00	33.00	38.00	270.00	
0.52	0.40	1.00	33.00	38.00	270.00	
0.50	0.40	1.00	33.00	37.00	270.00	
0.50	0.39	1.00	33.00	36.00	270.00	
0.46	0.39	1.00	33.00	36.00	270.00	
0.42	0.39	1.00	32.26	36.00	260.00	
0.42	0.38	1.00	32.01	36.00	260.00	
0.35	0.38	1.00	32.00	35.00	260.00	
0.10	0.38	1.00	32.00	34.00	260.00	
0.06	0.37	1.00	32.00	34.00	260.00	
	0.36	1.00	32.00	33.00	250.00	
	0.36	1.00	32.00	33.00	250.00	
	0.36	1.00	32.00	33.00	250.00	
	0.36	1.00	32.00	33.00	250.00	
	0.36	1.00	31.00	33.00	250.00	
	0.35	1.00	31.00	32.00	247.00	
	0.35	1.00	31.00	32.00	242.13	
	0.35	1.00	31.00	31.94	240.00	
	0.35	1.00	30.00	30.00	240.00	
	0.34	1.00	30.00	30.00	240.00	
	0.34	1.00	30.00	30.00	240.00	
	0.34	1.00	30.00	30.00	240.00	
	0.34	1.00	30.00	30.00	230.00	
	0.34	1.00	29.00	30.00	230.00	
	0.34	1.00	29.00	30.00	220.00	
	0.33	1.00	28.00	29.00	220.00	
	0.33	1.00	28.00	29.00	220.00	
	0.33	0.98	28.00	29.00	210.00	
	0.33	0.94	28.00	29.00	210.00	
	0.33	0.94	27.19	28.00	210.00	
	0.33	0.92	27.00	28.00	210.00	
	0.32	0.90	27.00	28.00	210.00	
	0.32	0.90	27.00	27.00	210.00	
	0.32	0.86	26.00	27.00	210.00	

Source Data

- 6 -

November 10, 2010

Order No. R9-2010-0016

	0.32	0.80	26.00	26.31	205.00	
	0.32	0.80	26.00	26.00	202.79	
	0.31	0.71	25.00	26.00	202.00	
	0.31	0.70	25.00	25.00	200.00	
	0.30	0.70	25.00	25.00	200.00	
	0.30	0.60	24.00	25.00	200.00	
	0.30	0.60	24.00	24.60	200.00	
	0.30	0.59	23.00	24.00	200.00	
	0.30	0.59	23.00	24.00	200.00	
	0.30	0.52	23.00	24.00	200.00	
	0.30	0.50	23.00	24.00	194.49	
	0.29	0.50	23.00	23.00	190.00	
	0.29	0.50	22.00	23.00	190.00	
	0.29	0.50	22.00	23.00	190.00	
	0.29	0.50	21.00	23.00	190.00	
	0.29	0.50	21.00	23.00	184.13	
	0.29	0.50	21.00	23.00	180.00	
	0.28	0.50	21.00	22.20	180.00	
	0.28	0.50	20.36	22.00	180.00	
	0.28	0.50	20.00	22.00	180.00	
	0.27	0.50	20.00	22.00	180.00	
	0.27	0.50	20.00	22.00	180.00	
	0.27	0.50	20.00	21.20	180.00	
	0.26	0.50	20.00	21.10	170.00	
	0.26	0.40	19.00	21.00	170.00	
	0.26	0.40	19.00	20.00	170.00	
	0.26	0.40	18.00	19.10	170.00	
	0.25	0.30	18.00	19.00	160.00	
	0.25	0.30	18.00	19.00	160.00	
	0.25	0.30	18.00	19.00	160.00	
	0.25	0.30	18.00	19.00	160.00	
	0.25	0.30	17.00	18.50	160.00	
	0.25	0.30	17.00	18.00	160.00	
	0.24	0.20	17.00	18.00	160.00	
	0.24	0.20	17.00	18.00	160.00	
	0.24	0.20	17.00	18.00	160.00	
	0.23	0.04	17.00	17.00	160.00	
	0.23		17.00	17.00	150.00	
	0.23		17.00	17.00	150.00	
	0.23		17.00	17.00	150.00	
	0.22		16.00	17.00	150.00	
	0.22		16.00	17.00	150.00	
	0.22		16.00	17.00	146.00	
	0.22		16.00	17.00	145.00	
	0.22		16.00	17.00	140.00	
	0.22		15.00	16.90	140.00	
	0.22		15.00	16.00	140.00	
	0.21		15.00	15.00	140.00	

Source Data

- 7 -

November 10, 2010

Order No. R9-2010-0016

	0.21		15.00	15.00	140.00	
	0.21		15.00	15.00	140.00	
	0.21		14.50	15.00	140.00	
	0.21		14.00	15.00	140.00	
	0.21		14.00	14.00	140.00	
	0.20		14.00	14.00	140.00	
	0.20		14.00	14.00	136.55	
	0.20		14.00	13.00	135.60	
	0.20		14.00	13.00	130.00	
	0.20		13.00	13.00	130.00	
	0.20		13.00	13.00	130.00	
	0.20		13.00	13.00	130.00	
	0.20		13.00	12.00	130.00	
	0.20		13.00	12.00	130.00	
	0.19		13.00	12.00	130.00	
	0.19		12.00	12.00	127.00	
	0.19		12.00	12.00	124.00	
	0.19		12.00	12.00	122.05	
	0.19		12.00	11.00	120.00	
	0.19		11.00	11.00	120.00	
	0.19		11.00	11.00	120.00	
	0.18		10.00	10.00	120.00	
	0.18		10.00	10.00	112.11	
	0.18		10.00	10.00	110.00	
	0.18		10.00	10.00	110.00	
	0.18		9.60	10.00	110.00	
	0.18		9.60	10.00	110.00	
	0.17		9.10	10.00	110.00	
	0.17		9.10	10.00	110.00	
	0.17		9.00	10.00	110.00	
	0.17		8.30	9.60	110.00	
	0.17		8.20	9.40	110.00	
	0.16		8.00	9.10	108.00	
	0.15		8.00	9.00	100.00	
	0.15		7.70	9.00	100.00	
	0.15		7.70	9.00	100.00	
	0.15		7.00	9.00	100.00	
	0.15		7.00	8.00	100.00	
	0.15		6.80	8.00	100.00	
	0.14		6.80	8.00	99.00	
	0.14		6.80	8.00	98.00	
	0.14		6.50	8.00	97.00	
	0.14		6.50	8.00	93.40	
	0.14		6.30	8.00	92.00	
	0.14		6.30	7.60	92.00	
	0.14		6.10	7.50	90.00	
	0.13		5.60	7.00	90.00	
	0.13		5.40	7.00	90.00	

Source Data

- 8 -

November 10, 2010

Order No. R9-2010-0016

	0.13		5.20	6.00	86.00	
	0.13		5.00	6.00	83.00	
	0.13		4.90	6.00	81.00	
	0.12		4.50	5.90	81.00	
	0.12		4.10	5.80	80.00	
	0.12		4.10	5.40	80.00	
	0.11		3.90	5.00	80.00	
	0.11		3.40	5.00	80.00	
	0.11		2.60	5.00	80.00	
	0.11		2.60	5.00	79.00	
	0.10		2.60	5.00	73.00	
	0.10		2.30	5.00	72.00	
	0.10		2.00	4.80	70.00	
	0.10		2.00	4.80	70.00	
	0.09		1.70	4.70	70.00	
	0.08		1.50	4.60	70.00	
	0.06		1.50	4.00	64.00	
	0.03		1.50	4.00	63.00	
			1.40	3.80	61.00	
			1.40	3.00	60.00	
				3.00	56.00	
				2.30	44.00	
				2.00	40.00	
				1.60	37.00	
					35.00	
					30.00	
					26.00	
					24.00	
					20.00	
					10.00	
					5.00	

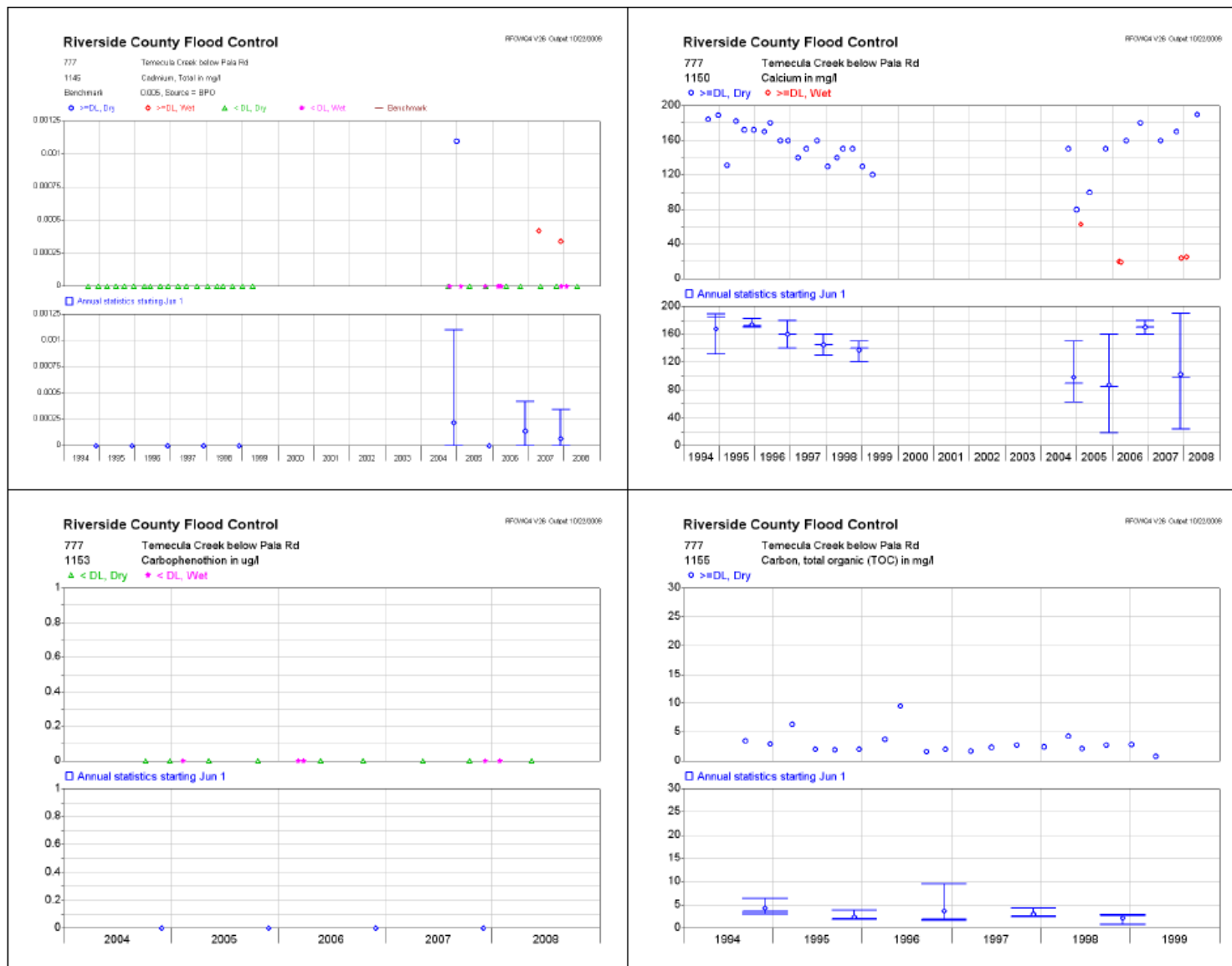
Source Data

- 9 -

November 10, 2010

Order No. R9-2010-0016

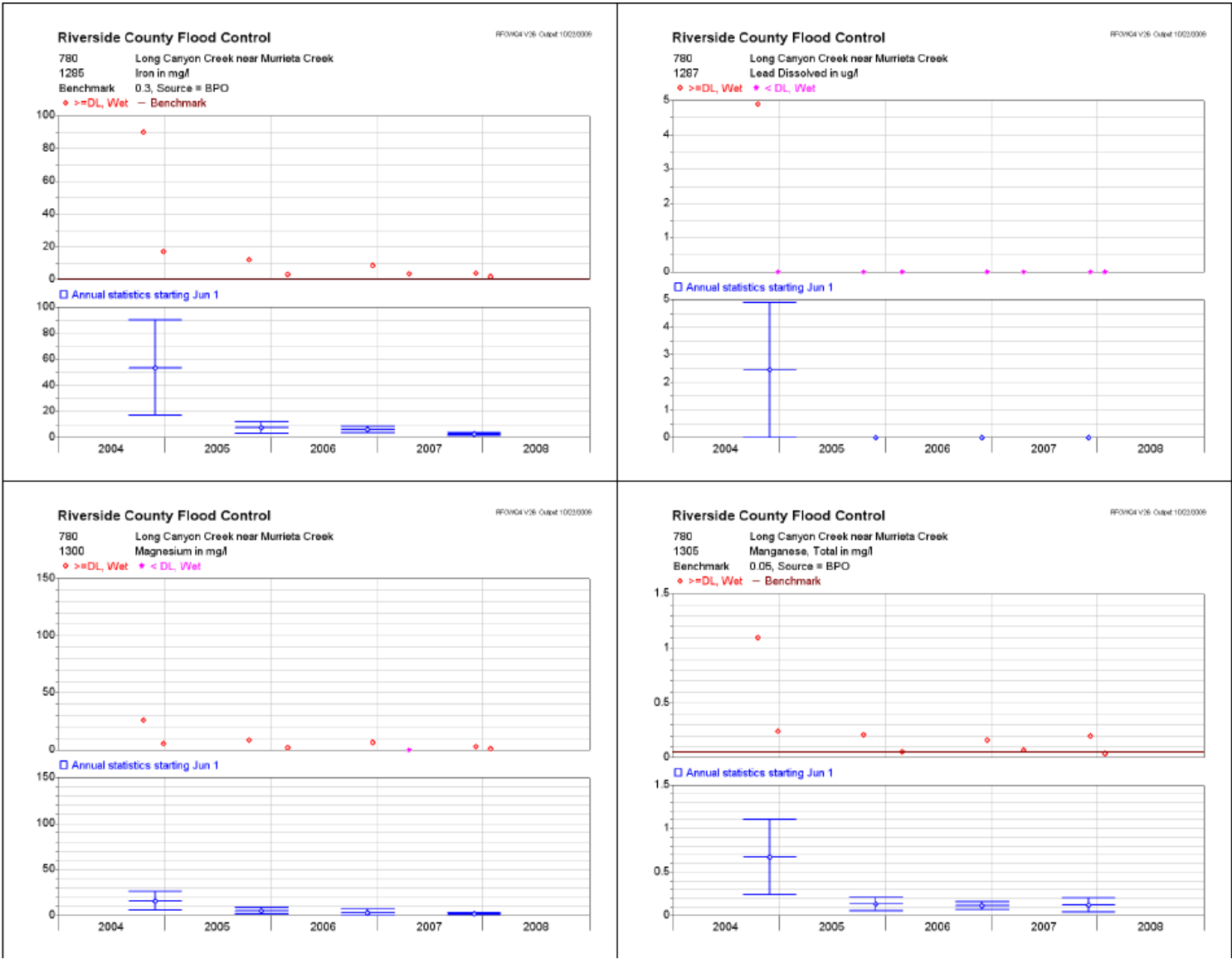
II. NUMERIC ACTION LEVELS EVALUATION DATA



Source Data

- 10 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 11 -
Order No. R9-2010-0016

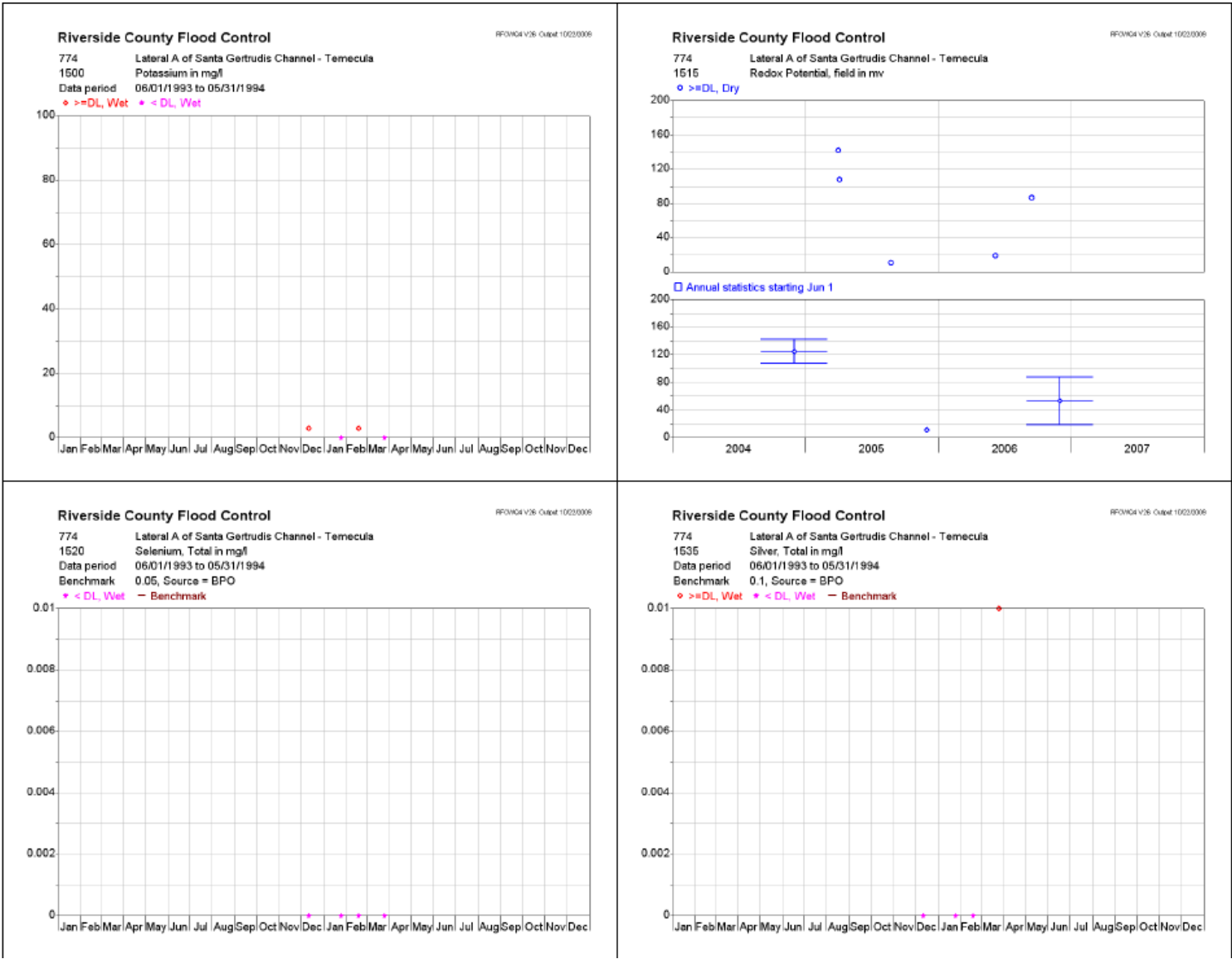
November 10, 2010



Source Data

- 12 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 13 -
Order No. R9-2010-0016

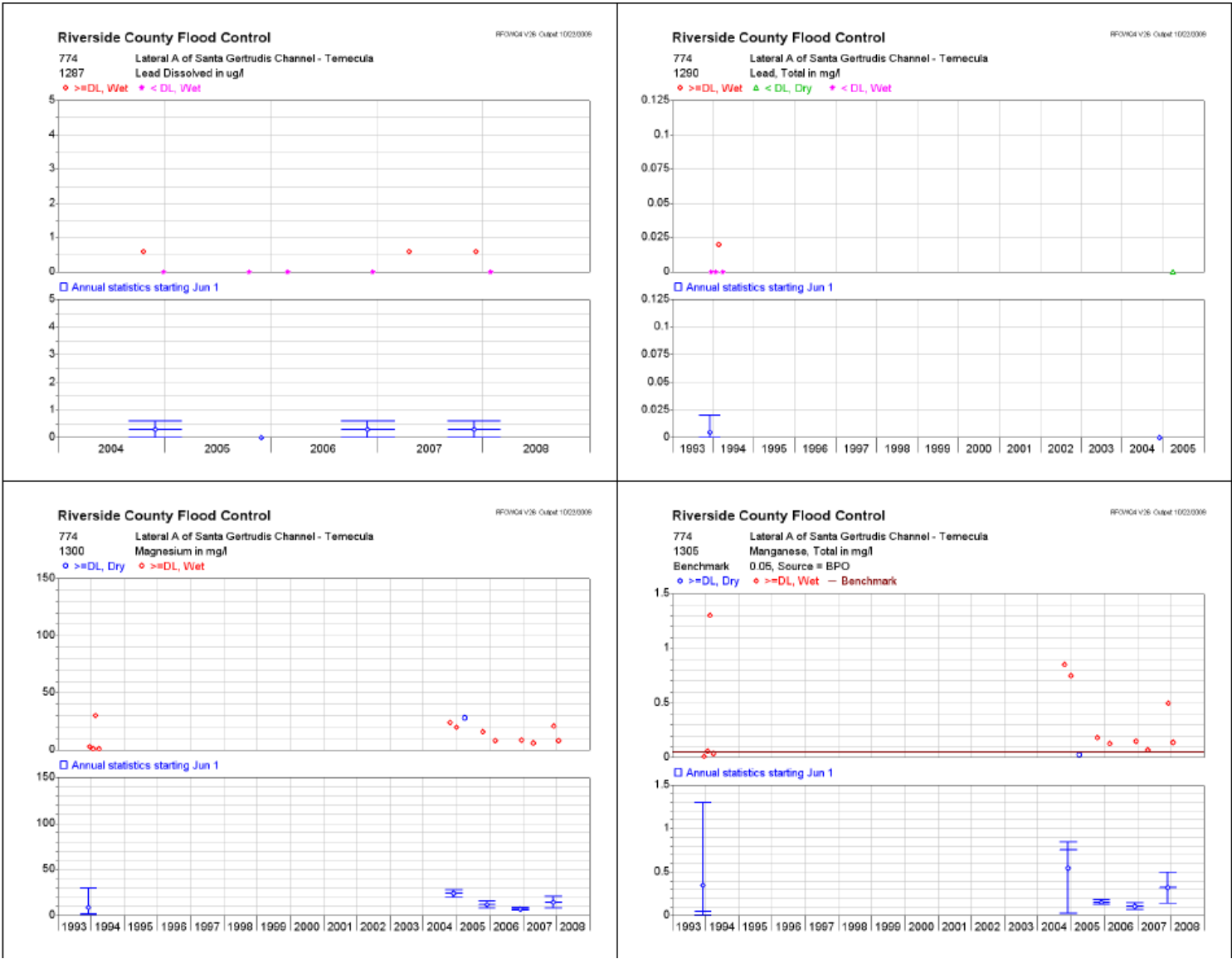
November 10, 2010

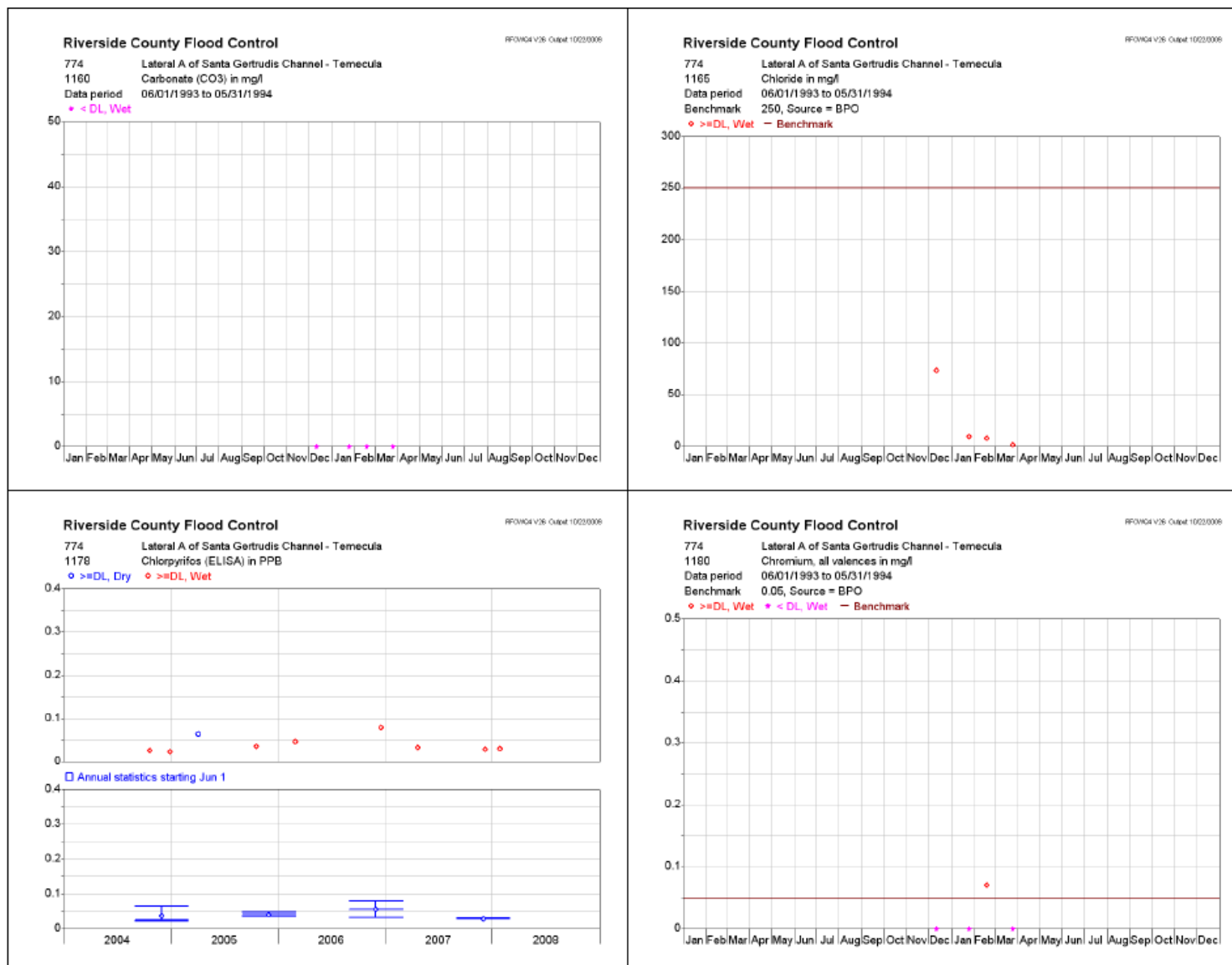


Source Data

- 14 -
Order No. R9-2010-0016

November 10, 2010





Source Data

- 17 -
Order No. R9-2010-0016

November 10, 2010

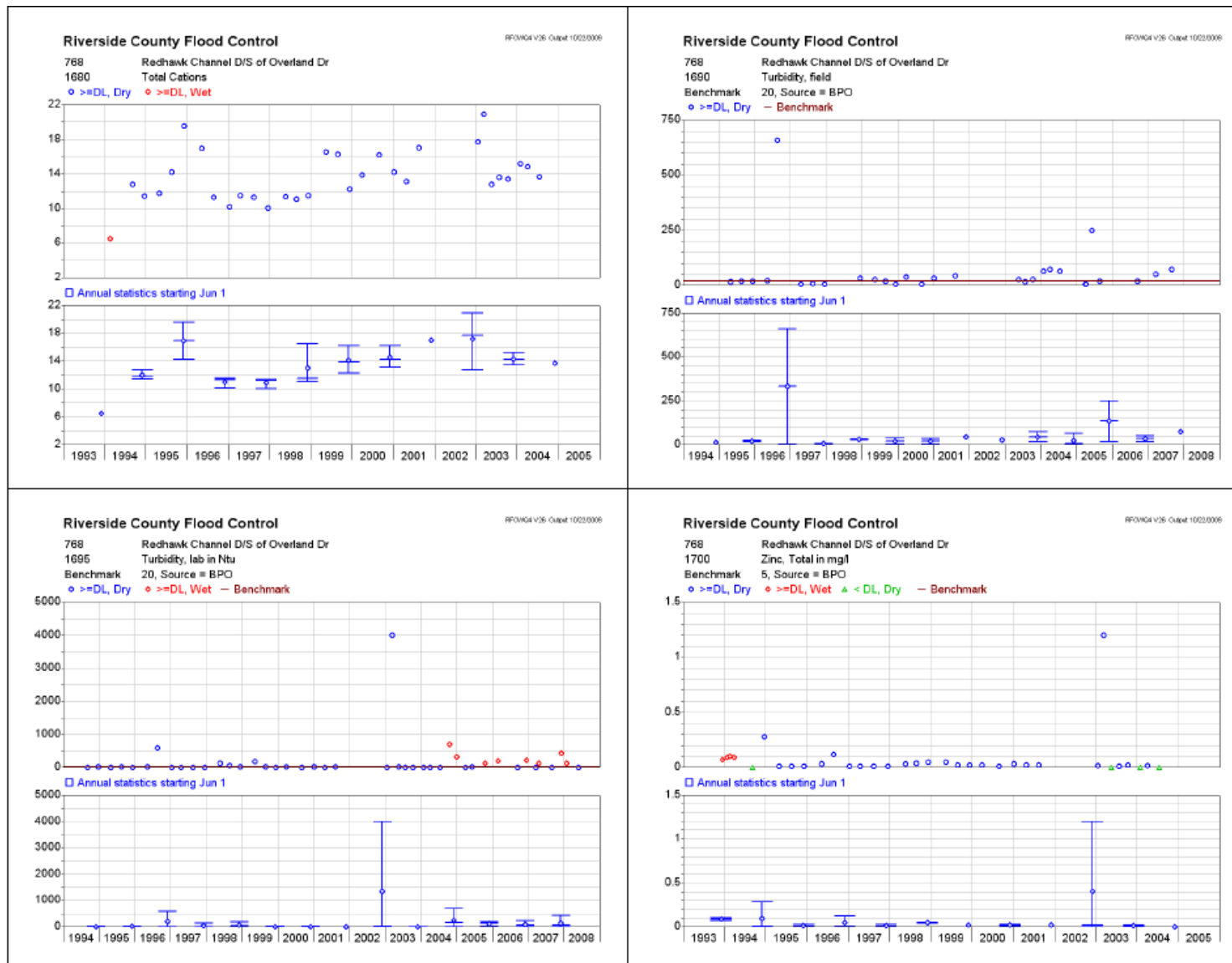


Source Data

- 18 -

November 10, 2010

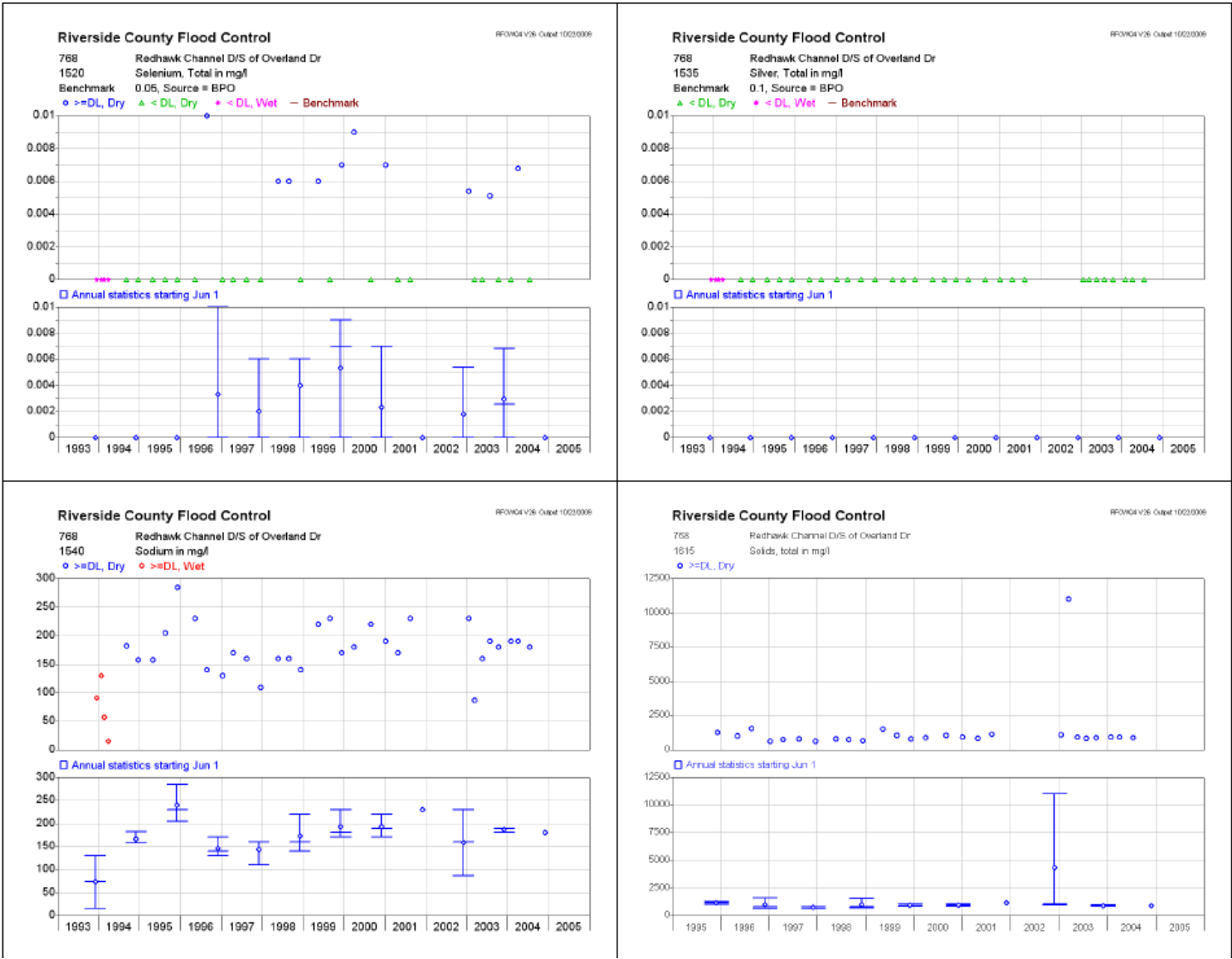
Order No. R9-2010-0016



Source Data

- 19 -
Order No. R9-2010-0016

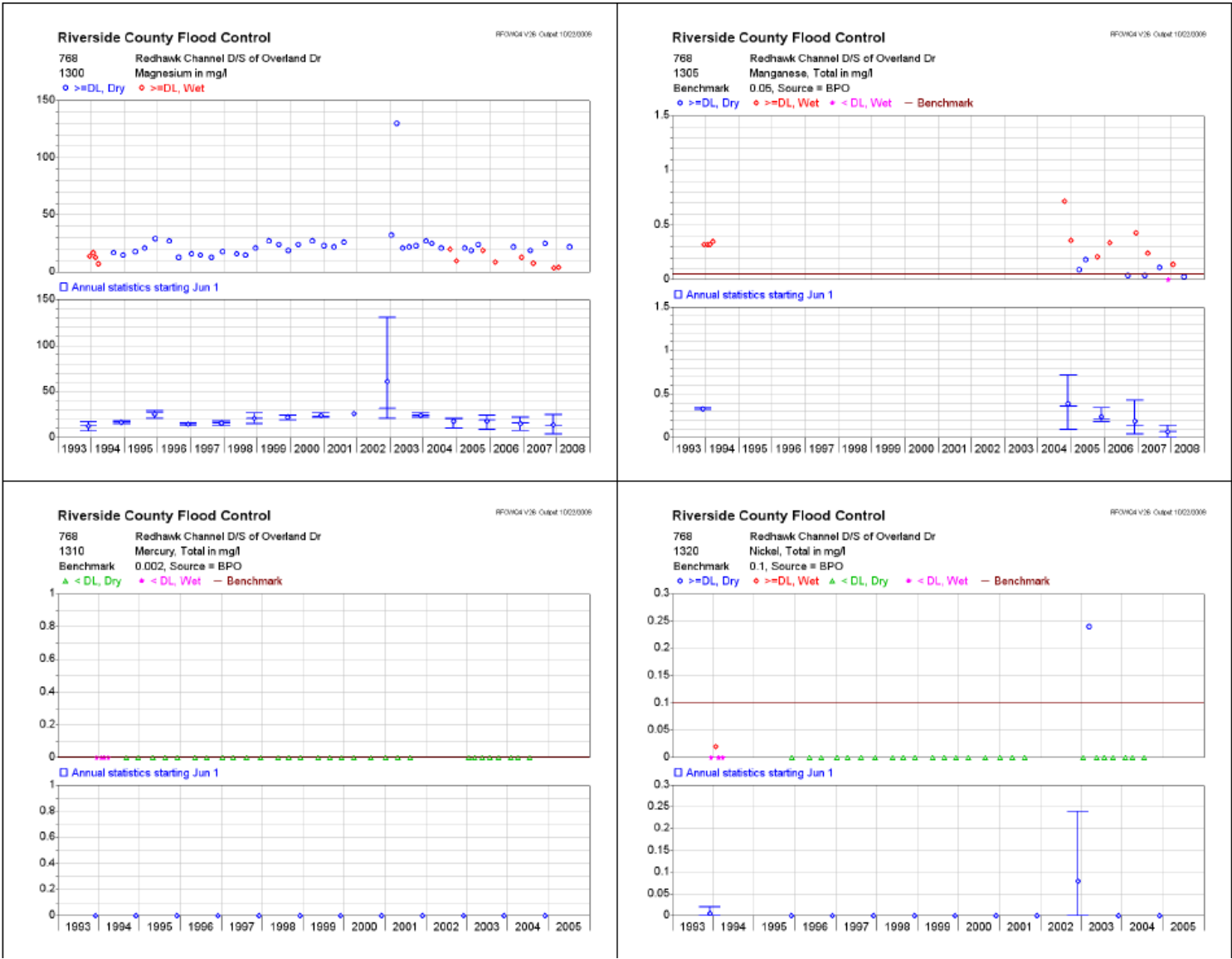
November 10, 2010



Source Data

- 20 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 21 -
Order No. R9-2010-0016

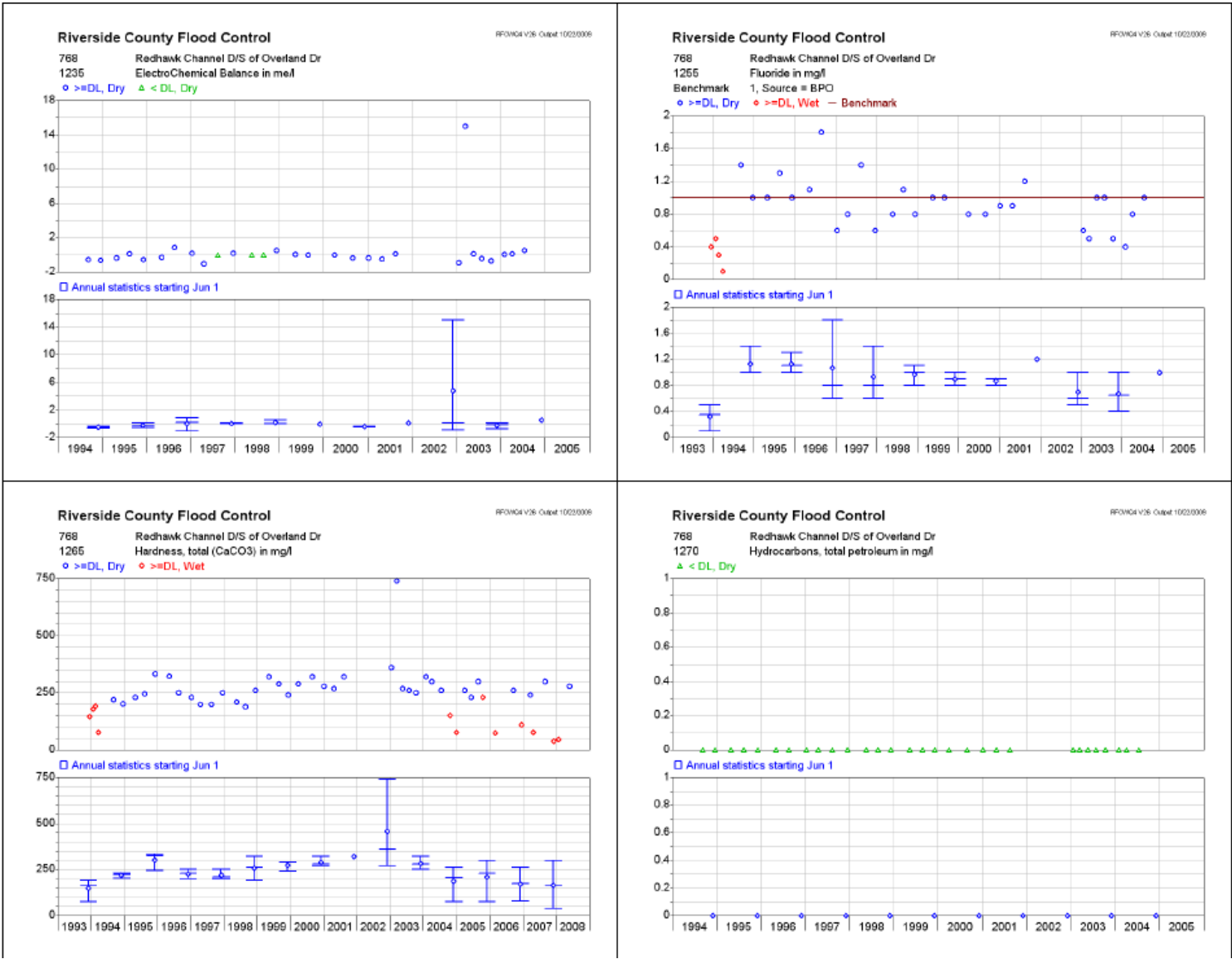
November 10, 2010



Source Data

- 22 -
Order No. R9-2010-0016

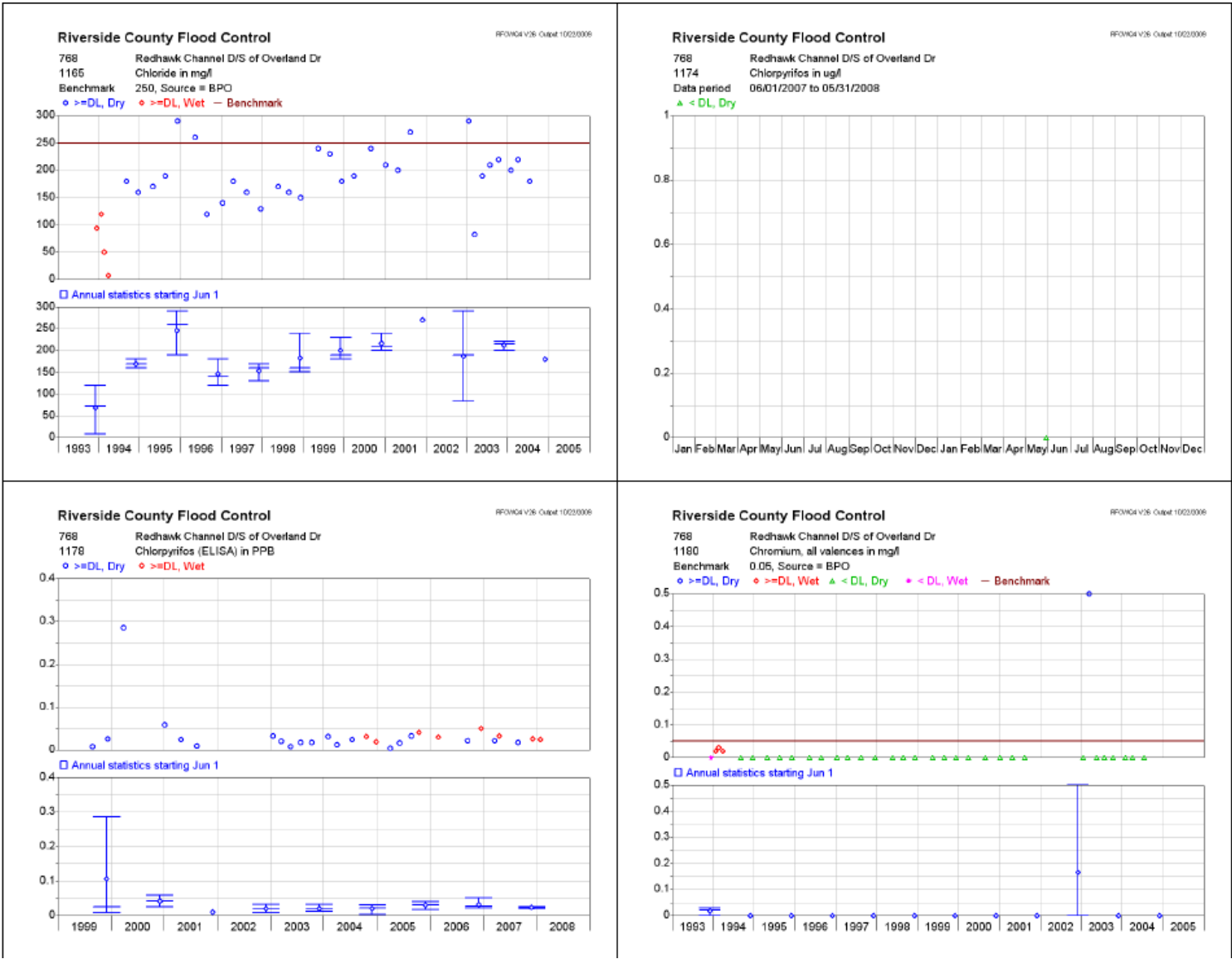
November 10, 2010



Source Data

- 23 -
Order No. R9-2010-0016

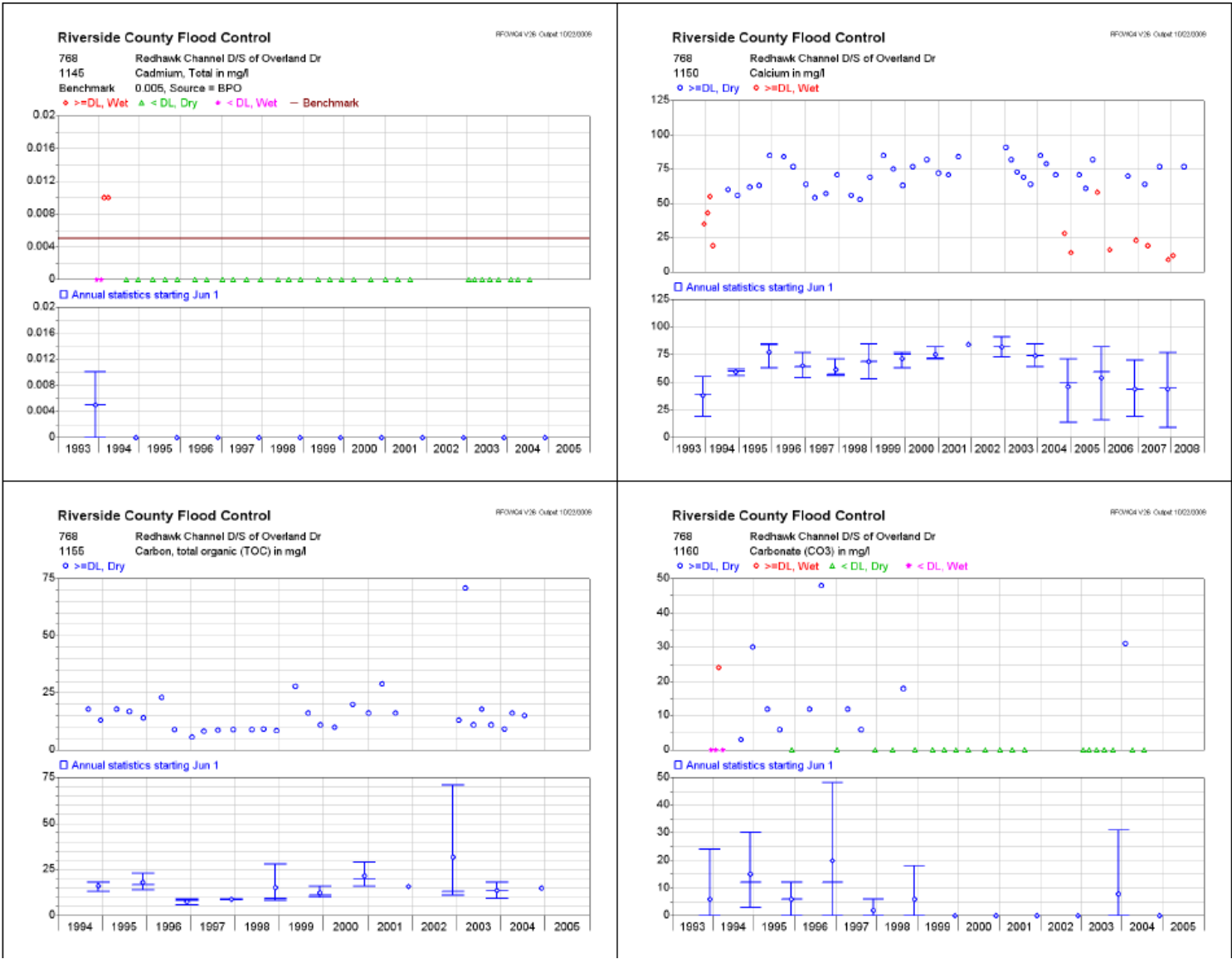
November 10, 2010



Source Data

- 24 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 25 -

November 10, 2010

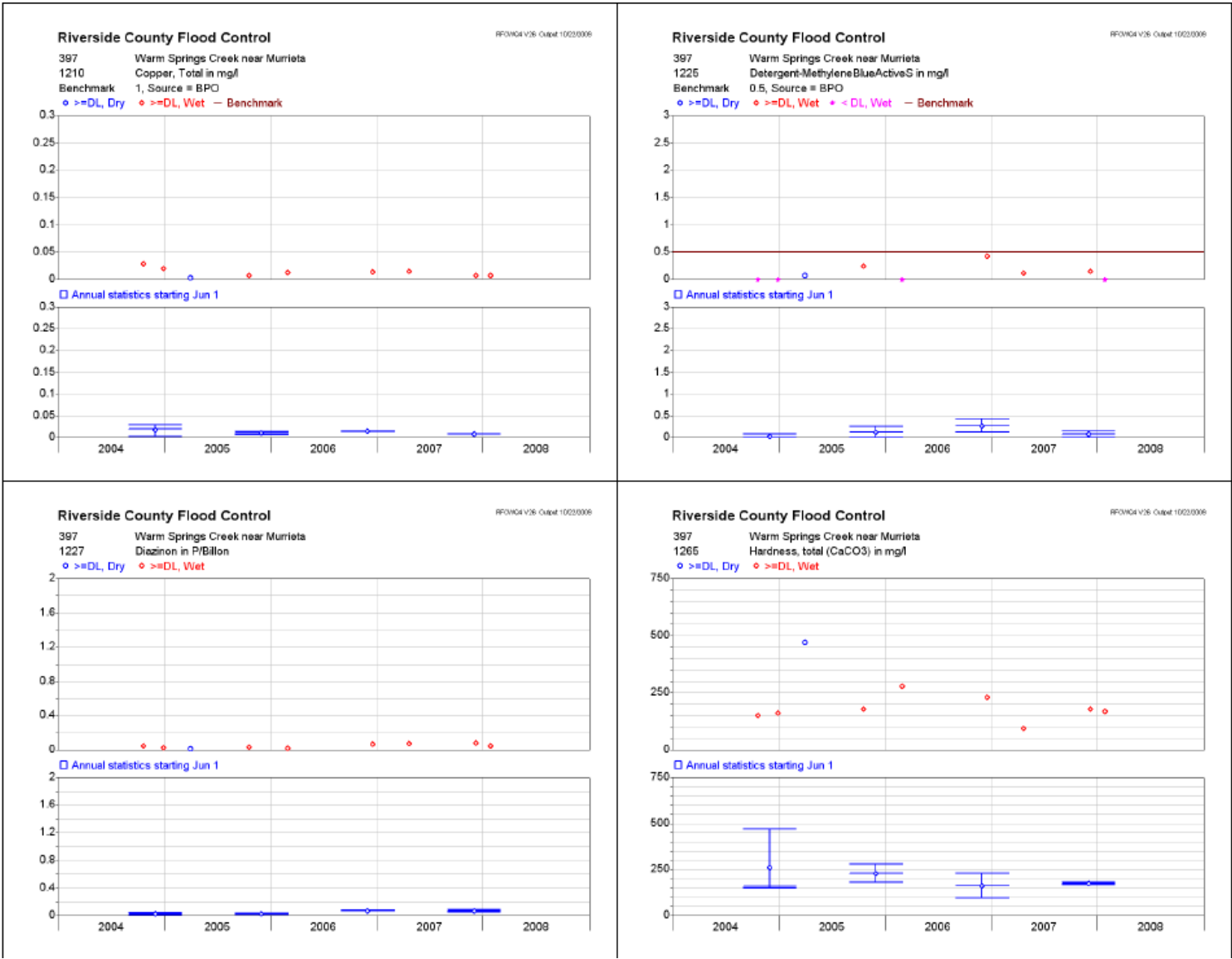
Order No. R9-2010-0016



Source Data

- 26 -
Order No. R9-2010-0016

November 10, 2010

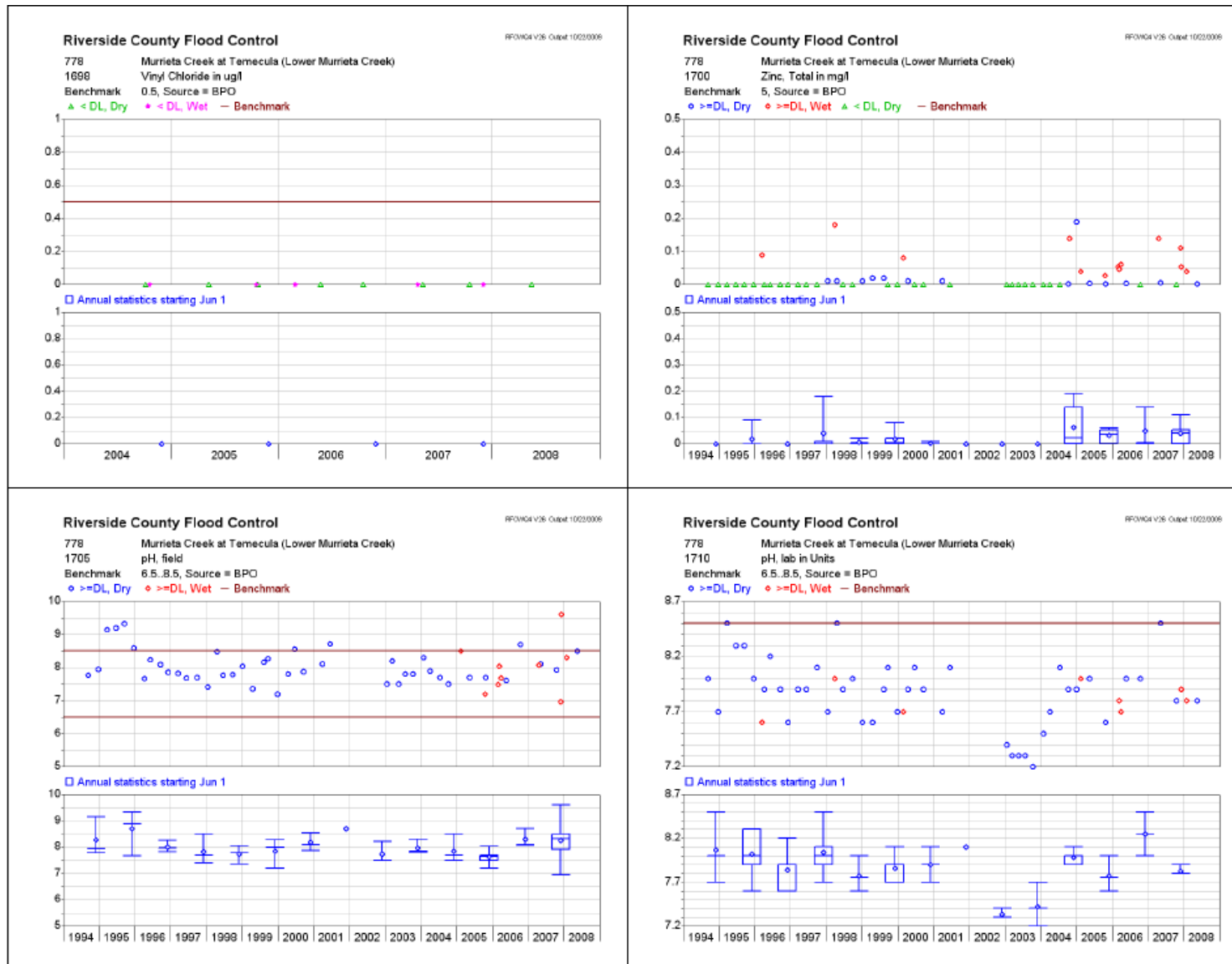


Source Data

- 27 -

November 10, 2010

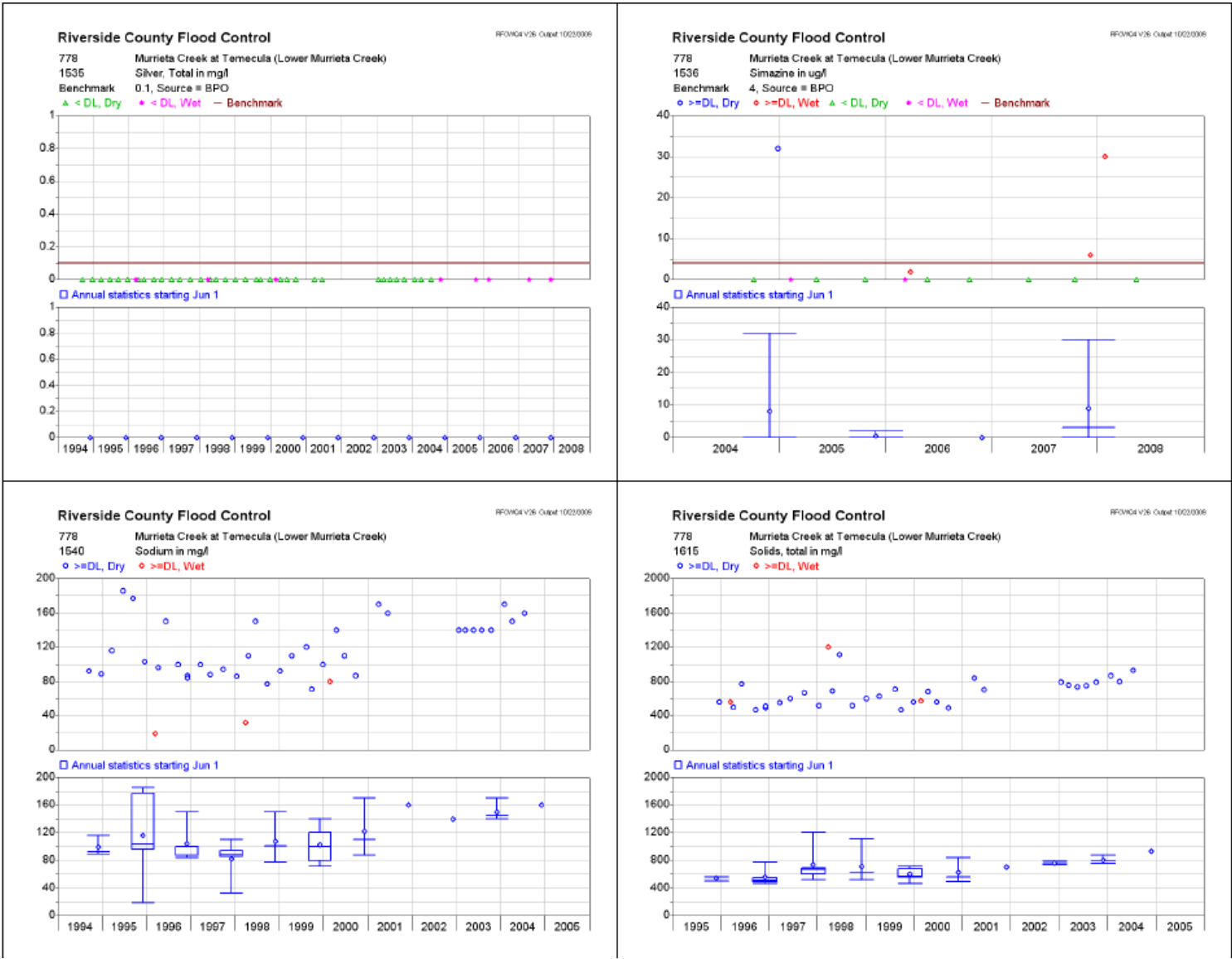
Order No. R9-2010-0016



Source Data

- 28 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 29 -
Order No. R9-2010-0016

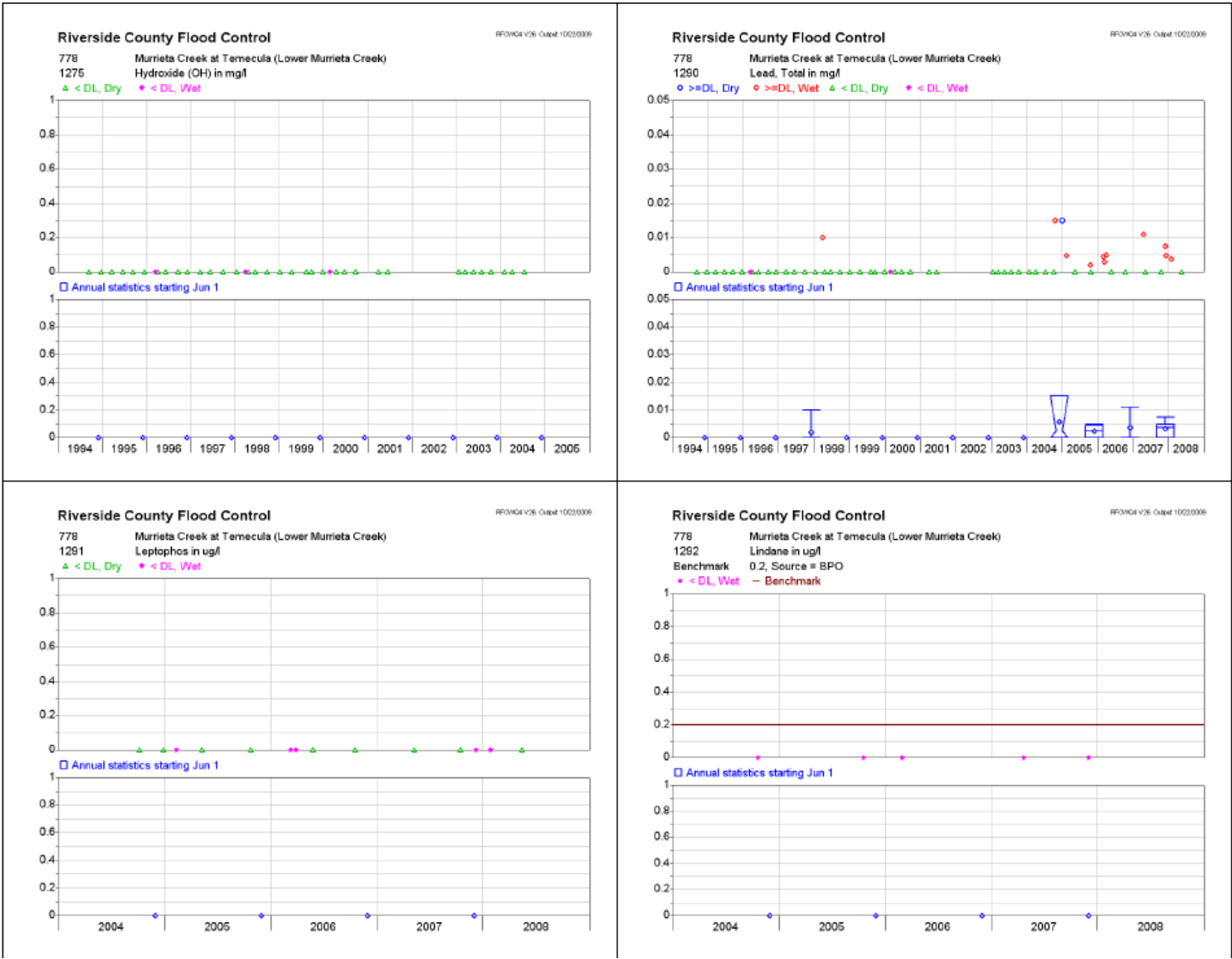
November 10, 2010



Source Data

- 30 -
Order No. R9-2010-0016

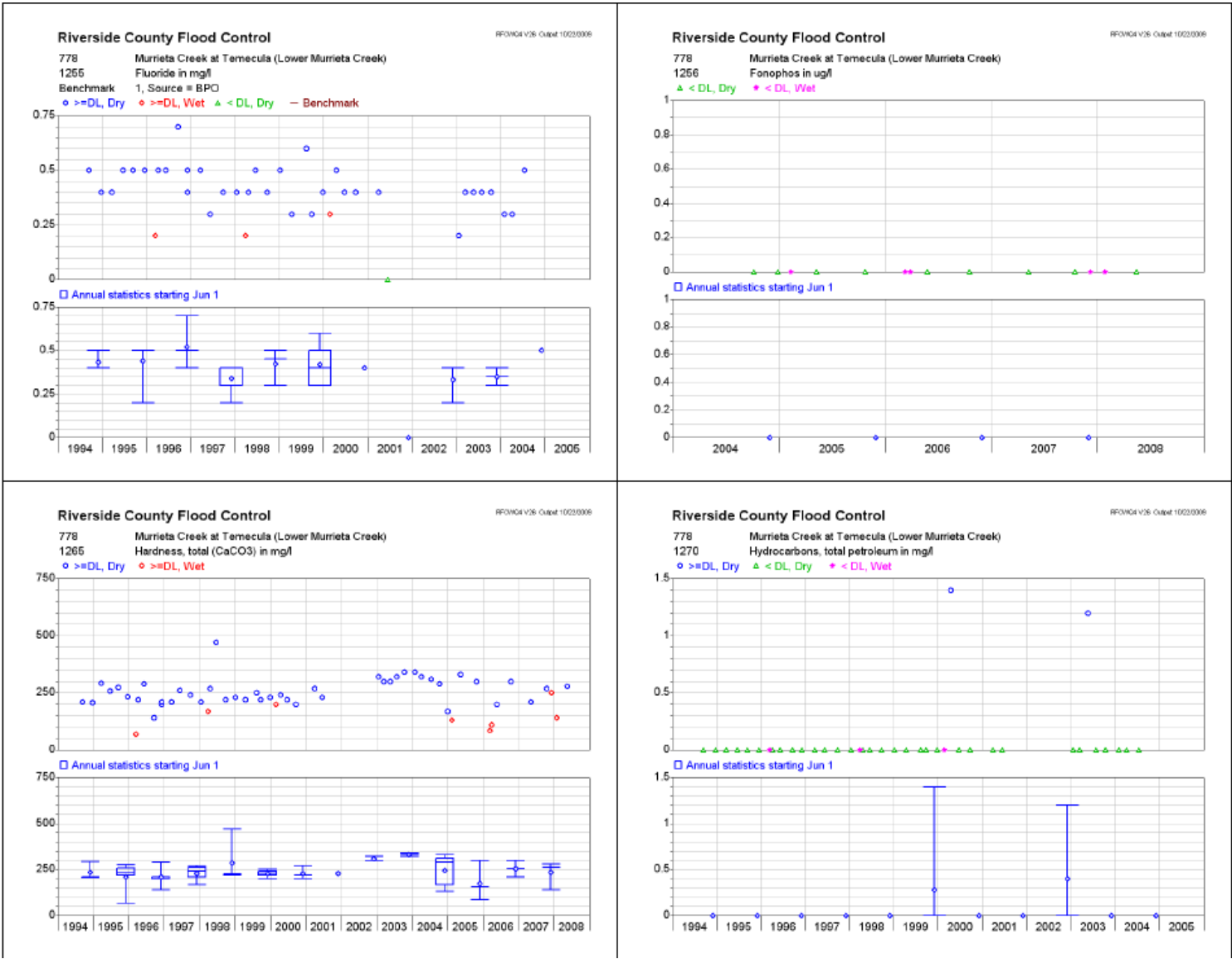
November 10, 2010



Source Data

- 31 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 32 -
Order No. R9-2010-0016

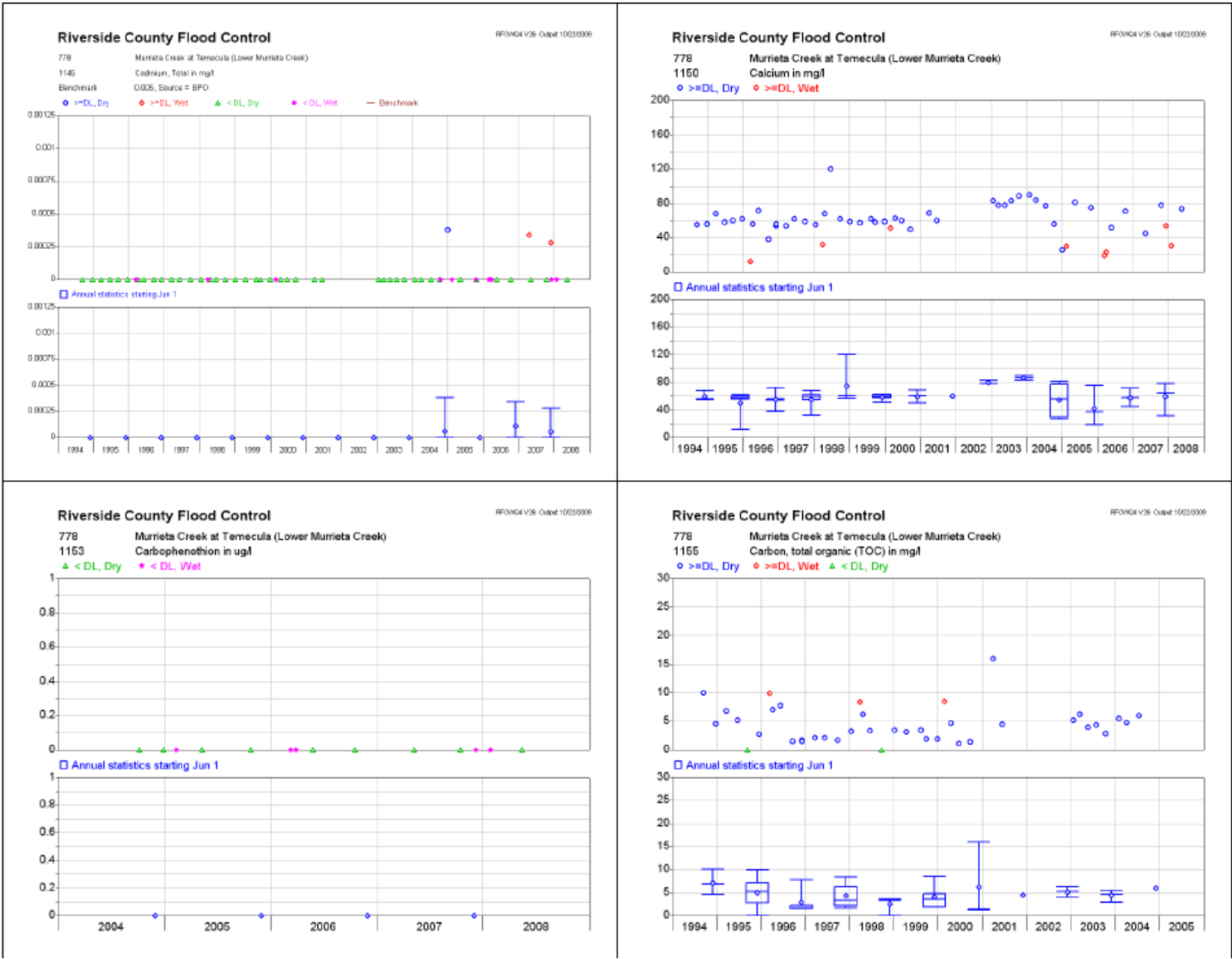
November 10, 2010



Source Data

- 33 -
Order No. R9-2010-0016

November 10, 2010

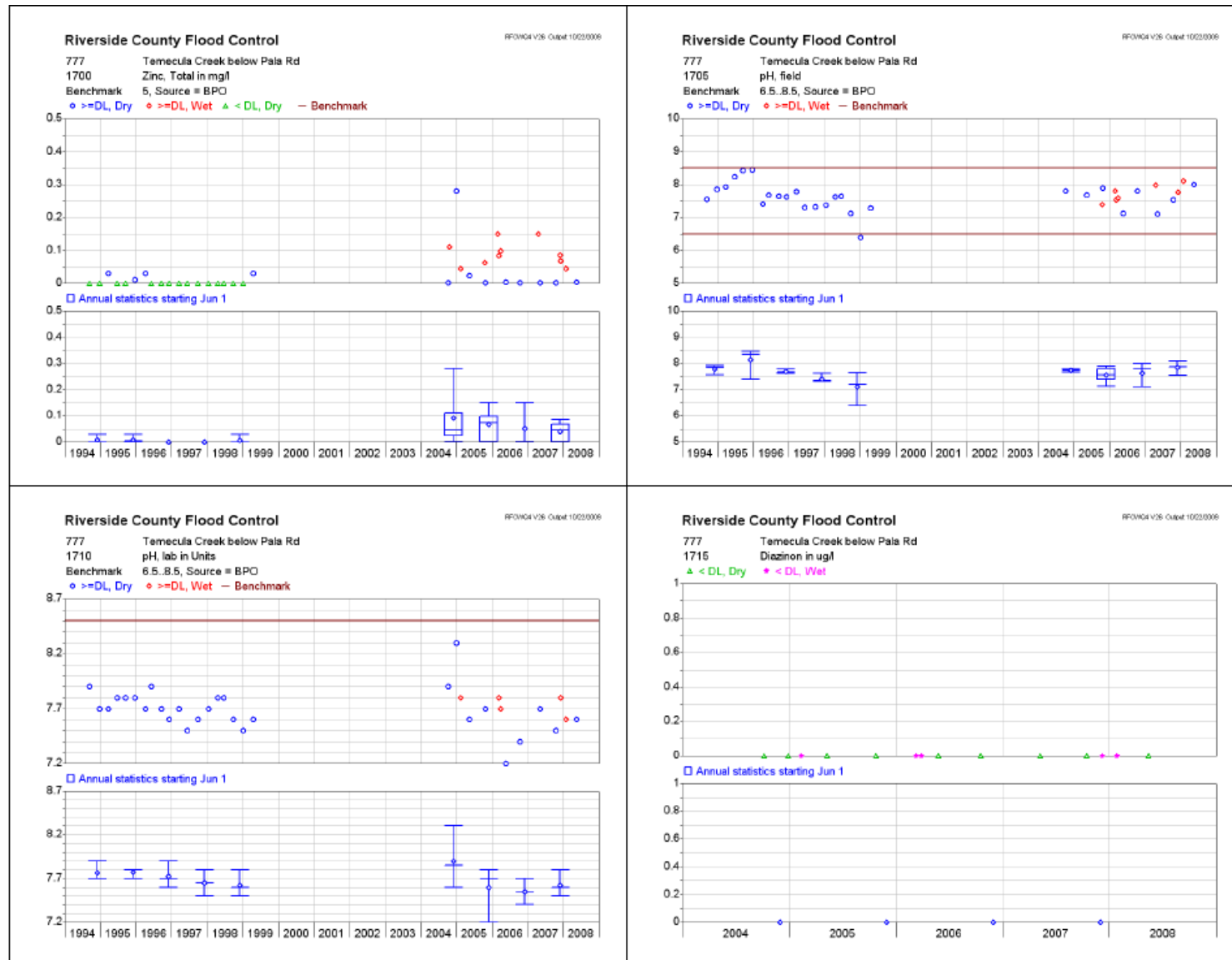


Source Data

- 34 -

November 10, 2010

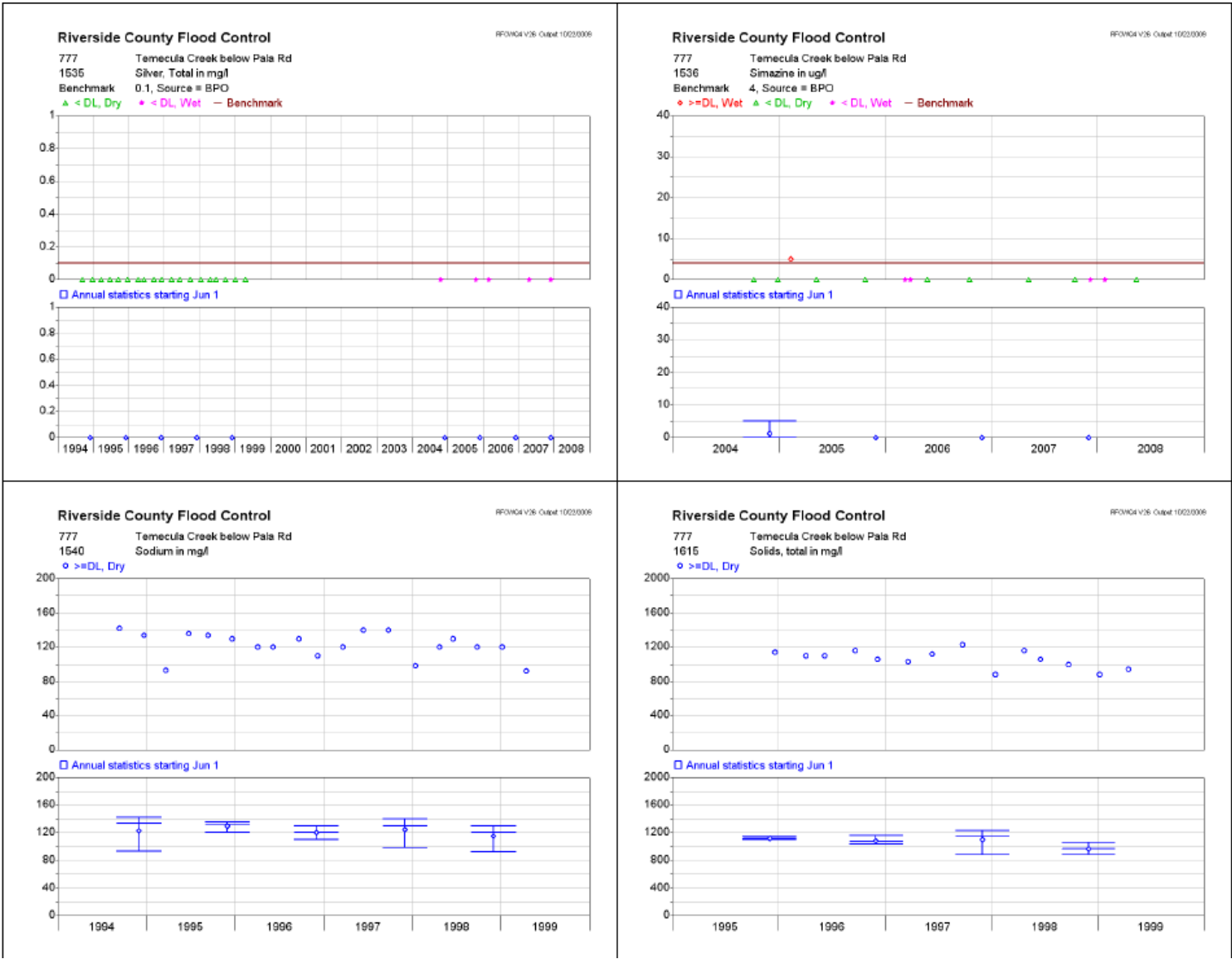
Order No. R9-2010-0016



Source Data

- 35 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 36 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 37 -
Order No. R9-2010-0016

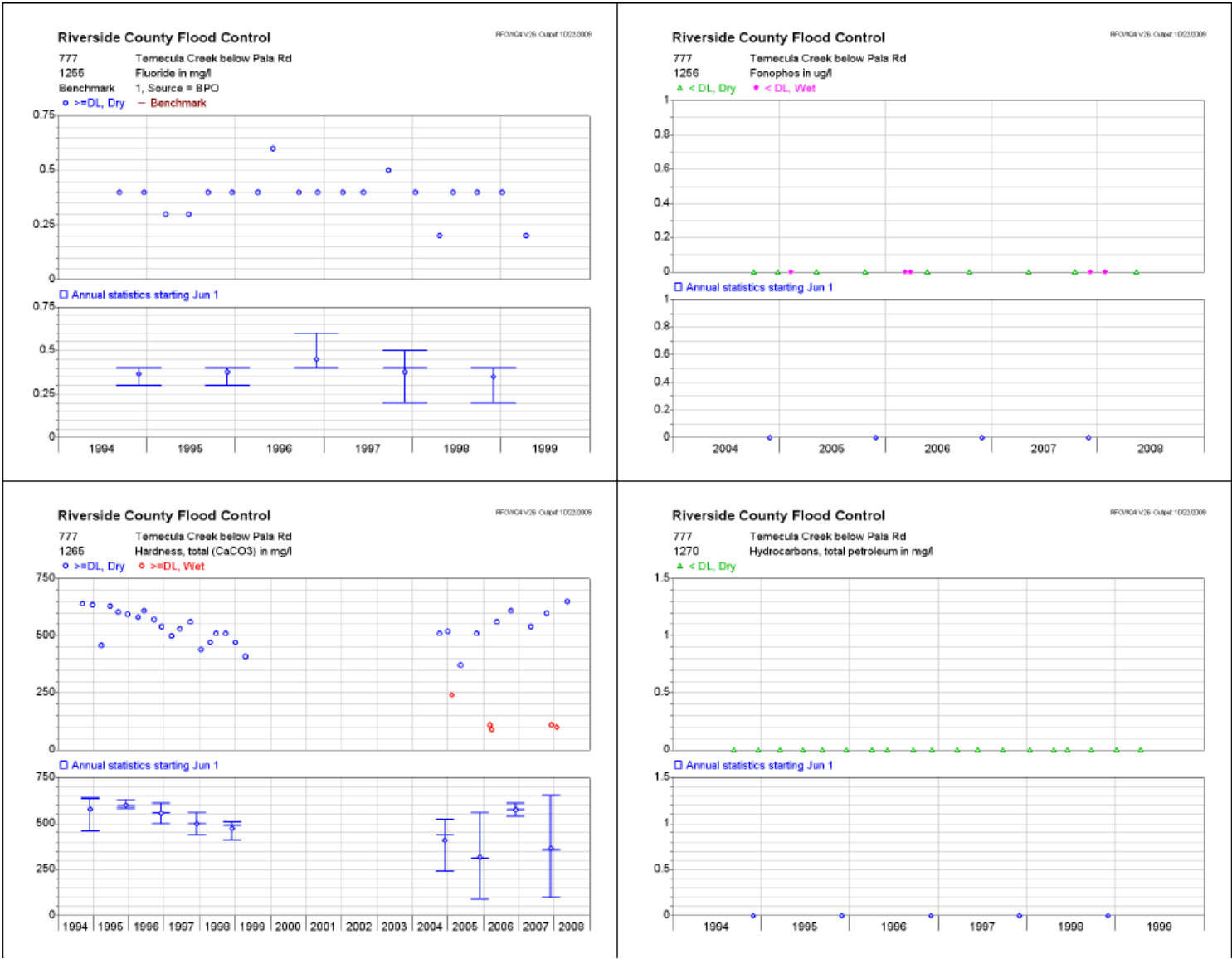
November 10, 2010



Source Data

- 38 -
Order No. R9-2010-0016

November 10, 2010



Source Data

- 39 -
Order No. R9-2010-0016

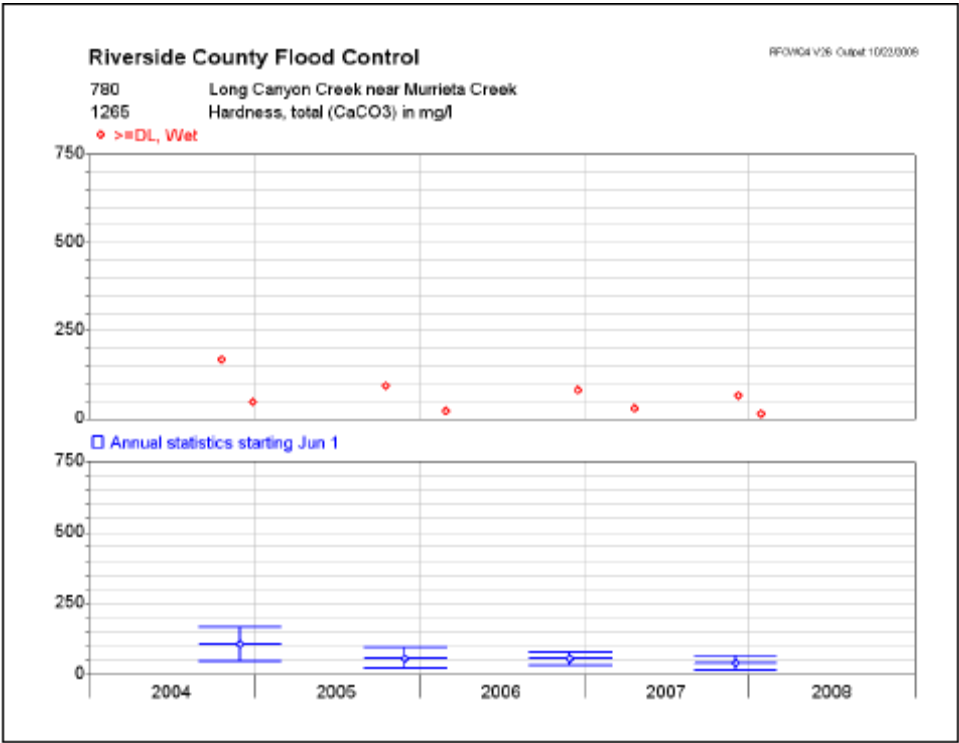
November 10, 2010



Source Data

- 40 -
Order No. R9-2010-0016

November 10, 2010



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

FACT SHEET / TECHNICAL REPORT

FOR

**ORDER NO. R9-2010-0016
NPDES NO. CAS0108766**

WASTE DISCHARGE REQUIREMENTS

FOR

**DISCHARGES FROM THE
MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)
DRAINING THE COUNTY OF RIVERSIDE,
THE INCORPORATED CITIES OF RIVERSIDE COUNTY,
AND THE RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
WITHIN THE SAN DIEGO REGION**

NOVEMBER 10, 2010

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS	2
I. FACT SHEET FORMAT	4
II. CONTACT INFORMATION	5
III. PUBLIC PROCESS AND NOTIFICATION PROCEDURES	6
IV. BACKGROUND	7
V. PERMITTING APPROACH	10
VI. ECONOMIC ISSUES	12
VII. LEGAL AUTHORITY	18
VIII. FINDINGS	20
A. Basis For the Order	20
B. Regulated Parties	23
C. Discharge Characteristics	25
D. Runoff Management Programs	55
E. Statute and Regulatory Considerations	87
F. Public Process	103
IX. DIRECTIVES	104
A. Prohibitions and Receiving Water Limitations	104
B. Non-Storm Water Discharges	107
C. Non Storm Water Dry Weather Action Levels	112
D. Storm Water Action Levels	123
E. Legal Authority	126
F. Jurisdictional Runoff Management Program	128
F.1. Development Planning Component	128
F.2. Construction Component	144
F.3 Existing Development Component	149
F.4. Illicit Discharge Detection and Elimination	160
F.5. Public Participation Component	163
F.6. Education Component	163
G. Watershed Water Quality Workplan	166
H. Fiscal Analysis	169
I. Total Maximum Daily Loads	171
J. Program Effectiveness Component	172
K. Reporting	174
L. Modification of Programs	177
M. Principal Permittee Responsibilities	178
N. Receiving Waters and MS4 Discharge Monitoring and Reporting Program	179
O. Standard Provisions, Reporting Requirements, And Notifications	180
P. Attachment A – Basin Plan Prohibitions	181
Q. Attachment B – Standard Provisions	182
R. Attachment C – Definitions	183
S. Attachment D – Summary of Submittals	184
T. Attachment E - Receiving Waters and MS4 Discharge Monitoring and Reporting Program	185
U. Attachment F - Source Data	199

LIST OF ACRONYMS AND ABBREVIATIONS

ADT	Average Daily Traffic
AMAL	Average Monthly Action Level
AST	Active/Passive Sediment Treatment
BAT	Best Available Technology
BIA	Building Industry Association
BMP	Best Management Practice
Basin Plan	Water Quality Control Plan for the San Diego Basin
CASQA	California Stormwater Quality Association
CCC	California Coastal Commission
CC&Rs	Covenants, Conditions and Restrictions
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
Colorado River Water Board	California Regional Water Quality Control Board, Colorado River Region
Copermittees	County of Riverside, the 4 incorporated cities within the County of Riverside in the San Diego Region, and the Riverside County Flood Control and Water Conservation District
CWA	Clean Water Act
CWC	California Water Code
CZARA	Coastal Zone Act Reauthorization Amendments of 1990
DAMP	Drainage Area Management Plan
DNQ	Did Not Quantify
ESAs	Environmentally Sensitive Areas
FR	Federal Register
GIS	Geographic Information System
HMP	Hydromodification Management Plan
HU	Hydrologic Unit
IBI	Index of Biotic Integrity
IC/ID	Illicit Connections and Illicit Discharges
JRMP	Jurisdictional Runoff Management Plan
Los Angeles Water Board	California Regional Water Quality Control Board, Los Angeles Region
LID	Low Impact Development
MDAL	Maximum Daily Action Level
MEP	Maximum Extent Practicable
MRP	Receiving Waters Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System

LIST OF ACRONYMS AND ABBREVIATIONS (CONT'D)

NAL	Non-storm Water Action Levels
ND	Not Detected
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resources Defense Council
NURP	Nationwide Urban Runoff Program
OAL	Office of Administrative Law
RCFCD	Riverside County Flood Control and Water Conservation District
Regional Water Board	California Regional Water Quality Control Board
RGOs	Retail Gasoline Outlets
ROWD	Riverside County Copermittees' Report of Waste Discharge (application for NPDES reissuance)
RWL	Receiving Water Limitations
SAL	Storm Water Action Level
Santa Ana Water Board	California Regional Water Quality Control Board, Santa Ana Region
San Diego Water Board	California Regional Water Quality Control Board, San Diego Region
San Francisco Bay Water Board	California Regional Water Quality Control Board, San Francisco Bay Region
SIC	Standard Industrial Classification Code
SIP	State Implementation Plan
SSMP	Standard Storm Water Mitigation Plan
State Water Board	State Water Resources Control Board
SWMP	Storm Water Management Plan
TAC	State Water Resources Control Board Urban Runoff Technical Advisory Committee
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
WDRs	Waste Discharge Requirements
WLA	Waste Load Allocation
WQO	Water Quality Objective
WQBEL	Water Quality Based Effluent Limitations
WQMP	Water Quality Management Plan
WQS	Water Quality Standard
WRMP	Watershed Runoff Management Plan

I. FACT SHEET FORMAT

This Fact Sheet briefly sets forth the principle facts and the significant factual, legal, methodological, and policy questions that the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) considered in preparing Order No. R9-2010-0016. In accordance with the Code of Federal Regulations (CFR) title 40 parts 124.8 and 124.56 (40 CFR 124.8 and 124.56), this Fact Sheet includes, but is not limited to, the following information:

- A. Contact information
- B. Public process and notification procedures
- C. Background information
- D. Permitting approach
- E. Economic issues
- F. Legal authority
- G. Findings
- H. Directives

Tentative Order No. R9-2010-0016 was distributed for public review on July 23, 2010. The San Diego Water Board accepted written comments on the Tentative Order until September 7, 2010. A public hearing was subsequently held on November 10, 2010 to receive oral comments from interested persons.

The San Diego Water Board's files applicable to the issuance of Order No. R9-2010-0016 are incorporated into the administrative record in support of the findings and requirements of Order No. R9-2010-0016.

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 5 of 199

II. CONTACT INFORMATION

San Diego Water Board

Benjamin Neill
Water Resource Control Engineer
9174 Sky Park Court, Suite 100
San Diego, CA 92123
858-467-2983
858-571-6972 (fax)
email: bneill@waterboards.ca.gov

Wayne Chiu, P.E.
Water Resource Control Engineer
9174 Sky Park Court, Suite 100
San Diego, CA 92123
858-637-5558
858-571-6972 (fax)
email: wchiu@waterboards.ca.gov

The Order and other related documents can be downloaded from the San Diego Water Board website at
http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/rsd_stormwater.shtml

All documents referenced in this Fact Sheet and in Order No. R9-2010-0016 are available for public review at the San Diego Water Board office, located at the address listed above. Public records are available for inspection during regular business hours, from 8:00 am to 5:00 pm Monday through Friday. To schedule an appointment to inspect public records, contact the San Diego Water Board Records Management Officer at 858-467-2952.

Copermittees

1. City of Murrieta	4. County of Riverside
2. City of Temecula	5. Riverside County Flood Control and Water Conservation District
3. City of Wildomar	

III. PUBLIC PROCESS AND NOTIFICATION PROCEDURES

The San Diego Water Board followed the schedule listed below for the preparation of Order No. R9-2010-0016:

- A. In December 2008, the San Diego Water Board met with the Copermittees to discuss the Report of Waste Discharge (ROWD) required by Order No. R9-2004-001.
- B. On January 15, 2009, the San Diego Water Board received the ROWD for the permit renewal.
- C. On October 29, 2009, the San Diego Water Board received the 2008-09 annual reports from the Copermittees for the existing permit.
- D. On February 8, 2010, the San Diego Water Board notified all known interested parties that an electronic email listserv had been established to provide information and notices on the reissuance of the municipal storm water NPDES permit for southern Riverside County.
- E. On February 18, 2010 the San Diego Water Board provided written comments on the ROWD to the Copermittees.
- F. On March 22, 2010, the San Diego Water Board met with the Copermittees to discuss the potential changes to the permit based on the ROWD and annual reports.
- G. Between April 22 and July 23, 2010, the San Diego Water Board met with the Copermittees on a weekly basis to discuss the Copermittees' concerns with the provisions of the Tentative Order.
- H. On July 23, 2010, the San Diego Water Board released the Tentative Order for public review and comment.
- I. Written comments were accepted until September 7, 2010.
- J. A public hearing of the Tentative Order was conducted on November 10, 2010.

IV. BACKGROUND

Order No. R9-R9-2010-0016 is the fourth iteration of the storm water permit for the municipal separate storm sewer systems (MS4s) in the Riverside County portion of the San Diego Region. The first permit was adopted in 1990. The San Diego Water Board adopted the second iteration of the permit in 1998. The U.S. Environmental Protection Agency (USEPA) objected to the 1998 permit and reissued the permit in 1999. In 2000, the San Diego Water Board issued an addendum to the 1998 permit and incorporated the USEPA's permit by reference. The San Diego Water Board reissued the third iteration of the permit in 2004.

Municipal Storm Water Permits are required by the Federal Clean Water Act 1987 Amendments. The federal Clean Water Act (CWA) was amended in 1987 to address storm water runoff from municipal and industrial dischargers. One requirement of the amendment was that many municipalities throughout the United States were obligated for the first time to obtain National Pollutant Discharge Elimination System (NPDES) permits for discharges of storm water runoff from their MS4s. In response to the CWA amendment (and the pending federal NPDES regulations which would implement the amendment), the San Diego Water Board issued a municipal storm water permit, Order No. 90-46, in July 1990 to the Copermittees for their municipal separate storm sewer system (MS4) discharges.¹

The First and Second Term Permits, Order Nos. 90-46 and 98-02, provided maximum flexibility. San Diego Water Board Order No. 90-46 contained the "essentials" of the 1990 regulations, but the requirements were written in very broad, generic terms. This was done in order to provide the maximum amount of flexibility to the Copermittees in implementing the new requirements (flexibility was, in fact, the stated reason for issuing the permit in advance of the final regulations). From staff's perspective however, "flexibility" in the form of lack of specificity, combined with the Copermittees' lack of funding and political will, also provided the Copermittees with ample reasons to take few substantive steps towards achieving water quality standards. The situation was exacerbated by the San Diego Water Board's own lack of storm water resources for oversight.

The Third-Term Permit introduced specific requirements. The regulatory approach incorporated into Order No. R9-2004-001 was a significant departure from the regulatory approach of the First and Second-Term Permits. Where San Diego Water Board Order Nos. 90-46 and 98-02 included broad, nonspecific requirements in order to provide the Copermittees with the maximum amount of flexibility in developing their programs, Order No. R9-2004-001 used detailed, specific requirements which outlined the minimum level of implementation required for the Copermittees' programs. In order to provide the Copermittees with the minimum requirements to meet the

¹ The 1990 permit was issued to the County of Riverside, the Orange County Flood Control and Water Conservation District, and the City of Temecula. Additional municipalities have been added to the MS4 NPDES permit as they have incorporated.

maximum extent practicable (MEP) standard for storm water of the San Diego Water Board, Order No. R9-2004-001 included more detail to emphasize the strong jurisdictional level programs developed by the Copermittees during the First and Second-Term Permits, as well as including the watershed-level program. The shift in permitting approaches resulted from the San Diego Water Board's conclusion that the lack of specificity in earlier Orders resulted in frequently unenforceable permit requirements, which in turn allowed some Copermittees to only make limited progress in implementing their programs.

The Third-Term Permit followed the San Diego County and Orange County permit templates. The shift in regulatory approaches for MS4 permits was first manifested in the 2001 MS4 permit to the owners and operators of San Diego County MS4s (Order No. 2001-01) and subsequently incorporated into the 2002 MS4 permit to the owners and operators of the Orange County MS4s (Order No. R9-2002-0001). The Third-Term Riverside County Permit included similar requirements as the 2001 San Diego County Permit and the 2002 Orange County Permit. Both the San Diego and Orange County Permits were appealed to the State Water Resources Control Board (State Water Board).² Minor modifications of each were made by the State Water Board, but the vast majority of the requirements were upheld. The San Diego County permit was also challenged in the Superior Court of the State of California and the Court of Appeal, Fourth Appellate District. Further litigation on the Orange County permit was held pending the precedential decisions on the San Diego Permit. The San Diego Permit was largely upheld in the Superior and Appellate Courts. The State of California Supreme Court declined to hear a final appeal from the Building Industry Association in March 2005. Thus, the Third-Term Riverside County permit requirements remained as slightly modified by the State Water Board.

The Third-Term Permit was adopted following substantial public participation. Public participation was extensive during the adoption process of the Third-Term Permit. The draft permit was released for public review and comment on December 15, 2003. Because the proposed requirements for Riverside County were similar to those that had recently been adopted and contested in San Diego County, much of the public participation dialogue echoed the discussions held during the San Diego renewal. A public workshop was held at the Temecula City Hall on January 23, 2004 to answer questions about the Tentative Order for the Third-Term Riverside County permit. A public hearing was held on February 11, 2004 to receive testimony. The public comment period was closed on March 10, 2004. Approximately 165 written and verbal comments were received and responded to during the public workshop, the public hearing, and the written comment period on the Tentative Order for the Third-Term Riverside County permit. Following the extensive public participation process, the San Diego Water Board adopted Order No. R9-2004-001 on July 14, 2004.

² Seven petitions were filed with the State Water Board over the Third-Term Orange County Permit. Six were placed in abeyance. Three of the petitioners sought stays. One stay request was dismissed and one was withdrawn. The active petition and stays were addressed by the State Water Board in Order WQO 2002-0014. That Order stayed provision F.5.f regarding sewage spills and modified Finding No. 26 regarding chronic toxicity.

Storm water programs have improved under the Third-Term Permit. Since adoption of Order No. R9-2004-001, the Copermittees' storm water programs have expanded. Audits of the Copermittees' programs and reviews of annual reports exhibit that the Copermittees' jurisdictional programs are largely in compliance with the Order. Some of the efforts currently being conducted on a regular basis by the Copermittees that were not conducted on a widespread basis prior to adoption of Order No. R9-2004-001, include: construction site storm water inspections, industrial and commercial facility storm water inspections, municipal facility storm water inspections, management of storm water quality from new development, development of best management practice (BMP) requirements for existing development, interdepartmental coordination, comprehensive water quality monitoring, and assessment of storm water program effectiveness.

Significant challenges remain. When viewed relative to the magnitude of the storm water runoff problem, enormous challenges remain, particularly regarding the management of storm water runoff on a watershed scale. Today, storm and non-storm water discharges from the MS4 continue to be the leading cause of water quality impairment in the San Diego Region.³ Since 1998, the number of impaired water bodies in the Riverside County portion of the San Diego Region on the CWA section 303(d) List of Water Quality Impaired Segments (303(d) List) has increased with each new list (i.e. new impaired water bodies listed on the 2002, 2006, and 2008 303(d) Lists). The Copermittees' monitoring data exhibits persistent exceedances of water quality objectives in the Santa Margarita watershed.⁴ The Santa Margarita watershed also has conditions that are frequently toxic to aquatic life. Bioassessment data from the watersheds further reflects these conditions, finding that macroinvertebrate communities in creeks have widespread Poor to Very Poor Index of Biotic Integrity (IBI) ratings.

³ The potential sources of impairments are identified on the CWA section 303(d) list of impaired water bodies for the San Diego Region.

⁴ Data is provided in annual reports to the San Diego Water Board. A summary of data collected during the Third-Term Permit is provided in the Riverside County Copermittees' application for permit reissuance. That summary is available on-line at:

http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/rsd_stormwater.shtml

V. PERMITTING APPROACH (PROGRAM INTEGRATION, FLEXIBILITY, AND DETAIL)

The Order contains an increased emphasis on storm water discharge management on a watershed basis. This shift towards increased watershed management is consistent with planning efforts conducted by the San Diego Water Board regarding reissuance of the San Diego Permit (Order No. R9-2007-0001) and Orange County Permit (Order No. R9-2009-0002). This shift reflects recognition of the maturity of the storm water programs since they began implementing the Third-Term Permit. Addressing storm water discharge management on a watershed basis is only possible if effective jurisdictional programs have been established, and maintaining effective jurisdictional programs is crucial to the success of watershed-focused management.

There are several reasons for this shift in emphasis. An emphasis on watersheds is necessary to shift the focus of the Copermittees from program development and implementation to water quality results. After over 20 years of Copermittee program implementation, it is critical that the Copermittees link their efforts with positive impacts on water quality. Addressing storm water on a watershed scale focuses on water quality results by emphasizing the receiving waters within the watershed. The conditions of the receiving waters drive management actions, which in turn focus on the water quality problems in each watershed.

Focusing on watershed implementation does not mean that the Copermittees must expend funds outside of their jurisdictions. Rather, the Copermittees within each watershed are expected to collaborate to develop a watershed strategy to address the high priority water quality problems within each watershed. They have the option of implementing the strategy in the manner they find to be most effective. Each Copermittee can implement the strategy individually within its jurisdiction, or the Copermittees can group together to implement the strategy throughout the watershed.

While the Order includes a new emphasis on addressing storm water discharges on a watershed basis, the Order includes recognition of the importance of continued program implementation on jurisdictional and countywide levels. The Order also acknowledges that jurisdictional, watershed, and countywide efforts are not always mutually exclusive. For this reason, an attempt has been made to allow for the Copermittees' jurisdictional, watershed, and countywide programs to integrate.

In the Order, the watershed requirements serve as the mechanism for this program integration. Since jurisdictional and countywide activities can also serve watershed purposes, such activities can be integrated into the Copermittees' watershed programs, provided the activities meet certain criteria. In this manner, the Copermittees' activities do not always need to distinguish between jurisdictional, watershed, and countywide levels of implementation. Instead, they can be integrated on multiple levels.

Such opportunities for program integration inherently provide flexibility to the Copermittees in implementing their programs. Program integration can be expanded or minimized as the Copermittees see fit. For example, there is flexibility provided in determining the activities to be integrated and implemented in the watershed programs – watershed-based efforts, countywide efforts, enhanced jurisdictional efforts, or a mixture of the three. Significant flexibility is also provided throughout other portions of the Order.

Copermittees can choose the best management practices (BMPs) to be implemented, or required to be implemented, for development, construction, and existing development areas. Flexibility to determine which industrial or commercial sites are to be inspected is also provided to the Copermittees. Educational approaches are also to be determined by the Copermittees under the Order. Implementation of certain efforts on a countywide basis is largely optional for the Copermittees as well. Significant leeway is also provided to the Copermittees in using methods to assess the effectiveness of their various runoff management programs. This flexibility is further extended to the monitoring program requirements, which allow the Copermittees to develop monitoring approaches to several aspects of the monitoring program.

The challenge in drafting the Order is to provide the flexibility described above while ensuring that the Order is still enforceable. To achieve this, the Order frequently prescribes minimum measurable outcomes, while providing the Copermittees with flexibility in the approaches they use to meet those outcomes. Enforceability has been found to be a critical aspect of the Order. For example, the watershed requirements of Order No. R9-2004-001 were some of the Order's most flexible requirements. This lack of specificity in the watershed requirements resulted in inefficient watershed compliance efforts. This situation reflects a common outcome of flexible permit language. Such language can be unclear and unenforceable, and it can lead to implementation of inadequate programs.

To avoid these types of situations, a balance between flexibility and enforceability has been crafted into the Order. Minimum measurable outcomes are utilized to ensure the Order is enforceable, while the Copermittees are provided flexibility in deciding how they will implement their programs to meet the minimum measurable outcomes.

VI. ECONOMIC ISSUES

Economic discussions of storm and non-storm water management programs tend to focus on the significant costs incurred by municipalities in developing and implementing the programs. However, when considering the cost of implementing the programs, it is also important to consider the alternative costs incurred by not fully implementing the programs, as well as the benefits which result from program implementation.

The financial crisis and current economic environment has amplified the concerns about the costs incurred by the municipalities in implementing their programs. It is frequently cited by many of the Copermittees as a justification for reducing or modifying the requirements that must be met by their programs. While the current economic environment is a cause for concern in the short term, it also provides an opportunity for these programs to find and implement improvements and efficiencies before the next period of growth and development.

It is very difficult to ascertain the true cost of implementation of the Copermittees' management programs because of inconsistencies in reporting by the Copermittees. Reported costs of compliance for the same program element can vary widely from city to city, often by a very wide margin that is not easily explained.⁵ Despite these problems, efforts have been made to identify management program costs, which can be helpful in understanding the costs of program implementation.

Estimates of Phase I Storm Water Program Costs

The USEPA, the California Regional Water Quality Control Boards (Regional Water Boards), and the State Water Board have attempted to evaluate the costs of implementing municipal storm water programs. The assessments demonstrate that true costs are difficult to ascertain and reported costs vary widely. Nonetheless, they provide a useful context for considering the costs of requirements within Order No. R9-2010-0016. In addition, reported fiscal analyses tend to neglect the costs incurred to municipalities when storm water runoff is not effectively managed. Such costs result from pollution, contamination, nuisance, and damage to ecosystems, property, and human health.

In 1999 USEPA reported on multiple studies it conducted to determine the cost of management programs. A study of Phase II municipalities determined that the annual cost of the Phase II program was expected to be \$9.16 per household. USEPA also studied 35 Phase I municipalities, finding costs to be \$9.08 per household annually, similar to those anticipated for Phase II municipalities.⁶

⁵ LARWQCB, 2003. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003. P. 2.

⁶ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791-68792.

A study on Phase I MS4 program cost was also conducted by the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board), where program costs reported in the municipalities' annual reports were assessed. The Los Angeles Water Board estimated that average per household cost to implement the MS4 program in Los Angeles County was \$12.50.⁷ Since the Los Angeles County permit is very similar to Order No. R9-2004-001, this estimate is also useful in assessing general program costs in Riverside County.

The State Water Board also commissioned a study by the California State University, Sacramento to assess costs of the Phase I MS4 program. This study includes an assessment of costs incurred by Phase I MS4s throughout the State to implement their programs. Annual cost per household in the study ranged from \$18-46, with the Fresno-Clovis Metropolitan Area (FCMA) representing the lower end of the range, and the City of Encinitas (in San Diego County) representing the upper end of the range.⁸ Included in the study is the City of Corona, which is in Riverside County under the jurisdiction of the California Regional Water Quality Control Board, Santa Ana Region (Santa Ana Water Board).

The annual cost per household for the City of Corona's program was estimated to be \$32, which should be similar to the costs to implement the MS4 programs in the Riverside County portion of the San Diego Region. In contrast, the cost of the City of Encinitas' program, with an annual cost per household estimated to be \$46, may represent the upper range of Riverside County MS4 programs. However, the City of Encinitas's program cost can be considered as the high end of the spectrum for management program costs because the City has a consent decree with environmental groups regarding its program, and City of Encinitas has received recognition for implementing a superior program.

The annual costs for the City of Corona and City of Encinitas were estimated from data collected in 2003-2004. Between 2003 and 2008, the number of households in both cities has increased by approximately 3 percent and 7 percent, respectively.⁹ In contrast, between 2003 and 2008 the number of households in the City of Temecula has increased from 23,199 to 31,135 (34 percent)¹⁰ and the City of Murrieta has increased from 22,020 to 32,664 (48 percent).¹¹ This significant increase in number of households indicates a significant increase in the tax base (sales and property tax) available to fund the implementation of the MS4 programs for the City of Temecula and City of Murrieta, as well as for the County of Riverside and recently incorporated cities.

⁷ Los Angeles Water Board, 2003. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003. P. 2.

⁸ State Water Board, 2005. NPDES Stormwater Cost Survey. P. ii.

⁹ Southern California Association of Governments, Profile of the City of Corona, dated May 2009; and City of Encinitas, Comprehensive Financial Annual Report, dated June 30, 2009.

¹⁰ Southern California Association of Governments, Profile of the City of Temecula, dated May 2009.

¹¹ Southern California Association of Governments, Profile of the City of Murrieta, dated May 2009.

The average amount spent per household in the Cities of Temecula and Murrieta, however, does not correspond with the increase in the number of households or the amount spent in municipalities in other regions. The table below compares the reported expenditures for the MS4 programs from 2006-07 to 2008-09 compared to number of households in the Cities of Encinitas, Corona, Temecula, and Murrieta.¹²

City	2006-07			2007-08			2008-09		
	\$ Spent	House-holds	\$/House-hold	\$ Spent	House-holds	\$/House-hold	\$ Spent	House-holds	\$/House-hold
Encinitas	\$1,192,174	23,798	\$50.10	\$2,052,671	23,871	\$85.99	\$1,729,962	24,100	\$71.78
Corona	\$988,547	43,000	\$22.99	\$1,151,779	43,482	\$26.49	\$1,162,928*	43,827	\$26.53
Temecula	\$566,952	28,890	\$19.62	\$748,267	30,222	\$24.76	\$534,492	31,135	\$17.17
Murrieta	\$186,377	30,237	\$6.16	\$258,247	31,758	\$8.13	\$541,180*	32,664	\$16.56

It is important to note that the program costs reported above may not include costs incurred by other departments or programs that may support the MS4 permit programs. The costs only represent the funds spent by each municipality as reported in their jurisdictional program annual reports. In any case, the figures in the table above illustrate the disparity in the amounts reportedly budgeted and spent for the programs in the Riverside County portion of the San Diego Region in comparison to the amounts budgeted and spent in the Santa Ana Region and in the San Diego County portion of the San Diego Region.

It is also important to note that reported program costs are not all attributable to compliance with MS4 permits. Many program components, and their associated costs, existed before any MS4 permits were ever issued. For example, street sweeping and trash collection costs cannot be solely or even principally attributable to MS4 permit compliance, since these practices have long been expected from and implemented by municipalities.

Therefore, true program cost resulting from MS4 permit requirements is some fraction of reported costs. The California State University, Sacramento study found that only 38 percent of program costs are new costs fully attributable to MS4 permits. The remainder of the program costs was either pre-existing or resulted from enhancement of pre-existing programs.¹³ In 2000, the County of Orange found that even lesser amounts of program costs are solely attributable to MS4 permit compliance, reporting that the amount attributable to implement the County of Orange Drainage Area Management Plan (DAMP), was less than 20 percent of the total budget. The remaining 80 percent was attributable to pre-existing programs.¹⁴

¹² Amount (\$) Spent figures are the actual expenditures reported in the 2006-07, 2007-08, and/or 2008/09 Annual Reports for the jurisdictional programs for each municipality (figures with * are estimated/budgeted expenditures). Number of households derived from SCAG 2009 profiles of Corona, Temecula, and Murrieta, and from City of Encinitas 2009 Financial Annual Report.

¹³ State Water Board, 2005. NPDES Stormwater Cost Survey. P. 58.

¹⁴ County of Orange, 2000. A NPDES Annual Progress Report. P. 60. More current data from the County of Orange is not used in this discussion because the County of Orange no longer reports such information.

Estimating Costs of Reissued Storm Water Permits

The vast majority of costs that will be incurred as a result of implementing Order No. R9-2010-0016 is not new. Storm water management programs have been in place in Riverside County for over 15 years. As shown in the discussion above, the amount spent for MS4 Permit compliance per household in the municipalities in the Riverside County portion of the San Diego Region is already low compared to other regions. Any increase in cost to the Copermittees, however, is still expected to be incremental in nature. Since Order No. R9-2010-0016 “fine tunes” the requirements of Order No. R9-2004-001, these cost increases are expected to be modest.

Where there may be additional elements that will incur new costs, the Riverside County Copermittees are given the time to develop the budgets and funding mechanisms to phase those elements into their programs. Additionally, development of these additional elements by the Riverside County Copermittees will have the benefit of the experiences and work already done by the San Diego County and Orange County Copermittees.

The anticipated costs of program changes are difficult to estimate because of the flexibility inherent within the Permit and the recognition that program modifications will vary among the municipalities in response to the specific needs of the local and watershed programs. In other words, the Permit is intended to allow each Copermittee to de-emphasize some program components and strengthen others based on the experience of the jurisdictional programs.

The changes in Order No. R9-2010-0016 reflect the iterative process of BMP implementation and the necessarily adaptive nature of storm water management that is expected by the USEPA. In 1996, USEPA recognized that changes to MS4 programs would occur during the reapplication period based on new information on the relative magnitude of a problem, new data on water quality impacts of the storm water discharges, and experience gained under the prior permit.¹⁵ Some changes have been proposed by the Copermittees in the permit reapplication package, and others have been included because the San Diego Water Board considers those measures necessary and feasible to protect water quality from the effects of MS4 discharges.

¹⁵ Federal Register / Vol. 61, No. 155 / Friday, August 9, 1996 / Rules and Regulations. Interpretive policy memorandum on reapplication requirements for MS4s.

Other Economic Considerations

Economic considerations of management programs cannot be limited only to program costs. Evaluation of programs requires information on the implementation costs and information on the benefits derived from environmental protection and improvement.¹⁶ Attention is often focused on program costs, but the programs must also be viewed in terms of their value to the public.

For example, household willingness to pay for improvements in fresh water quality for fishing and boating has been estimated by USEPA to be \$158-210.¹⁷ This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. The California State University, Sacramento study reports that the annual household willingness to pay for statewide clean water is approximately \$180.¹⁸ When viewed in comparison to household costs for existing management programs, household willingness to pay estimates exhibit that per household costs incurred by the Riverside County Copermittees to implement their management programs are very low.

Placing a value on good water quality in receiving waters is very difficult. The Santa Margarita River is one of the few remaining natural gorge rivers in southern California, with approximately 70 species of special concern (rare, threatened, or endangered) regularly inhabiting the watershed, including 30 that are currently protected under the Federal Endangered Species Act.¹⁹ The Upper Santa Margarita Watershed provides significant habitat and recreation opportunities. In addition, residents and businesses in the Upper Santa Margarita Watershed rely heavily of local water for drinking, agriculture, and industrial supply.

Often the value of receiving waters with good water quality manifests in other forms, such as tourism, recreational opportunities, and increased property values. When surface waters are degraded, thereby degrading the habitat, the public loses the aesthetic value and benefit of being able to use the area in and around the water. Surface waters that are able to support the beneficial uses designated in the Water Quality Control Plan for the San Diego Basin (Basin Plan) can sustain plants and wildlife that can attract visitors and residents, providing aesthetic, recreational, as well as monetary value to the public. At this time, however, there have been no studies for the Riverside County portion of the San Diego Region to quantify the added value that surface waters with healthy water quality can provide.

It is also important to consider the benefits of management programs in conjunction with their costs. A study conducted by the University of Southern California and University of California, Los Angeles assessed the costs and benefits of implementing

¹⁶ Ribaldo M.O. and D. Heelerstein. 1992. *Estimating Water Quality Benefits: Theoretical and Methodological Issues*. U.S. Department of Agriculture. Technical Bulletin No. 1808.

¹⁷ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.

¹⁸ State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.

¹⁹ Stein, E. and Ambrose, R. 1998. Cumulative Impacts of Section 404 Clean Water Act Permitting on the Riparian Habitat of the Santa Margarita, California Watershed. Wetlands, Vol. 18, No. 3.

various approaches for achieving compliance with the MS4 permits in the Los Angeles Region. The study found that non-structural systems would cost \$2.8 billion but provide \$5.6 billion in benefit. If structural systems were determined to be needed, the study found that total costs would be \$5.7 to \$7.4 billion, while benefits could reach \$18 billion.²⁰ Costs are anticipated to be borne over many years – probably ten years at least. As can be seen, the benefits of the programs are expected to considerably exceed their costs. Such findings are corroborated by USEPA, which found that the benefits of implementation of its Phase II storm water rule would also outweigh the costs.²¹

²⁰ Los Angeles Water Board, 2004. Alternative Approaches to Stormwater Control.

²¹ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.

VII. LEGAL AUTHORITY

The following statutes, regulations, and Water Quality Control Plans provide the basis for the requirements of Order No. R9-2010-0016: Clean Water Act (CWA), California Water Code (CWC), Title 40 of the Code of Federal Regulations (40 CFR) Parts 122, 123, 124 (National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, Final Rule), Part II of 40 CFR 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), Water Quality Control Plan – Ocean Waters of California (California Ocean Plan), Water Quality Control Plan for the San Diego Basin (Basin Plan), 40 CFR 131 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule (California Toxics Rule), and the California Toxics Rule Implementation Plan.

The legal authority citations below generally apply to directives in Order No. R9-2010-0016, and provide the San Diego Water Board with ample underlying authority to require each of the directives of Order No. R9-2010-0016. Legal authority citations are also provided with each permit section discussion in section IX of this Fact Sheet/Technical Report.

CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers.”

CWA 402(p)(3)(B)(iii) – The CWA requires in section 402(p)(3)(B)(iii) that permits for discharges from municipal storm sewers “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”

40 CFR 122.26(d)(2)(i)(B,C,E, and F) – Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B,C,E, and F) provide that each Copermittee’s permit application “shall consist of: (i) Adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to: [...] (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water; [...] (E) Require compliance with condition in ordinances, permits, contracts or orders; and (F) Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.”

40 CFR 122.26(d)(2)(iv) – Federal NPDES regulation 40 CFR 122.26(d)(2)(iv) provides that the Copermittee shall develop and implement a proposed management program which “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. [...] Proposed programs may impose controls on a system wide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. [...] Proposed management programs shall describe priorities for implementing controls.”

40 CFR 122.26(d)(2)(iv)(A - D) – Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A - D) require municipalities to implement controls to reduce pollutants in storm water runoff from new development and significant redevelopment, construction, and commercial, residential, industrial, and municipal land uses or activities. Prevention of illicit discharges is also required.

CWC 13377 – CWC section 13377 provides that “Notwithstanding any other provision of this division, the State Water Board or the Regional Water Boards shall, as required or authorized by the CWA, as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with anymore stringent effluent standards or limitation necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.”

Order No. R9-2010-0016 is an essential mechanism for achieving the water quality objectives that have been established for protecting the beneficial uses of the water resources in the San Diego Water Board's portion of Riverside County. Federal NPDES regulation 40 CFR 122.44(d)(1) requires MS4 permits to include any requirements necessary to “achieve water quality standards established under CWA section 303, including State narrative criteria for water quality.” The term “water quality standards” in this context refers to a water body's beneficial uses and the water quality objectives necessary to protect those beneficial uses as established in the Basin Plan and antidegradation policies.

VIII. FINDINGS

The findings of the Order have been modified to reduce repetition in their discussions and address new requirements. Each finding of the Order is provided and discussed below. Additional discussion relative to the findings can be found in section IX of the Fact Sheet, which provides discussions of the Order's directives.

A. Basis For the Order

Finding A.1. This Order is based on the federal Clean Water Act (CWA), the Porter-Cologne Water Quality Control Act (Division 7 of the Water Code, commencing with Section 13000), applicable State and federal regulations, all applicable provisions of statewide Water Quality Control Plans and Policies adopted by the State Water Resources Control Board (State Water Board), the Water Quality Control Plan for the San Diego Basin adopted by the San Diego Water Board (Basin Plan), the California Toxics Rule, and the California Toxics Rule Implementation Plan.

Discussion of Finding A.1. In 1987, Congress established CWA Amendments to create requirements for storm water discharges under the NPDES program, which provides for permit systems to regulate the discharge of pollutants. Under the Porter-Cologne Water Quality Control Act, the State Water Board and the nine Regional Water Boards have primary responsibility for the coordination and control of water quality, including the authority to implement the CWA. Porter-Cologne (section 13240) directs the Regional Water Boards to set water quality objectives via adoption of Water Quality Control Plans (Basin Plans) that conform to all State policies for water quality control.

As a means for achieving those water quality objectives, Porter-Cologne (section 13243) further authorizes the Regional Water Boards to establish waste discharge requirements (WDRs) to prohibit waste discharges in certain conditions or areas. Since 1990, the San Diego Water Board has issued area-wide MS4 NPDES permits. The Order will renew Order No. R9-2004-001 to comply with the CWA and attain water quality objectives in the Basin Plan by including numeric storm water action levels to limit the contributions of pollutants conveyed by storm water, and by including numeric non-storm water action levels for dry weather non-storm water discharges designed to ensure that the Copermittees comply with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into their MS4. Further discussions of the legal authority associated with the prohibitions and directives of the Order are provided in section VII this document.

Finding A.2. This Order reissues National Pollutant Discharge Elimination System (NPDES) Permit No. CAS0108766, which was first adopted by the San Diego Water Board on July 16, 1990 (Order No. 90-38), and then reissued on May 13, 1998 (Order No. 98-02). On May 26, 1998, the United States Environmental Protection Agency

(USEPA), Region IX, objected to Order No. 98-02 due to concerns regarding Receiving Water Limitations (RWL) language. The USEPA concluded that the RWL language in the permit did not comply with the CWA and its implementing regulations. On April 27, 1999, the USEPA reissued the MS4 permit, which the San Diego Water Board adopted as Addendum No. 1 to Order No. 98-02 on November 8, 2000. On July 14, 2004, the San Diego Water Board adopted the third term MS4 permit, Order No. R9-2004-001. On January 15, 2009, the Riverside County Flood Control and Water Conservation District (RCFCD), as the Principal Copermittee, submitted a Report of Waste Discharge (ROWD) for reissuance of the municipal separate storm sewer system (MS4) Permit.

Discussion of Finding A.2. This Order renews National Pollutant Discharge Elimination System (NPDES) Permit No. CAS0108766, which was first issued on July 16, 1990 (Order No. 90-38), and then renewed on May 13, 1998 (Order No. 98-02). The USEPA determined that Order No. 98-02 the Receiving Water Limitations (RWL) language in the permit did not comply with the CWA and its implementing regulations. The USEPA assumed responsibility and reissued the Riverside County MS4 permit on April 27, 1999. Subsequently, the San Diego Water Board adopted Addendum No. 1 to Order No. 98-02 on November 8, 2000, which incorporated the USEPA's permit by reference. On July 14, 2004, the San Diego Water Board adopted the third term MS4 permit, Order No. R9-2004-001. On January 15, 2009, in accordance with Order No. R9-2004-001, the Riverside County Flood Control and Water Conservation District (District), as the Principal Copermittee, submitted a Report of Waste Discharge (ROWD) for reissuance of the municipal separate storm sewer system (MS4) Permit. Supporting information discussing the topic of this finding can be found in section V of this document.

Finding A.3. This Order is consistent with the following precedential Orders adopted by the State Water Board addressing MS4 NPDES Permits: Order WQ 99-05, Order WQ 2000-11, Order WQ 2001-15, Order WQO 2002-0014, and Order WQ 2009-0008 (*SWRCB/OCC FILE A-1780*).

Discussion of Finding A.3. In recent years the State Water Board has considered several appeals of MS4 permits issued by the Regional Water Boards. In State Water Board Order WQ 99-05, the State Water Board established Receiving Water Limitation Language for MS4 permits. In State Water Board Order WQ 2000-11, the State Water Board addressed design standards for Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. In State Water Board Order WQ 2001-15, the State Water Board addressed Petitions of the San Diego County MS4 Permit issued by the San Diego Water Board in 2001 (San Diego Water Board Order No. 2001-001). In State Water Board Order WQO 2002-0014, the State Water Board addresses Petitions of the Orange County MS4 Permit issued by the San Diego Water Board in 2002 (San Diego Water Board Order No. R9-2002-0001). In State Water Board Order WQ 2009-0008, the State Water Board addresses Petitions of the Los Angeles County MS4 Permit issued by the Los Angeles Water Board in 2006 (Los Angeles Water Board Order No. R4-2006-0074).

Finding A.4. The Fact Sheet / Technical Report for the Order No. R9-2010-0016, NPDES No. CAS0108766, Waste Discharge Requirements for Discharges from the MS4s Draining the County of Riverside, the Incorporated Cities of Riverside County, and the Riverside County Flood Control and Water Conservation District within the San Diego Region, includes cited regulatory and legal references and additional explanatory information and data in support of the requirements of this Order. This information, including any supplements thereto, is hereby incorporated by reference into these findings.

Discussion of Finding A.4. This Fact Sheet briefly sets forth the principle facts and the significant factual, legal, methodological, and policy questions that the San Diego Water Board considered in preparing Order No. R9-2010-0016, in accordance with the Code of Federal Regulations (CFR) title 40 parts 124.8 and 124.56 (40 CFR 124.8 and 124.56). This Fact Sheet includes general information regarding the watershed and the Copermittees' discharges from their MS4 systems. The discussions in the Fact Sheet include references to applicable statutes and regulations, as well as other supporting documents. The discussions in the Fact Sheet also can clarify the permit writer's intent for requirements that may appear vague or open to multiple interpretations.

B. Regulated Parties

Finding B.1. Each of the persons in Table 1 below, hereinafter called Copermittees or dischargers, owns or operates an MS4, through which it discharges storm water and non-storm water into waters of the United States (U.S.) within the San Diego Region. These MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) a small MS4 that is “interrelated” to a medium or large MS4; or (3) an MS4 which contributes to a violation of a water quality standard; or (4) an MS4 which is a significant contributor of pollutants to waters of the U.S.

The Cities of Murietta, Menifee and Wildomar also discharge into waters of the U.S. in the California Regional Water Quality Control Board, Santa Ana Region (Santa Ana Water Board), so are located partially within both the San Diego and Santa Ana Water Board boundaries. As allowed by California Water Code (CWC) §13228, these Cities submitted written requests to be regulated for MS4 purposes under a permit adopted by only one Water Board. As authorized by CWC § 13228 and pursuant to a written agreement between the San Diego Water Board and the Santa Ana Water Board, the Cities of Murrieta and Wildomar are wholly regulated by the San Diego Water Board under this Order, including those portions of the Cities jurisdiction not within the San Diego Water Board’s region. Similarly, the City of Menifee is wholly regulated by the Santa Ana Water Board under Order No. R8-2010-0033, including those portions of the City of Menifee within the San Diego Water Board’s region.

Discussion of Finding B.1. Section 402 of the CWA prohibits the discharge of any pollutant to waters of the United States from a point source, unless that discharge is authorized by a NPDES permit. Though storm water and non-storm water may come from a diffuse source, it is discharged through MS4s, which are point sources under the CWA. Federal NPDES regulation 40 CFR 122.26(a) (iii) and (iv) provide that discharges from MS4s, which service medium or large populations greater than 100,000 or 250,000 respectively, shall be required to obtain a NPDES permit. Federal NPDES regulation 40 CFR 122.26(a)(v) also provides that a NPDES permit is required for “A [storm water] discharge which the Director, or in states with approved NPDES programs, either the Director or the USEPA Regional Administrator, determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.” Such sources are then designated into the program.

Included in Table 1 of the Order are the Cities of Murrieta, Temecula, and Wildomar, the County of Riverside, and the Riverside County Flood Control and Water Conservation District. The Cities of Wildomar and Menifee are newly incorporated cities. Both Cities were previously a part of the County of Riverside’s jurisdiction and have an MS4 interrelated to other Copermittee MS4s in the San Diego Region. The boundaries of the Cities of Menifee, Murrieta, and Wildomar fall within the jurisdiction of both the San Diego Water Board and the Santa Ana Water Board.

As requested by the Cities of Menifee, Murrieta, and Wildomar, and pursuant to an agreement between the San Diego and Santa Ana Water Boards as authorized by CWC section 13228, the MS4s of the Cities of Murrieta and Wildomar are to be wholly regulated by the San Diego Water Board under this Order, and the MS4 of the City of Menifee is to be wholly regulated by the Santa Ana Water Board under Order No. R8-2010-0033. The agreement between the San Diego and Santa Ana Water Board to regulate the Cities of Menifee, Murrieta, and Wildomar will be subject to change with sufficient notice, and for good cause.

Other small MS4s also exist within the portion of Riverside County in the San Diego Region. While these small MS4s are not subject to this Order, they are subject to the Phase II NPDES storm water regulations. Over time, these small MS4s will be designated for coverage under the State Water Board's statewide general storm water permit for small MS4s.

C. Discharge Characteristics

Finding C.1. Discharges from the MS4 contain waste, as defined in the CWC, and pollutants that adversely affect the quality of the waters of the State. The discharge from an MS4 is a “discharge of pollutants from a point source” into waters of the U.S. as defined in the CWA.

Discussion of Finding C.1. Section 13050(d) of the CWC defines “waste” as “sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.” 40 CFR 122.2 defines “point source” as “any discernable, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.” 40 CFR 122.2 defines “discharge of a pollutant” as “Any addition of any pollutant or combination of pollutants to waters of the U.S. from any point source.” Also, the justification for control of pollution into waters of the state can be found at CWC section 13260(a)(1). State Water Board Order No. WQ 2001-15 verifies that discharges from the MS4 contain waste.²²

The term “urban runoff” has been removed throughout Order No. R9-2010-0016 and replaced with storm water (wet weather) or non-storm water (dry weather) runoff. This clarification is necessary to prevent the misunderstanding that regulation under this permit is subject only to urbanized areas. The term “urban runoff” is not defined in the Code of Federal Regulations or Federal Register in the regulation of Phase I MS4 discharges.

In the Copermittees’ ROWD, a distinction is made between urban land use areas and non-urban land use areas. Urban land use areas include commercial, industrial, *urban residential (less than 1 acre)*, parks and recreation facilities, and streets and roads land use categories. Non-urban land use areas include preserves and open space, agriculture, federal/state/tribal lands/non-County jurisdiction, and *rural residential (greater than 1 acre)*. The ROWD implies that only discharges from the urban land use areas are subject to the requirements of the MS4 Permit, thus rural residential (greater than 1 acre) land use areas would not be subject to the requirements of the MS4 Permit. Rural residential land use areas, however, are subject to the requirements of the MS4 Permit. The removal of the term urban runoff will further clarify the application of the requirements of the MS4 Permit.

²² State Water Board, 2001. Order WQ 2001-15. In the Matter of Petitions of Building Industry Association of San Diego County and Western States Petroleum Association: For Review of Waster Discharge Requirements Order No. 2001-01 for Urban Runoff from San Diego County [NPDES No. CAS0108758] Issued by the Regional Board.

The discharge of runoff from an MS4 is a “discharge of pollutants from a point source” into waters of the U.S. as defined in the CWA. The Permit defines runoff as all flows in a storm water conveyance system (MS4 defined below) and consists of the following components:

- (1) storm water (wet weather flows) and
- (2) non-storm water discharges (dry weather flows).

The Permit defines an MS4 as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
- (ii) Designated or used for collecting or conveying storm water;
- (iii) Which is not a combined sewer;
- (iv) Which is not part of the Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.26.

Permit finding D.3.c. includes natural streams that convey runoff as part of the MS4. The presence of an MS4 system is not limited to areas considered to be “urban” in nature. Though the term urban is often referred to specifically as pertaining to cities, runoff means all flows in a storm water conveyance system, regardless of the location of the conveyance system. A conveyance system owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law), may be located in a setting (e.g. unincorporated area, low density residential) that is not considered by the public to be “urban” in nature. These areas are contributing pollutants to the MS4 system that must be addressed. The term runoff applies to all flows in an MS4 system, no matter where the MS4 may be located in regards to incorporated or unincorporated property. Storm water and non-storm water discharges from the rural residential (greater than 1 acre) land use category, characterized as non-urban, that enter into any part of the MS4 system (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), are also subject to the requirements of the MS4 Permit.

The Code of Federal Regulations (CFR) at 40 CFR 122.26 requires that large and medium MS4s obtain a permit for all discharges from their systems. Appendix I to 40 CFR 122 designates Riverside County as having a large and medium MS4 requiring a permit. The regulations do not differentiate discharges from urban or rural MS4 systems. Rather, the regulations require the permit for all discharges from their systems. In the Final Rule establishing the Phase 1 storm water regulations, the USEPA clarified that all discharges are subject to a permit. On page 48041 of the Final Rule, the USEPA states:

“EPA recognizes that some of the counties addressed by today’s rule have, in addition to areas with high unincorporated urbanized populations, areas that are essentially rural or uninhabited and may not be the subject of planned development. While permits issued for these municipal systems **will cover** (*emphasis added*) *municipal systems discharges in unincorporated portions of the county* (*emphasis added*), it is the intent of EPA that management plans and other components of the programs focus on the urbanized and developing areas of the county.”

So, while the Permit covers all MS4 discharges regardless if that discharge is in an urban or unincorporated area; the Copermittees management program should focus on urbanized areas. Due to the Permit’s requirements, the Copermittees management programs will naturally focus on urbanized areas. Urbanized areas have more industry, construction, pollution and MS4s that require more inspection, maintenance, monitoring, enforcement and complaint follow-up.

USEPA further clarified on page 48041 that all MS4 discharges require permit coverage when addressing highway MS4 systems:

“[The regulations] will result in discharges from separate storm sewer systems serving State highways and other highways through storm sewers ... in unincorporated portions of specified counties being included as part of the large or medium municipal separate storm sewer systems, since all municipal separate storm sewers within the boundaries of these political entities are included.”

In their summary on page 48043, the USEPA states:

“The definition [of MS4] provides that all systems within a geographical area including highways and flood controls will be covered, thereby avoiding fragmented and ill-coordinated programs;”

Neither the State Water Board’s storm water permit for Caltrans (State Water Board Order No. 99-06-DWQ) nor the Los Angeles Water Board’s MS4 permit for Ventura County include the term “urban runoff” in a significant regulatory capacity. The Caltrans permit has one reference to “urban runoff” where the term is used interchangeably with “storm water.” The draft Ventura permit uses the term “urban

runoff” when referring to titles of reference documents, previously adopted management plans and municipal ordinances that may contain the phrase.

The Copermittees have expressed concern regarding the regulation of pollutants from natural, undeveloped areas that enter the MS4 in an unincorporated area. Runoff and pollutants from any source entering the MS4, however, become the responsibility of the Copermittees upon entering the MS4. The assimilation of pollutants from natural, undeveloped areas is different under natural conditions compared to when they are transported through the MS4. The MS4 collection could change a natural sheet flow discharge to a concentrated point discharge. The MS4 does not provide natural infiltration or other pollutant remediation that these flows would receive in an otherwise natural drainage system. The MS4 may concentrate these natural pollutants and flows. In some cases, the MS4 may ultimately discharge the elevated concentrations of natural pollutants and flow rates to waters of the US far from the natural pollutant and flow source, causing a condition of pollution or a violation of water quality standards.

Finding C.2. MS4 storm water and non-storm water discharges are likely to contain pollutants that cause or threaten to cause a violation of surface water quality standards, as outlined in the Basin Plan. Storm water and non-storm water discharges from the MS4 are subject to the conditions and requirements established in the Basin Plan for point source discharges.

Discussion of Finding C.2. This finding is a clarification regarding the potential for discharges of storm water and non-storm water to impact the Beneficial Uses as described in the Basin Plan. As such these point source discharges require Waste Discharge Requirements (WDRs) to ensure that water quality standards are met. Furthermore, since point source discharges require WDRs, the discharges are subject to the prohibitions, conditions and requirements of the Basin Plan.

In addition, municipal discharges have been split into storm water and non-storm water discharges to represent the differing regulations applicable to storm water and non-storm water, though both types of discharges are likely to contain pollutants.

Finding C.3. The most common categories of pollutants in runoff include total suspended solids, sediment, pathogens (e.g., bacteria, viruses, protozoa), heavy metals (e.g., copper, lead, zinc and cadmium), petroleum products and polynuclear aromatic hydrocarbons, synthetic organics (e.g., pesticides, herbicides, and PCBs), nutrients (e.g., nitrogen and phosphorus fertilizers), oxygen-demanding substances (decaying vegetation, animal waste), detergents, and trash.

Discussion of Finding C.3. The National Urban Runoff Program (NURP) study showed that heavy metals, organics, coliform bacteria, nutrients, oxygen demanding substances (e.g., decaying vegetation), and total suspended solids are found at

relatively high levels in storm water and non-storm water discharges.²³ It also found that MS4 discharges draining residential, commercial, and light industrial areas contain significant loadings of total suspended solids and other pollutants. The Basin Plan goes on to identify runoff pollutants to include lawn and garden chemicals, household and automotive care products dumped or drained on streets, and sediment that erodes from construction sites.²⁴ In addition, the State Water Board Urban Runoff Technical Advisory Committee (TAC) finds that urban runoff pollutants include sediments, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogenic bacteria, viruses, and pesticides.²⁵ Runoff that flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas carries these untreated pollutants through storm drain networks directly to the receiving waters of the San Diego Region.

Finding C.4. The discharge of pollutants and/or increased flows from MS4s may cause or threaten to cause the concentration of pollutants to exceed applicable receiving water quality objectives and impair or threaten to impair designated beneficial uses resulting in a condition of pollution (i.e. unreasonable impairment of water quality for designated beneficial uses), contamination, or nuisance.

Discussion of Finding C.4. 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 and non-storm water runoff.²⁶ The 1998 National Water Quality Inventory Report showed that runoff discharges affect 11 percent of rivers, 12 percent of lakes, and 28 percent of estuaries. Primary sources of impairment to rivers and streams included sediment, bacteria, nutrients, oxygen-depleting substances, metals, and pesticides. The report notes that runoff discharges are the leading source of pollution and the main factor in the degradation of surface water quality in California's coastal waters, rivers, and streams. Furthermore, the NURP study found that pollutant levels from illicit non-storm water discharges were high enough to significantly degrade receiving water quality, and threaten aquatic life, wildlife, and human health.²⁷

In addition, the Region's CWA section 303(d) list, which identifies water bodies with impaired beneficial uses within the region, also indicates that the impacts of storm water and non-storm water runoff on receiving waters are significant. Many of the impaired water bodies on the 303(d) list are impaired by constituents that have been found at high levels within storm water and non-storm water runoff by the Riverside County storm water monitoring program.²⁸ Examples of constituents frequently

²³ Ibid.

²⁴ San Diego Water Board, 1994. Water Quality Control Plan, San Diego Basin, Region 9. San Diego.

²⁵ State Water Board, 1994. Urban Runoff Technical Advisory Committee Report and Recommendations. Nonpoint Source Management Program.

²⁶ USEPA, 2000. Quality of Our Nation's Waters: Summary of the National Water Quality Inventory 1998 Report to Congress – USEPA 841-S-00-001; Water Quality Conditions in the United States: Profile from the 1998 National Water Quality Inventory Report to Congress – USEPA 841-F-00-006.

²⁷ USEPA, 1993. Results of the Nationwide Urban Runoff Program, Volume 1 – Final Report.

²⁸ County of Riverside, 2009. Riverside County Municipal Copermittees 2008-09 Annual Storm Water Program Report, Section 11.

responsible for beneficial use impairment include indicator fecal bacteria, heavy metals, toxicity, pesticides, dissolved solids, turbidity, and nutrients. These constituents have been found at high levels in runoff both regionally and nationwide.^{29,30} In addition, impairments may be caused by synergistic effects of multiple contaminants or by pollutants not currently monitored by storm water programs.

Finding C.5. Pollutants in runoff can threaten and adversely affect human health. Human illnesses have been clearly linked to recreating near storm drains flowing to receiving waters. Also, runoff pollutants in receiving waters can bioaccumulate in the tissues of invertebrates and fish, which may be eventually consumed by humans.

Discussion of Finding C.5. Human illnesses have been clearly linked to recreating near storm drains flowing to coastal waters. A landmark study, conducted by the Santa Monica Bay Restoration Project, found that there was an increased occurrence of illness in people that swam in proximity to a flowing storm drain.³¹ A study of south Huntington Beach and north Newport Beach (both located in northern Orange County) found that an illness rate of about 0.8 percent among bathers at those beaches resulted in about \$3 million annually in health-related expenses.³² Although the Upper Santa Margarita Watershed is inland, the watershed drains to the Pacific Ocean, and pollutants generated in the area may impact coastal waters. For example, the Santa Margarita River system provides the main source of beach sand for the beaches in northern San Diego County.³³ In addition, residents from the Upper Santa Margarita Watershed, who recreate at southern California beaches, benefit from clean water.

Residents and businesses in the Upper Santa Margarita Watershed also rely heavily on local water for drinking, agriculture and industrial supply. Over 40 percent of the water used in the watershed is locally produced.³⁴ In addition, surface and ground water from the Upper Santa Margarita Watershed flow to Fallbrook in San Diego County and the U.S. Marine Corps Base Camp Pendleton where it is used as part of the municipal and domestic water supply.

According to the USEPA, spilled fuel, solvents, waste oil, paints, and other maintenance fluids pose a risk to the environment, but may be especially harmful if they enter someone's drinking water supply.³⁵ Discharges of runoff from urban areas were identified by the California Department of Health Services as one of the most

²⁹ Ibid.

³⁰ USEPA, 1983. Results of the Nationwide Urban Runoff Program, Volume 1 – Final Report.

³¹ Haile, R.W., et al., 1996. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Santa Monica Bay Restoration Project.

³² Dwight, R.H., et al., 2005. Estimating the Economic Burden From Illnesses Associated With Recreational Coastal Water Pollution – A Case Study in Orange County, California. Journal of Enviro. Management Vol.76. No.2 p.95-103. Also reported in: Los Angeles Times, May 2, 2005. Here's What Ocean Germs Cost You: A UC Irvine Study Tallies the Cost of Treatment and Lost Wages for Beachgoers Who Get Sick.

³³ Shapiro. 1991. Refuge in an urbanized land, the Santa Margarita River: cultural and natural resource value. Santa Margarita Research Foundation, Fallbrook, CA.

³⁴ Jenks, J. 2002. Santa Margarita River Watershed Annual Watermaster Report: Water Year 2000-2001.

³⁵ USEPA. 2004. Municipal Storm Water and Ground Water Discharge Regulations in California. F-909-04-004.

prevalent possible contaminating activities for drinking water sources.³⁶ This issue of potential source water contamination is of fundamental importance, because of the dependence on local water for domestic use in the Santa Margarita Watershed.

Furthermore, runoff pollutants in receiving waters can bioaccumulate in the tissues of invertebrates and fish, which may eventually be consumed by humans. Pollutants such as heavy metals and pesticides, which are commonly found in MS4 runoff, have been found to bioaccumulate and biomagnify in long-lived organisms at the higher trophic levels.³⁷ Since many aquatic species are utilized for human consumption, toxic substances accumulated in species' tissues can pose a significant threat to public health. USEPA supports this finding when it states, "As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans."³⁸

Finding C.6. Runoff discharges from MS4s often contain pollutants that cause toxicity to aquatic organisms (i.e. adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies). Toxic pollutants impact the overall quality of aquatic systems and beneficial uses of receiving waters.

Discussion of Finding C.6. The Copermittees' monitoring data exhibits frequent toxic conditions in runoff during storm events and dry weather. Toxicity varies significantly within and among sites and over time. The cause of toxicity may vary between locations, dates, and indicator organisms. The actual cause may be influenced by various factors such as development, land uses, runoff management, habitat modification, hydromodification, and native aquatic environment. Some toxicity identification evaluations (TIEs) have identified pyrethroids as a cause of toxicity in the receiving waters.³⁹

Finding C.7. The Copermittees discharge runoff into lakes, drinking water reservoirs, rivers, streams, creeks, bays, estuaries, coastal lagoons, the Pacific Ocean, and tributaries thereto within one of the eleven hydrologic units (Santa Margarita Hydrologic Unit) comprising the San Diego Region as shown in Table 2. Some of the receiving water bodies have been designated as impaired by the San Diego Water Board in 2009 pursuant to CWA section 303(d).

³⁶ Ibid.

³⁷ Abel, P.D, 1996. Water Pollution Biology.

³⁸ USEPA, 2000. Storm Water Phase II Compliance Assistance Guide. Washington D.C. EPA 833-R-00-002.

³⁹ County of Riverside, 2009. Riverside County Municipal Copermittees 2008-09 Annual Storm Water Program Report, Section 11.

Discussion of Finding C.7. This finding identifies the major receiving water bodies in the Riverside County portion of the Santa Margarita Hydrologic Unit that are listed as impaired on the CWA section 303(d) List of Impaired Waters (303(d) List). The 2006 303(d) List has been approved by the San Diego Water Board, State Water Board, and USEPA.⁴⁰ The 2008 303(d) List was approved by the San Diego Water Board on December 18, 2009 and by the State Water Board on August 4, 2010, and is awaiting USEPA approval.⁴¹ The 303(d) list identifies waters that do not meet water quality standards after applying certain required technology-based effluent limits ("impaired" water bodies). As part of this listing process, states are required to prioritize waters/watersheds for future development of Total Maximum Daily Loads (TMDLs). The listed 303(d) pollutant(s) of concern do not necessarily reflect impairment of the entire corresponding major surface water bodies. The specific impaired portions of each water body are listed in the 2006 and 2008 303(d) Lists.

Since 2002, the number of water bodies and water body – pollutant combinations included on the 303(d) List, located in the Riverside County portion of the San Diego Region, has increased. A comparison of the 2002, 2006, and 2008 303(d) listings are summarized in the following table.

⁴⁰ The approved 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments is on-line at: http://www.waterboards.ca.gov/tmdl/303d_lists2006.html

⁴¹ The 2008 Clean Water Act Section 303(d) List of Water Quality Limited Segments, approved by the San Diego Water Board and State Water Board, is available on-line at http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/303d_list/index.shtml

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 33 of 199

Comparison of Riverside County 303(d) Listings

Watershed ¹	2002 303(d) List		2006 303(d) List		2008 303(d) List ²	
	Listed Water Body	Impairing Pollutants	Listed Water Body	Impairing Pollutants	Listed Water Body	Impairing Pollutants
De Luz Creek HSA (902.21)	NO LISTINGS	NOT APPLICABLE	De Luz Creek	Iron Manganese	De Luz Creek	Iron Manganese Nitrogen Sulfates
Gavilan HSA (902.22)	Sandia Creek	TDS	Sandia Creek	Iron Manganese Nitrogen Sulfates TDS	Sandia Creek	Iron Sulfates TDS
	Santa Margarita River (Upper)	Phosphorus	Santa Margarita River (Upper)	Phosphorus	Santa Margarita River (Upper)	Phosphorus Toxicity
Murrieta HSA (902.32)	NO LISTINGS	NOT APPLICABLE	Long Canyon Creek	TDS	Long Canyon Creek	Chlorpyrifos E. Coli Fecal Coliform Iron Manganese
French HSA (902.33)	NO LISTINGS	NOT APPLICABLE	NO LISTINGS	NOT APPLICABLE	Warm Springs Creek	Chlorpyrifos E. Coli Fecal Coliform Iron Manganese Phosphorus Total Nitrogen as N

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 34 of 199

Comparison of Riverside County 303(d) Listings (Cont'd)

Watershed ¹	2002 303(d) List		2006 303(d) List		2008 303(d) List ²	
	Listed Water Body	Impairing Pollutants	Listed Water Body	Impairing Pollutants	Listed Water Body	Impairing Pollutants
Gertrudis HSA (902.42)	NO LISTINGS	NOT APPLICABLE	NO LISTINGS	NOT APPLICABLE	Santa Gertrudis Creek	Chlorpyrifos Copper E. Coli Fecal Coliform Iron Phosphorus
Pauba HSA (902.51)	NO LISTINGS	NOT APPLICABLE	Temecula Creek	TDS Phosphorus Nitrogen	Temecula Creek	Chlorpyrifos Copper Phosphorus TDS Toxicity
	NO LISTINGS	NOT APPLICABLE	NO LISTINGS	NOT APPLICABLE	Redhawk Channel	Chlorpyrifos Copper Diazinon E. Coli Fecal Coliform Iron Manganese Nitrogen Phosphorus TDS
Wolf HSA (902.52)	Murrieta Creek	Phosphorus	Murrieta Creek	Phosphorus	Murrieta Creek	Chlorpyrifos Copper Iron Manganese Nitrogen Phosphorus Toxicity

Notes:

1. Hydrologic subarea (HSA) within the Santa Margarita Hydrologic Unit (HU), located in the Riverside County portion of the San Diego Basin.
2. Water bodies and pollutants on the 2008 303(d) List were approved by the San Diego Water Board on December 18, 2009 and by the State Water Board on August 4, 2010, and are awaiting final approval by the USEPA.

Finding C.8. Trash is a persistent pollutant which can enter receiving waters from the MS4, accumulate and be transported downstream into receiving waters over time. Trash poses a serious threat to the beneficial uses of the receiving waters, including, but not limited to, human health, rare and endangered species, navigation and human recreation.

Discussion of Finding C.8. The Copermittees to date have documented high volumes of trash coming from the MS4 system and in receiving waters.⁴²

The Basin Plan specifies the following narrative Water Quality Objective (WQO) for Floating Material:

“Waters shall not contain floating material, including solids, liquids, foams, and scum in concentrations which cause nuisance or adversely affect beneficial uses.”

The Basin Plan specifies the following narrative WQO for Suspended and Settleable Solids: Material:

“Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses.”

Additionally, high density urban areas in Southern California have been shown to be responsible for up to 60 percent of the trash that enters receiving waters from the MS4.⁴³ The retrofitting of existing MS4 systems, such as catch basins, in targeted high trash areas can result in significant reductions in the amount of trash entering receiving waters from the MS4.

Trash, as litter in both solid and liquid form, is consistently found on and adjacent to roadways. A California Department of Transportation Litter Management Pilot Study found that of roadway trash, plastics and Styrofoam accounted for 33 percent of trash by weight, and 43 percent by volume. Further, the study found that approximately 80 percent of the litter associated with roadways was floatable, indicating that, without capture, this litter would enter Waters of the State after a storm event, resulting in the impairment of Beneficial Uses.⁴⁴ The study, however, relied upon a mesh capture size of 0.25 inches (6.35 millimeters). This size is too large to effectively capture plastic pre-production pellets (a.k.a. “nurdles”), which are roughly 3 mm in size, and likely underestimated the total contribution of plastics. Furthermore, pre-production plastic pellets, which are small enough to be easily digested, have been found to carry persistent organic pollutants, including PCBs and DDT.⁴⁵

⁴² Fiscal Year 2008-2009 Santa Margarita Watershed Annual Report

⁴³ The City of Los Angeles Meets Trash TMDLs Compliance with CB Inserts and Opening Covers. August 06, 2008.

⁴⁴ California Department of Transportation District 7 Litter Management Pilot Study. June 26, 2000.

⁴⁵ Rios, L.M., Moore, C. and Patrick R. Jones. 2007. Persistent organic pollutants carried by synthetic polymers in the ocean environment. *Marine Pollution Bulletin*. Vol. 54.

Finding C.9. The Copermittees' water quality monitoring data submitted to date documents persistent violations of Basin Plan water quality objectives for various runoff-related pollutants (indicator bacteria, dissolved solids, turbidity, metals, pesticides, etc.) at various watershed monitoring stations. Persistent toxicity has also been observed at some watershed monitoring stations. In addition, bioassessment data indicate that the majority of the monitored receiving waters have Poor to Very Poor IBI ratings. In sum, the above findings indicate that runoff discharges are causing or contributing to water quality impairments, and are a leading cause of such impairments in Riverside County.

Discussion of Finding C.9. The Copermittees have produced data that demonstrates water quality objectives are frequently not met during dry and wet weather. The 2009 Report of Waste Discharge and the 2008-2009 Annual Reports document that receiving water monitoring stations often fail to meet water quality objectives established in the Basin Plan.

Water quality in receiving waters downstream of MS4 discharges fail to meet California Toxics Rule standards⁴⁶ and Basin Plan objectives. Data submitted in the MS4 Annual Reports indicate that at various times chemical, bacteria, pesticide, and metal concentrations may exceed water quality objectives in receiving waters in both wet and dry weather conditions.

There are no other significant NPDES permitted discharges to the creeks. For instance, there are no live-stream discharges of treated waste water in the Riverside County area of the Santa Margarita watershed. The few NPDES permits in the watershed are mainly for recycled water which only discharges occasionally during the rainy season. Because the water quality monitoring indicates exceedances of water quality standards and MS4 discharges are the main source of pollutants in the watersheds, it can be inferred that the MS4 discharges are causing or contributing to water quality impairments, and are a leading cause of such impairments in Riverside County.

Finding C.10. 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 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 3-5 percent conversion from natural to impervious surfaces. The increased runoff characteristics from new development must be controlled to protect

⁴⁶ The California Toxics Rule criteria promulgated by the USEPA are directly applicable water quality standards for certain priority toxic pollutants in inland surface waters and enclosed bays and estuaries in California.

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.

Finding C.11. Development creates new pollution sources as human population density increases and brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc. which can either be washed or directly dumped into the MS4. As a result, the runoff leaving the developed area is significantly greater in pollutant load than the pre-development runoff from the same area. These increased pollutant loads must be controlled to protect downstream receiving water quality.

Discussion of Findings C.10 and C.11. The Natural Resources Defense Council (NRDC) 1999 Report, "*Stormwater Strategies, Community Responses to Runoff Pollution*" identifies two main causes of the storm water pollution problem in developed areas. Both causes are directly related to development:

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. The concentration of pollutants in the runoff. Certain industrial, commercial, residential and construction activities are large contributors of pollutant concentrations in storm water runoff. As human population density increases, it brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc.

As a result of these two causes, runoff leaving developed areas is significantly greater in volume, velocity, and pollutant load than pre-development runoff from the same area.

By accommodating the traditional approach to storm water management, development has also altered the flow regime (rate, magnitude, frequency, timing, and flashiness of runoff) that supports aquatic and riparian habitats. These hydrologic changes are driven by the loss of water storage capacity in the watersheds,⁴⁷ and exacerbated by physical alterations of the stream channel network.⁴⁸ This relationship between development and stream channel integrity has been documented nationally and in southern California. The Copermittees support these findings in their 1993 DAMP,⁴⁹ which states:

⁴⁷ Konrad, Christopher P. and Derek K. Booth, 2005. *Hydrologic Changes in Urban Streams and Their Ecological Significance*. American Fisheries Society Symposium Vol.47 pp.157-177.

⁴⁸ Poff, N.L. et al. 1997. The Natural Flow Regime: A paradigm for river conservation and restoration. *Bioscience* Vol. 47, No. 11, pp.769-784.

⁴⁹ Riverside County Copermittees. 1993. Santa Margarita Regional Drainage Area Management Plan.

“Many storm water runoff problems are primarily a consequence of urbanization. Water that previously soaked into the ground, removing pollutants by filtering through soil, and eventually replenishing groundwater supplies, now must flow overland and therefore enters local streams more rapidly. The rapid transport of water increases the erosion of stream banks and hillsides and does not permit filtering pollutants. Sediment carried by storm water runoff can build up in streambeds, harming fish and aquatic habitat. The sediment acts as a transport mechanism for pollutants which adhere to soil particles. Typical urban runoff pollutants found in surface waters include heavy metals, nutrients, petroleum products, sediment, bacteria, chemicals, and litter.”

Hydrologic changes from development also directly and indirectly adversely affect wetlands. Natural wetlands support many beneficial uses and provide important water-quality related ecological services, including pollutant removal, flood attenuation, and groundwater recharge.⁵⁰ The Center for Watershed Protection recently provided USEPA with a synthesis of more than 100 scientific studies on the direct and indirect impacts of development, particularly urbanization, on wetlands and the role wetlands play in watershed quality. The report found that the three changes from land development with the most potential to impact wetlands include: Increased storm water runoff; decreased groundwater recharge; and flow constriction.⁵¹ Each of these changes can often be avoided or minimized by implementing low impact development (LID) and hydromodification BMPs.

When Order No. R9-2004-001 was adopted, studies had shown that the level of imperviousness in an area strongly correlates with the quality of nearby receiving waters.⁵² One comprehensive study, which looked at numerous areas, variables, and methods, revealed that stream degradation occurs at levels of imperviousness as low as 10 – 20 percent.⁵³ Stream degradation is a decline in the biological integrity and physical habitat conditions that are necessary to support natural biological diversity. For instance, few urban streams can support diverse benthic communities with imperviousness greater than or equal to 25 percent.⁵⁴ To provide some perspective, a medium density, single-family home area can be from 25 percent to 60 percent impervious (variation due to street and parking design).⁵⁵

More recently, a report on the effects of impervious in southern California streams found that local ephemeral and intermittent streams are more sensitive to such effects than streams in other parts of the country. This study, by the Southern California

⁵⁰ Wright, Tiffany, et al. 2006. “Direct and Indirect Impacts of Urbanization on Wetland Quality.” Prepared by the Center for Watershed Protection. Available at: <http://www.cwp.org>. 81p.

⁵¹ Ibid p.26

⁵² USEPA, 1999. Part II. 40 CFR 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.

⁵³ Ibid.

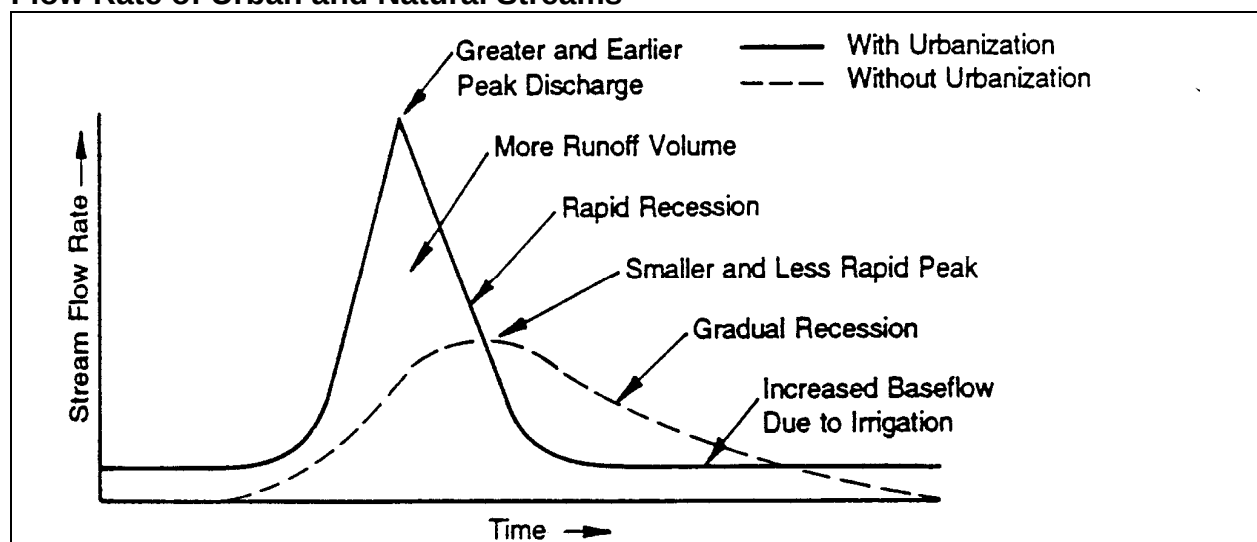
⁵⁴ Ibid.

⁵⁵ Schueler, T.R., 1994. The Importance of Imperviousness. Watershed Protection Techniques. As cited in 64 FR 68725.

Coastal Water Research Program, estimated a threshold of response at a two to three percent change in percent of impervious cover in a watershed.⁵⁶ This threshold is lower than the previously reported estimates by the USEPA that were cited in the Fact Sheet for Order No. R9-2004-001.

To demonstrate the principle of increased volume and velocity of runoff from urbanization, the figure below shows the flow rate of an urban vs. a natural stream. What the figure demonstrates is that urban stream flows have greater peaks and volumes, as well as shorter retention times than natural stream flows. The greater peak flows and volumes result in stream degradation through increased erosion of stream banks and damage to aquatic habitat. The shorter retention times result in less time for sediments and other pollutants to settle before being carried out to the ocean. This sediment, and the associated pollutants it carries, can be a significant cause of water quality degradation.

Flow Rate of Urban and Natural Streams⁵⁷



Increased volume and velocity of runoff adversely impacts receiving waters and their beneficial uses in many ways. According to the Urban Runoff TAC report,⁵⁸ increases in population density and imperviousness result in changes to stream hydrology including:

1. Increased peak discharges compared to pre-development levels;
2. Increased volume of storm water runoff with each storm compared to pre-development levels;

⁵⁶ Coleman, Derrick, et al. 2005. *Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams*. Technical Report No. 450 of the Southern California Coastal Water Research Project.

⁵⁷ Adapted from Schueler, T.R., 1987. *Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs*. Metropolitan Washington Council of Governments.

⁵⁸ State Water Board, 1994. *Urban Runoff Technical Advisory Committee Report and Recommendations*. Nonpoint Source Management Program.

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
6. Decreased infiltration and diminished ground water recharge.

Even though the rainfall depths in arid watersheds are lower, watershed development can greatly increase peak discharge rates during rare flood events.⁵⁹ A study conducted in arid watersheds around Riverside, CA showed that, over two decades, impervious cover increased from 9 percent to 22 percent, which resulted in an increase of more than 100 percent in the peak flow rate for the two-year storm event. The study also showed that the average annual storm water runoff volume had increased by 115 percent to 130 percent over the same time span.⁶⁰

Flooding caused by the increased volume and velocity of runoff from urbanization in the upper Santa Margarita watershed are clear examples of the effects described above. Disastrous flooding has occurred more frequently in recent years. In the last century, flood events occurred in 1938, 1969, 1980, 1993, 1995, and 1998.⁶¹ In the 1993 flood event, the Cities of Murrieta and Temecula sustained \$12 million dollars in damage, and Camp Pendleton sustained \$88 million in damage. Future flooding is expected to occur more frequently because of continued urban development within the watershed, and flood damages are expected to continue accruing at an estimated annual rate of \$1,780,300.

Prior hydromodification studies in California have shown that the increase in impervious cover, and thus change in runoff volume, velocity, rate, and duration, results in a shift in the range of storms that produce geomorphically significant flows within receiving waters (see above discussion). Additionally, studies in California have determined that ninety percent of the geomorphic “work” done within channels receiving flows from developed areas now occurs from flows below the 10 year peak flow event.⁶²

This increased volume, velocity, rate, and duration of runoff greatly accelerates the erosion of the beds and banks within downstream receiving waters. Additionally, storm water flows which runoff directly from impervious surfaces into the MS4 and thus receiving waters prevent the associated runoff of natural sediments which would occur in pre-project conditions. This combined alteration of the physical condition of storm water runoff results in accelerated downstream erosion of receiving water bed and

⁵⁹ Schueler and Holland, 2000. Storm Water Strategies for Arid and Semi-Arid Watersheds (Article 66). The Practice of Watershed Protection. P. 695-706.

⁶⁰ Ibid.

⁶¹ U.S. Army Corps of Engineers, 2000. Final EIS/EIR, Murrieta Creek Flood Control Project.

⁶² Santa Clara Valley Hydromodification Management Plan. April 21, 2005.

banks. The excessive erosion of stream beds and banks releases pollutants found in soils into receiving waters, degrades macroinvertebrate habitat (see D.2.c), eliminates spawning habitat, reduces associated wetland and riparian habitat, and threatens existing infrastructure adjacent to receiving waters. Bank sloughing within creeks and streams increases the pollutant loading to those receiving waters, particularly for turbidity and phosphorous.⁶³ In arid environments, accelerated channel erosion has been shown to have synergistic impacts within watersheds. Increased channel erosion within Las Vegas wash has resulted in the loss of over 1,000 acres of wetland and riparian habitat, released additional pollutants into downstream receiving waters, and eliminated in-stream habitat and water quality conditions required for existing threatened and endangered species.⁶⁴

Regarding the impact of development on storm water runoff pollutant loads, the San Diego Water Board's Basin Plan states:

Nonpoint source pollution is primarily the result of man's uses of land such as urbanization, roads and highways, vehicles, agriculture, construction, industry, mineral extraction, physical habitat alteration (dredging/filling), hydromodification (diversion, impoundment, channelization), silviculture (logging), and other activities which disturb land.⁶⁵ As a result, when rain falls on and drains through urban freeways, industries, construction sites, and neighborhoods it picks up a multitude of pollutants. The pollutants can be dissolved in the runoff and quickly transported by gravity flow through a vast network of concrete channels and underground pipes referred to as storm water conveyance systems. Such systems ultimately discharge the polluted runoff, without treatment, into the nation's creeks, rivers, estuaries, bays, and oceans.⁶⁶

According to the Center for Watershed Protection, urbanization strongly shapes the quality of both surface and ground water in arid and semi-arid regions of the southwest. Since rain events are so rare, pollutants have more time to build up on impervious surfaces compared to humid regions. Therefore, the pollutant concentrations of storm water runoff from arid watersheds tend to be higher than that of humid watersheds.⁶⁷ The effect of antecedent rainfall events is demonstrated in a report from the California Department of Transportation (Caltrans) that found the concept of a seasonal first flush is applicable to the southern California climate.⁶⁸

⁶³ Sekely, A.C., Mulla, D.J. and D.W. Bauer. 2002. Streambank slumping and its contribution to the phosphorus and suspended sediment loads of the Blue Earth River, Minnesota. *Journal of Soil and Water Conservation*. September 2002 vol. 57 no. 5 243-250.

⁶⁴ Tuttle, P.L. and E.L. Orsak. 2002. Las Vegas Wash Water Quality and Implications to Fish and Wildlife. U.S. Fish and Wildlife Service.

⁶⁵ San Diego Water Board, 1994. Water Quality Control Plan for the San Diego Basin. P. 4-66.

⁶⁶ Ibid. P. 4-69 - 4-70.

⁶⁷ Schueler and Holland, 2000. Storm Water Strategies for Arid and Semi-Arid Watersheds (Article 66). The Practice of Watershed Protection. P. 695-706.

⁶⁸ Stenstrom, Michael and Masoud Kayhanian, 2005. *First Flush Phenomenon Characterization*. Prepared for Caltrans. Report No. CTSW-RT-05-73-02.6 Study jointly performed by UCLA and UCD. Most of the data presented was collected from three highly urbanized highway sites in west Los Angeles. Much effort went into developing a quantitative way of defining the mass first flush. Other aspects include: variability of water quality during storm events, litter characteristics, correlation among constituents, first flush of organics and particle size

Finding C.12. Development and urbanization especially threaten environmentally sensitive areas (ESAs), such as water bodies designated as supporting a RARE beneficial use (supporting rare, threatened or endangered species) and CWA 303(d)-impaired water bodies. Such areas have a much lower capacity to withstand pollutant loads than other, more sensitive areas. In essence, development that is ordinarily insignificant in its impact on the environment may become significant in a particularly sensitive environment. Therefore, additional controls to reduce storm water pollutants from new and existing development may be necessary for areas adjacent to or discharging directly to an ESA.

Discussion of Finding C.12. ESAs are defined in the Order as “Areas that include but are not limited to all CWA section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the Basin Plan; water bodies designated with the RARE beneficial use by the Basin Plan; areas designated as preserves or their equivalent under the Natural Communities Conservation Program within the Cities and County of Riverside; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees.”

Areas that meet this definition are inherently sensitive habitats containing unique, rare, threatened, or endangered species, or are not achieving their designated beneficial uses. As discussed above, runoff is known to contain a wide range of pollutants and has demonstrated toxicity to plants and animals. Therefore, it is necessary to apply additional storm water controls for developments within, adjacent to, or directly discharging to ESAs. This need for additional storm water controls is addressed within each component of the Order. USEPA supports the requirement for additional storm water controls, stating “For construction sites that discharge to receiving waters that do not support their designated use or other waters of special concern, additional construction site controls are probably warranted and should be strongly considered.”⁶⁹ Further support for requiring additional controls to reduce pollutants in storm water discharges to ESAs can be found in *Mitigation of Storm Water Impacts From New Developments in Environmentally Sensitive Areas*, a technical report written by the Los Angeles Water Board.⁷⁰

Finding C.13. Although dependent on several factors, the risks typically associated with properly managed infiltration of runoff (especially from residential land use areas) are not significant. The risks associated with infiltration can be managed by many techniques, including (1) 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); (2) taking reasonable steps to prevent the illegal disposal of wastes; (3) protecting footings and foundations; (4)

distribution, new methods for measuring oil and grease, and grab and composite sampling strategies. The report is available on-line at: <http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/>

⁶⁹ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. Washington D.C. EPA/833-B-92-002.

⁷⁰ Los Angeles Water Board, 2001. *Mitigation of Storm Water Impacts From New Developments In Environmentally Sensitive Areas*.

ensuring that each drainage feature is adequately maintained in perpetuity; and (5) pretreatment.

Discussion of Finding C.13. Infiltration is an effective means for managing runoff. However, measures must be taken to protect groundwater quality when infiltration of runoff is implemented. USEPA supports runoff infiltration and provides guidance for protection of groundwater: "With a reasonable degree of site-specific design considerations to compensate for soil characteristics, infiltration may be very effective in controlling both urban runoff quality and quantity problems. This strategy encourages infiltration of urban runoff to replace the natural infiltration capacity lost through urbanization and to use the natural filtering and sorption capacity of soils to remove pollutants; however, the potential for some types of urban runoff to contaminate groundwater through infiltration requires some restrictions."⁷¹ The restrictions placed on runoff infiltration in this Order are based on recommendations provided by the USEPA Risk Reduction Engineering Laboratory. The State Water Board found in Order WQ 2000-11 on the appeal of the Los Angeles Water Board's Standard Urban Storm Water Mitigation Plan (SUSMP) requirements that the guidance provided in the above referenced document by the USEPA Risk Reduction Engineering Laboratory is sufficient for the protection of groundwater quality from runoff infiltration. To further protect groundwater quality, the Order also includes guidance from the Los Angeles Water Board,⁷² the State of Washington,⁷³ and the State of Maryland.⁷⁴ Subsequently, the California Storm Water Quality Association (CASQA) has produced technical guidance for post-construction treatment BMPs to protect ground water quality⁷⁵.

Finding C.14. Non-storm water (dry weather) discharge from the MS4 is not considered a storm water (wet weather) discharge and therefore is not subject to regulation under the Maximum Extent Practicable (MEP) standard from CWA 402(p)(3)(B)(iii), which is explicitly for "Municipal ... *Stormwater Discharges* (emphasis added)" from the MS4. Rather, non-storm water discharges into the storm sewers, per CWA 402(p)(3)(B)(ii), are to be effectively prohibited. Such dry weather non-storm water discharges have been shown to contribute significant levels of pollutants and flow in arid, developed Southern California watersheds and are to be effectively prohibited under the CWA.

⁷¹ USEPA, 1994. Potential Groundwater Contamination from Intentional and Nonintentional Stormwater Infiltration. EPA 600 SR-94 051.

⁷² Los Angeles Water Board, 2000. Standard Urban Storm Water Mitigation Plan for Los Angeles County and Cities in Los Angeles County.

⁷³ Washington State Department of Ecology, 1999. Draft Stormwater Management in Washington State. Volume V – Runoff Treatment BMPs. Pub. No. 99-15.

⁷⁴ Maryland Department of the Environment, 1999. 2000 Maryland Stormwater Design Manual. Volume I.

⁷⁵ CASQA. The New Development and Redevelopment Handbook, 2003. Available on-line at <http://www.cabmphandbooks.org/Development.asp>

Discussion of Finding C.14.Permitting Framework

The CWA prohibits the discharge of any pollutant from a point source into waters of the United States unless the discharger of the pollutant(s) obtains a NPDES permit pursuant to CWA section 402. The discharge of storm water and/or non-storm water from an MS4 system is considered a discharge from a point source. As discussed below, however, the CWA regulates storm water and non-storm water discharges under different standards.

In 1987 the CWA was amended to include provisions that specifically concerned NPDES permitting requirements for storm water discharges from MS4 systems. Section 402(p) of the CWA regulates the discharge of storm water from a point source, the municipal separate storm sewers. Such discharges of storm water are subject to the maximum extent practicable (MEP) storm water standard and the related iterative process. The MEP standard for storm water discharges reflects Congress' recognition that the variability of flow and intensity of storm events render difficult strict compliance with water quality standards by MS4s. However, this standard was not considered applicable to non-storm water discharges, which under 402(p) are required to be effectively prohibited from entering the MS4. Clearly, if non-storm water discharges must be effectively prohibited from entering the MS4, the very next requirement (402(p)(3)(B)(iii)) requiring discharges from the MS4 be reduced to the MEP intends that the discharge of pollutants be limited to storm water. Unless exempt or authorized under a separate NPDES permit, non-storm water discharges are not authorized to enter the MS4 in the first instance and are considered to be illicit discharges.

The Federal Register further clarifies that such discharges through an MS4 are not authorized under the CWA (55 Federal Register (FR) 47995):

"Today's rule defines the term "illicit discharge" to describe any discharge through a municipal separate storm sewer system that is not composed entirely of storm water and that is not covered by an NPDES permit. Such illicit discharges are not authorized under the Clean Water Act. Section 402(p)(3)(B) requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-storm water discharges from the municipal separate storm sewer...Ultimately, such non-storm water discharges through a municipal separate storm sewer must either be removed from the system or become subject to an NPDES permit."

The federal regulations (40 CFR 122.26(d)(vi)(2)(B)) require that the municipal separate storm sewer discharger prohibit "through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer." As owners and operators of the MS4, Copermittees cannot passively receive discharges from third parties (Federal Register 68766) and thus are responsible for the discharge of any non-storm water from their MS4.

The State Water Board recently recognized in order (Order WQ 2009-0008) that “[n]either the Clean Water Act nor the federal storm water regulations define ‘non-storm water.’ ‘Illicit discharge’ is defined as any discharge to an MS4 ‘not composed entirely of storm water.’ Thus, ‘illicit discharge’ is the most nearly applicable definition of ‘non-storm water’ found in federal law and is often used interchangeably with that term.”⁷⁶ In July 2010, the court in *Los Angeles County v. State Water Resources Control Board* remanded the Los Angeles Water Board’s MS4 permit underlying Order WQ 2009-0008 for procedural reasons occurring during the permit adoption process. The court did not evaluate or rule upon the substantive findings and reasoning set forth in Order WQ 2009-0008. The State Water Board rescinded and voided Order WQ 2009-0008 to comply with the court’s order. While the San Diego Water Board may no longer cite Order WQ 2009-0008, the San Diego Water Board has independently considered whether the requirement to eliminate non-stormwater discharges is subject to the MEP standard. The San Diego Water Board concludes that the MEP standard does not apply to non-stormwater discharges for the same reasons expressed by the State Water Board.

Storm Water and Non-storm Water Definitions

By definition non-storm water is not precipitation related. 40 CFR 122.26(b)(13) states that: “Storm water means storm water runoff, snowmelt runoff, and surface runoff and drainage.” While “surface runoff and drainage” is not defined in federal law, it is related to precipitation events such as rain and/or snowmelt (see 55 FR 47995-96). The term “surface runoff and drainage” does not include all incidental flows in the MS4 system, but consists of flows relating to precipitation events as clarified by the Federal Register, USEPA’s documents and permitting, and other Regional Water Board Orders.

The Federal Register (55 FR 47995-47996) provides clarification on the distinction between storm water and non-storm water discharges, including their regulation:

“In response to the comments which requested EPA to define the term storm water broadly to include a number of classes of discharges **which are not in any way related to precipitation events, EPA believes that this rulemaking is not an appropriate forum for addressing the appropriate regulation of such non-storm water discharges**, even though some classes of non-storm water discharges may typically contain only minimal amounts of pollutants. Congress did not intend that the term storm water be used to describe any discharge that has a de minimis amount of pollutants, not did it intend for section 402(p) to be used to provide a moratorium from permitting other non-storm water discharges.”

As recently recognized by the State Water Board in a precedential decision upholding an MS4 permit modification adopted by the Los Angeles Water Board, “U.S. EPA has previously rejected the notion that ‘storm water,’ as defined at 40 Code of Federal

⁷⁶ State Water Board Order WQ-2009-0008 (*In the Matter of the Petition of County of Los Angeles and Los Angeles County Flood Control District*, adopted August 4, 2009), p. 4.

Regulations section 122.26(b)(13), includes dry weather flows. In U.S. EPA's preamble to the storm water regulations, U.S. EPA rejected an attempt to define storm water to include categories of discharges 'not in any way related to precipitation events.'⁷⁷ Thus, USEPA has made it clear that it deems discharges unrelated to precipitation events to be non-storm water discharges. 40 CFR 122.26(d)(iv)(B) itself provides specific examples of non-storm water discharges:

“...the following category of non-storm water discharges or flows shall only be addressed where such discharges are identified by the municipality as sources of pollutants to the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(20) to separate storm sewers, uncontaminated pumped groundwater,...”

USEPA also removed street wash waters from the definition of storm water, as USEPA specifically identified this discharge as being non-storm water (55 FR page 47996). Additionally, section 1.2.2.2 of USEPA's Multi-Sector General Permit for Industrial Activities (MSGP-2000) considers fire hydrant flushings, irrigation drainage, landscape watering, and foundation or footing drains to be non-storm water discharges. USEPA's September 1999 Storm Water Management Fact Sheet for Non-Storm Water Discharges to Storm Sewers states that non-storm water discharges can include discharges of process water, air conditioning condensate, non-contact cooling water, vehicle wash water, or sanitary wastes.

While these types of non-storm water discharges (or illicit discharges) may be regulated under storm water permits because as a practical matter they can enter and be discharged from the MS4 systems, they are not regulated as storm water discharges under the CWA because they are unrelated to precipitation events. As indicated above, the State Water Board's recent discussion of this issue supports the conclusion that non-storm water discharges are unrelated to precipitation events. In its Order affirming amendments to the Los Angeles County MS4 permit to implement a TMDL to control bacteria in dry weather flows, the State Water Board rejected petitioners County of Los Angeles and the Los Angeles County Flood Control District implied assertion that the definition of “storm water” contained in the federal regulations (defined as “surface run-off and drainage”) includes the run-off and drainage from non-storm events. The State Water Board notes that the challenged permit provisions do not apply to storm water flows in that they apply only during dry weather conditions as defined in the permit. In upholding the challenged order, the State Water Board notes that the Los Angeles Water Board's permit language followed USEPA's approach, referring to USEPA's rejection of attempts to define storm water to include categories of discharges “not in any way related to precipitation events.”⁷⁸

⁷⁷ State Water Board Order WQ-2009-0008 (*In the Matter of the Petition of County of Los Angeles and Los Angeles County Flood Control District*, adopted August 4, 2009), p. 7.

⁷⁸ State Water Board Order WQ-2009-0008 (*In the Matter of the Petition of County of Los Angeles and Los Angeles County Flood Control District*, adopted August 4, 2009), p. 7 (quoting 55 FR 47990, 47995).

Lastly, the San Diego Water Board and State Water Board have issued multiple, separate NPDES permits for non-storm water discharges, including, but not limited to, San Diego Water Board Order No. R9-2008-0002 (extracted groundwater), San Diego Water Board Order No. R9-2002-0020 (hydrostatic discharge), and State Water Board Order No. 2006-0008-DWQ (utility vaults), pursuant to section 402 of the CWA.

Permitting Non-storm Water Discharges

Non-storm water discharges may contain pollutants which result from various activities that occur within areas draining into the MS4. This includes, but is not limited to, illicit discharges and connections, exempted categories of discharge not a source of pollutants (40 CFR 122.26(d)), and discharges into the MS4 covered under a separate NPDES permit. As such, existing and proposed discharges of non-storm water from MS4s:

- a) Result from similar activities through the MS4 system;
- b) Are the same type of water;
- c) Require similar action levels for the protection of the Beneficial Uses of the receiving waters;
- d) Require similar monitoring;
- e) Are under the passive control of the owner and operator of the MS4 system; and
- f) Are more appropriately regulated under a general permit than individual permits.

The U.S. EPA's approach (and the San Diego Water Board's under its approved program) for non-storm water discharges from MS4s is to regulate these discharges under the existing 402 NPDES framework (FR 47995 and 48037 see below) for discharges to surface waters. The NPDES program (40 CFR 122.44(d)) utilizes discharge prohibitions and effluent limitations as regulatory mechanisms to regulate non-storm water discharges, including the use of technology and water quality-based effluent limitations. Non-numerical effluent limitations, such as BMPs for non-storm water discharges may only be authorized where numerical effluent limits are infeasible or where the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA (40 CFR 122.44(k) see below).

The Federal Register (55, page 48037) provides clarification that non-storm water discharges from the MS4 are to be regulated under section 402, not 402(p):

“Conveyances which continue to accept other “non-storm water” discharges (e.g. discharges without an NPDES permit) with the exceptions noted above (*exempted discharges that are not a source of pollutants*) do not meet the definition of municipal separate storm sewer and are not subject to 402(p)(3)(B) of the CWA unless such discharges are issued separate NPDES permits. Instead, conveyances which continue to accept non-storm water discharges

which have not been issued separate NPDES permits are subject to sections 301 and 402 of the CWA.”

This regulatory approach is consistent with the approach recently upheld by the State Water Board in a precedential order adopted on August 4, 2009. In this Order, the State Water Board rejected a challenge to amendments to the Los Angeles County MS4 permit that require compliance with receiving water limitations and discharge prohibitions for dry weather, non-storm water discharges. Petitioners there argued that the receiving water limits and discharge prohibitions for dry weather dischargers were inappropriate and that the Los Angeles Water Board should instead have regulated the discharges with the maximum extent practicable standard, through an iterative process. The State Water Board concludes that dry weather discharges, as defined in the permit and in the underlying TMDL, “are more appropriately regarded as non-storm water discharges, which the Clean Water Act requires to be effectively prohibited.”⁷⁹

As stated above, for NPDES permits under 402 of the CWA, the Code of Federal Regulations (122.44(k)) clarify that a discharger may utilize BMPs to control or abate the discharge of pollutants when:

- “(1) Authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities;
- (2) Authorized under section 402(p) of the CWA for the control of storm water discharges;
- (3) Numeric limits are infeasible; or
- (4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.”

For the last 20 years, Riverside County NPDES permits for discharges of storm water have regulated non-storm water discharges from the MS4. These permits required Copermittees (dischargers) to prohibit non-storm water discharges into (thus through and from) their MS4 systems, implement a program to prevent illicit discharges, and monitor to identify illicit discharges and exempted discharges that are a source of pollution. These measures are considered Best Management Practices (BMPs), are required to be included in NPDES permits issued under section 402(p) of the CWA, and are considered by USEPA to be an interim approach to permitting non-storm water discharges from the MS4 in accordance with section 402 of the CWA and CFR 122.44(k).

As explained in the discussion of Finding C.15., below, the Copermittees’ reliance on BMPs for the past 20 years has not resulted in compliance with applicable water quality standards. The San Diego Water Board has evaluated (in accordance with 40 CFR 122.44(d)(1)) past and existing controls (BMPs), non-storm water monitoring results, the sensitivity of the species in receiving waters (e.g. endangered species),

⁷⁹ State Water Board Order WQ-2009-0008 (*In the Matter of the Petition of County of Los Angeles and Los Angeles County Flood Control District*, adopted August 4, 2009), p. 8

and the potential for effluent dilution, and has determined that existing BMPs to control pollutants in storm water discharges are not sufficient to protect water quality standards in receiving waters and the existing requirement that Copermittees effectively prohibit all types of unauthorized non-storm water discharges into the MS4 historically results in the discharge of pollutants to the receiving waters. Thus, numeric action levels for non-storm water, dry weather, discharges from the MS4 and required actions following observed exceedances of numeric action levels have been established. For further discussion regarding the development of action levels please see Finding E.10 and discussion.

Dry weather action levels are applicable to non-storm water discharges of effluent from the MS4 system. Non-storm water effluent discharges from the MS4 are those which occur during dry weather conditions. These action levels are not applied to storm water discharges, as defined within the Order. Storm water discharges regulated by the Order are required to meet the MEP standard and related iterative process and have separate action levels.

Dry weather action levels are applicable to non-storm water discharges from the MS4 system into receiving waters. Non-storm water discharges are already required to be prohibited unless specifically exempted or covered under a separate NPDES permit. Dry weather action levels apply to non-storm water discharges of effluent from a point source into receiving waters. The MS4 is not a receiving water. Should a discharger wish to discharge a non-exempt category to the MS4 system, such discharges require a separate NPDES permit pursuant to sections 402 and 301 of the CWA. It is also infeasible to monitor and sample every discharge into the MS4, as such discharges are diffuse by nature and may vary spatially and temporally.

Finding C.15. Non-storm water discharges to the MS4 granted an influent exception [i.e. which are exempt from the effective prohibition requirement set forth in CWA section 402(p)(3)(B)(ii)] under 40 CFR 122. 26 are included within this Order. Any exempted discharges identified by Copermittees as a source of pollutants are subsequently required to be *addressed* (emphasis added) as illicit discharges through prohibition and incorporation into existing IC/ID programs. Furthermore, the USEPA contemplates that permitting agencies such as the San Diego Water Board may also identify exempted discharges as a source of pollutants required to be addressed as illicit discharges (See Vol. 55 FR 48037). The San Diego Water Board and the Copermittees have identified landscape irrigation, irrigation water and lawn water, previously exempted discharges, as a source of pollutants and conveyance of pollutants to waters of the U.S.

Discussion of Finding C.15. The FR (Vol. 55, page 48037) and 40 CFR 122.26(d)(iv)(B) clarify that certain components and categories of non-storm water discharges into the MS4 are not required to be prohibited. The Code of Federal Regulations requires the discharger have:

“...a program, including inspections, to implement through ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program shall address all types of illicit discharges, however, the following category of non-storm water discharges or flows shall only 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 groundwater infiltration (as defined at 40 CFR 35.2005(20) to separate storm sewers, uncontaminated pumped groundwater,...”

The categories of non-storm water discharges into the MS4, as listed under 40 CFR 122.26(d)(iv)(B), are not required to be prohibited unless identified by the Copermittees as sources of pollutants to waters of the United States. The FR (Vol. 55, page 48037), however, goes on to clarify that:

“However, the Director may include permit conditions that either require municipalities to prohibit or otherwise control any of these types of discharge where appropriate.”

Thus, the Copermittees or the San Diego Water Board may identify any of these categories of non-storm water discharges as a source of pollutants. As such, the identification of any of these categories as a source of pollutants requires them to be addressed as illicit discharges, which are not authorized under the CWA, and are required to be “effectively prohibited” as illicit discharges via ordinance, order or similar means. The prohibition of previously exempted discharges of non-storm water to waters of the United States from entering, and necessarily being discharged from an MS4, conforms with CWA requirements for standards and enforcement for effluent limitations necessary to meet water quality standards (33 U.S.C. 1311(b)(1)(C)).

To date the San Diego Water Board and the Copermittees have identified overspray and drainage from potable and reclaimed water landscape irrigation as a substantial source and conveyance mechanism for pollutants into waters of the United States. Several municipalities throughout the San Diego Region (e.g., cities and counties of Orange County and San Diego County) have reported and/or identified runoff originating from landscape irrigation as potential sources of dry weather flows conveying pollutants into their MS4s. This is also supported by legislation (Assembly Bill 1881) recently enacted by the State of California, which has identified runoff resulting from over irrigation not only as a waste of water resources, but also as a source of pollutants to the state’s waterways.

Irrigation runoff into the MS4, as identified by the San Diego Water Board and the Copermittees, is a source of pollutants to waters of the United States, and is required to be *addressed* (emphasis added) as an illicit discharge per 40 CFR 122.26(d)(2)(iv)(B)(1) by prohibition through implementing and enforcing an ordinance, order or similar means. The San Diego Water Board and the Copermittees have identified irrigation water as a source of pollutants and conveyance of pollutants to waters of the United States, when

applied improperly in excess and thereafter entering the MS4, in the following documents:

- The Cities and County of Riverside “Only Rain in the Storm Drain” Pollution Prevention Program identifies runoff from irrigation as a source of pollutants to waters of the United States in the following documents:

- 1) The Landscape and Garden public education brochure states:

“Soil, yard wastes, over-watering [emphasis added] and garden chemicals become part of the urban runoff mix that winds it way through streets, gutters and storm drains before entering lakes, rivers, streams, etc.”

- 2) In a survey distributed at public outreach events,⁸⁰ the answer to the question about where lawn irrigation water goes states:

“Water that leaves your lawn from irrigation...can pick up motor oil and grease from vehicles, excess fertilizer from your lawn, bacteria from pet waste, and excess pesticides from your yard. These pollutants can be carried down streets and storm drains directly to our streams, lakes and rivers without treatment!”

- In 2006, the State Water Board allocated Grant funding to the **SmartTimer/Edgescape Evaluation Program (SEEP)**. The project targets irrigation runoff by retrofitting existing development and documenting the conservation and runoff improvements. The Grant Application states that:

“Irrigation runoff contributes flow & pollutant loads to creeks and beaches that are 303(d) listed for bacteria indicators.”

Furthermore, the grant application states:

“Regional program managers agree that the reduction and/or elimination of irrigation-related urban flows and associated pollutant loads may be key to successful attainment of water quality and beneficial use goals as outlined in the San Diego Basin Plan and Bacteria TMDL over the long term.”

This is reinforced in the project descriptions and objectives:

“Elevated dry-weather storm drain flows, composed primarily ... of landscape irrigation water wasted as runoff, carry pollutants that impair recreational use and aquatic habitats all along Southern California’s

⁸⁰ A copy of the survey was provided in the Riverside County Copermittees' Report of Waste Discharge, dated January 15, 2009, page 39.

urbanized coastline. Storm drain systems carry the wasted water, along with landscape derived pollutants such as bacteria, nutrients and pesticides, to local creeks and the ocean. Given the local Mediterranean climate, excessive perennial dry season stream flows are an unnatural hydrologic pattern, causing species shifts in local riparian communities and warm, unseasonal contaminated freshwater plumes in the near-shore marine environment”.

The basis of this grant project is that over-irrigation (landscape irrigation, irrigation water and lawn watering) into the MS4 is a source and conveyance of pollutants. In addition, they indicate that this alteration of natural flows is impacting the Beneficial Uses of Waters of the State and U.S. The results of this study can be applied broadly to any area where over-irrigation takes place, including Riverside County. Preliminary results from the study indicate that that over-irrigation (landscape irrigation, irrigation water and lawn watering) into the MS4 is a source and conveyance of pollutants.

- Several municipalities in the San Diego Region have identified runoff from irrigation as a source of pollutants to waters of the United States in the following documents:

- 1) The **Watershed Action Plan Annual Report(s)** for the 2006-2007 reporting period was submitted by the County of Orange, Orange County Flood Control District and Copermittees within the San Juan Creek, Laguna Coastal Streams, Aliso Creek, and Dana Point Coastal Streams Watersheds. San Juan Creek, Laguna Coastal Streams, Aliso Creek and Dana Point Coastal Streams are all currently 303(d) listed as impaired for Indicator Bacteria within their watersheds and/or in the Pacific Ocean at the discharge points of their watersheds. The Orange County Copermittees, within their Watershed Action Strategy Table for Fecal Indicator Bacteria:

“Support programs to reduce or eliminate the discharge of anthropogenic dry weather nuisance flow throughout the [...] watershed. Dry weather flow is the transport medium for bacteria and other 303(d) constituents of concern”. Additionally, they state that “conditions in the MS4 contribute to high seasonal bacteria propagation in-pipe during warm weather. Landscape irrigation is a major contributor to dry weather flow, both as surface runoff due to over-irrigation and overspray onto pavements; and as subsurface seepage that finds its way into the MS4.”

- 2) The **Carlsbad Watershed Urban Runoff Management Program (WURMP) Fiscal Year 2008 Annual Report** was submitted by the Carlsbad Watershed Copermittees (Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista, and the County of San Diego). In the WUMRP Annual Report, the Carlsbad

Watershed Copermittees stated the following:

“The Carlsbad Watershed Management Area (WMA) collective watershed strategy identifies bacteria, sediment, and nutrients as high priority water quality pollutants in the Agua Hedionda (904.3 – bacteria and sediment), Buena Vista (904.2 – bacteria), and San Marcos Creek (904.5 – nutrients) Hydrologic Areas. Bacteria, sediment, and nutrients have been identified as potential discharges from over-irrigation.”

- 3) The **San Diego Bay Watershed Urban Runoff Management Program (WURMP) 2007-2008 Annual Report** was submitted by the San Diego Bay Watershed Copermittees (Cities of Chula Vista, Coronado, Imperial Beach, La Mesa, Lemon Grove, National City, and San Diego, the County of San Diego, the Port of San Diego, and the San Diego County Airport Authority). In Appendix D of the WURMP Annual Report, titled Likely Sources of Pollutants, the San Diego Bay Watershed Copermittees identified over-irrigation of lawns as a pollutant generating activity from business and/or residential land uses for bacteria, pesticides, and sediment.

Within the reports above, municipalities throughout San Diego and Orange counties have acknowledged that runoff from over-irrigation is a potential or likely source of several types of pollutants to waters of the United States. Because there are landscaped areas in Riverside County that receive irrigation similar to San Diego and Orange counties, runoff from over-irrigation is also a likely source of pollutants to waters of the United States in Riverside County.

- There is statewide recognition of the pollution caused by over-irrigation, and current legislation already requires cities and counties to prohibit over-irrigation. On September 28, 2006 Governor Arnold Schwarzenegger approved Assembly Bill 1881, The Water Conservation in Landscaping Act (AB 1881, Laird). The act requires cities, counties, and charter cities and charter counties, to adopt landscape water conservation ordinances by January 1, 2010. Additionally, the law required the Department of Water Resources (DWR) to prepare a Model Water Efficient Landscape Ordinance for use by local agencies. The Water Efficient Landscape Ordinance was approved by the Office of Administrative Law on September 10, 2009. All local agencies were required to adopt a water efficient landscape ordinance by January 1, 2010. Local agencies could adopt the Water Efficient Landscape Ordinance developed by DWR, or an ordinance considered at least as effective as the Model Ordinance. The Water Efficient Landscape Ordinance includes a requirement that local agencies prohibit runoff from irrigation (§ 493.2):

“(a) Local agencies shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff [emphasis added] from leaving the target landscape due to low head drainage, overspray, or other

similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures. Penalties for violation of these prohibitions shall be established locally."

- On October 08, 2009, the State of California Department of Water Resources issued a letter to all cities and counties within the State of California giving reminder of required adoption of the Water Efficient Landscape Ordinance. The letter states that:

"Other benefits include reduced irrigation runoff, reduced pollution of waterways, drought resistance, and less green waste."

- On December 18, 2009, the San Diego Water Board adopted Order No. R9-2009-0002, the fourth-term Orange County permit, which found that over-irrigation (landscape irrigation, irrigation water and lawn watering) into the MS4 is a source and conveyance of pollutants. Landscape irrigation, irrigation water, and lawn watering were categories removed from the list of non-storm water discharges not prohibited to be discharged into the MS4.

D. Runoff Management Programs

Finding D.1.a. This Order specifies requirements necessary for the Copermittees to reduce the discharge of pollutants in storm water to the MEP. However, since MEP is a dynamic performance standard, which evolves over time as runoff management knowledge increases, the Copermittees' runoff management programs must continually be assessed and modified to incorporate improved programs, control measures, best management practices (BMPs), etc. in order to achieve the evolving MEP standard. Absent evidence to the contrary, this continual assessment, revision, and improvement of runoff management program implementation is expected to ultimately achieve compliance with water quality standards in the Region.

Discussion of Finding D.1.a. Under CWA section 402(p), municipalities are required to reduce the discharge of storm water pollutants from their MS4s to the maximum extent practicable (MEP). MEP is the critical technology-based performance standard that municipalities must attain. The MEP standard is an ever-evolving, flexible, and advancing concept, which considers technical and economic feasibility. As knowledge about controlling storm water runoff continues to evolve, so does that which constitutes MEP. Reducing the discharge of storm water pollutants to the MEP requires Copermittees to assess each program component and revise activities, control measures, best management practices (BMPs), and measurable goals, as necessary to meet MEP.

To achieve the MEP standard, municipalities must employ whatever BMPs are technically feasible (i.e. are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility. Reducing storm water 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:

1. Effectiveness: Will the BMPs address a pollutant (or pollutant source) of concern?
2. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?
3. Public Acceptance: Does the BMP have public support?
4. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?
5. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc?

If a municipality reviews a lengthy menu of BMPs and chooses to select only a few of the least expensive BMPs, 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 is prohibitive, 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 based 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 easily dismissed. In any case, the burden is on the municipal discharger to comply with its permit. After selecting BMPs, it is the responsibility of the discharger to ensure that all BMPs are implemented.⁸¹

A definition of MEP is not provided in either the federal statute or in the federal regulations. The final determination regarding whether a municipality has reduced storm water pollutants to the MEP can only be made by the San Diego Water Board or the State Water Board, and not by the municipal discharger. While the San Diego Water Board or the State Water Board ultimately define MEP, it is the responsibility of the Copermittees to initially propose actions that implement BMPs to reduce storm water pollution to the MEP. In other words, the Copermittees' runoff management programs to be developed under the Order are the Copermittees' proposals of MEP. Their total collective and individual activities conducted pursuant to their runoff management programs become their proposal for MEP as it applies both to their overall effort, as well as to specific activities. The Order provides a minimum framework to guide the Copermittees in meeting the MEP standard for storm water.

It is the San Diego Water Board's responsibility to evaluate the proposed programs and specific BMPs to determine what constitutes MEP, using the above guidance and the court's 1994 decision in NRDC v. California Department of Transportation, Federal District Court, Central District of California. The federal court stated that a Copermittee must evaluate and implement BMPs except where (1) other effective BMPs will achieve greater or substantially similar pollution control benefits; (2) the BMP is not technically feasible; or (3) the cost of BMP implementation greatly outweighs the pollution control benefits. In the absence of a proposal acceptable to the San Diego Water Board, the San Diego Water Board will define MEP by requiring implementation of additional measures by the Copermittees.

The Copermittees' continual evolution in meeting the MEP standard is expected to achieve compliance with water quality standards. USEPA has consistently supported this expectation. In its Interim Permitting Approach for Water Quality-Based Effluent Limitations (WQBELs) in Storm Water Permits, USEPA states "the interim permitting approach uses best management practices (BMPs) in first-round storm water permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for attainment of water quality standards."⁸² USEPA reiterated its position in 1999, when it stated regarding the Phase II municipal storm water regulations that "successive iterations of the mix of BMPs and measurable goals will be driven by the objective of assuring maintenance of water quality standards" and "EPA anticipates

⁸¹ State Water Board, 1993. Memo Entitled Definition of Maximum Extent Practicable.

⁸² Federal Register / Vol. 61, No. 166 / August 26, 1996 / P. 43761.

that a permit for a regulated small MS4 operator implementing BMPs to satisfy the six minimum control measures will be sufficiently stringent to protect water quality, including water quality standards [...].”⁸³

The requirements of the Order are expected to achieve compliance with receiving water quality standards. The approach to be used is the continual assessment, revision, and improvement of Copermittee best management practice implementation. This approach is consistent with the CWA and State Water Board guidance. In *Defenders of Wildlife v. Browner* (1999, 197 F. 3d 1035), the United States Court of Appeals for the Ninth Circuit states: “Under 33 U.S.C. section 1342 (p)(3)(B)(iii), the EPA’s choice to include either management practices or numeric limitations in the permits was within its discretion.” In addition, the approach is consistent with State Water Board Order WQ 99-05, which outlines an iterative approach for achieving compliance with water quality standards.

Finding D.1.b. The Copermittees have generally been implementing the Jurisdictional Runoff Management Programs (JRMPS) required pursuant to Order No. R9-2004-001 since July 14, 2005. Prior to that, the Copermittees were regulated by Order No. 98-02 since May 13, 1998. MS4 discharges, however, continue to cause or contribute to violations of water quality standards as evidenced by the Copermittees’ monitoring results.⁸⁴

Discussion of Finding D.1.b. In response to Order No. R9-2004-001, the Copermittees have developed their runoff management programs. In order to implement the plans, the Copermittees have, among other things, developed BMP requirements, improved inter- and intra-governmental coordination, improved training programs, improved illicit discharge detection procedures, and improved their monitoring efforts. Although the programmatic improvements have led to better implementation of BMPs, the Copermittees’ monitoring data demonstrate that additional or revised BMPs are necessary to prevent discharges from MS4s from causing and contributing to violations of water quality standards. A discussion of data collected by the Copermittees is included in the discussion for Finding C.9.

Finding D.1.c. This Order contains new or modified requirements that are necessary to improve Copermittees’ efforts to reduce the discharge of pollutants in storm water runoff to the MEP and achieve water quality standards. Some of the new or modified requirements, such as the revised Watershed Water Quality Workplan (Watershed Workplan) section, are designed to specifically address these high priority water quality problems. Other requirements, such as for unpaved roads, are a result of San Diego Water Board’s identification of water quality problems through investigations and complaints during the previous permit period. Other new or modified requirements address program deficiencies that have been noted during audits, report reviews, and other San Diego Water Board compliance assessment activities.

⁸³ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68753-68754.

⁸⁴ County of Riverside, 2009. Riverside County Municipal Copermittees 2008-09 Annual Storm Water Program Report, Section 11..

Additional changes in the monitoring program provide consistency with the Code of Federal Regulations, USEPA guidance, State Water Board guidance, and the Southern California Monitoring Coalition recommendations.

Discussion of Finding D.1.c. The Copermittees are required to update and expand their runoff management programs on jurisdictional and watershed levels in order to improve their efforts to reduce the contribution of storm water pollutants in runoff to the MEP and meet water quality standards. Changes to Order No. R9-2004-001's requirements have been made to help ensure these two standards are achieved by the Copermittees.

The Orders' jurisdictional requirements have changed based on findings by the San Diego Water Board during typical compliance assurance activities, audits, or receipt of complaints.⁸⁵ Where the audits found common implementation problems, requirements have been altered to better ensure compliance. In addition, the San Diego Water Board conducted reviews of the jurisdictional annual reports submitted by the Copermittees. Updates to the requirements for the Copermittees' programs are also based in part on information found in the Copermittees' ROWD,⁸⁶ requirements that were included in the San Diego and Orange County MS4 permits, and discussions with the Riverside County Copermittees.

To better focus on attainment of water quality standards, the Order's jurisdictional and watershed requirements have been improved. The conditions of the receiving waters now drive management actions, which in turn focus diminishing resources on the highest priority water quality problems within the receiving waters in the watershed. Improvements to jurisdictional and watershed requirements were also made to facilitate a mutually clear understanding of the requirements between the San Diego Water Board and Copermittees.

During the previous permit period, the San Diego Water Board identified, through investigations and complaints, sediment discharges from unpaved roads as a significant source of water quality problems in the Riverside County portion of the San Diego Region. Enforcement and inspection activities conducted by the San Diego Water Board during the previous permit term have found a lack of source control for many unpaved roads within the jurisdiction of the Copermittees. Unpaved roads are a source of sediment that can be discharged in runoff to receiving waters, especially during storm events. Erosion of unpaved roadways occurs when soil particles are loosened and carried away from the roadway base, ditch, or road bank by water, wind, traffic, or other transport means. Exposed soils, high runoff velocities and volumes, sandy or silty soil types, and poor compaction increase the potential for erosion.

Road construction, culvert installation, and other maintenance activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff

⁸⁵ Audit reports, report reviews, and inspection reports are available for review at the San Diego Water Board office.

⁸⁶ All significant changes made to the Order's requirements are described and explained in detail in Fact Sheet section IX.

and thereby erosion and the release of sediment. Poorly designed roads can act as preferential drainage pathways that carry runoff and sediment into natural streams, impacting water quality. In addition, other public works activities along unpaved roads have the potential to significantly affect sediment discharge and transport within streams and other waterways, which can degrade the beneficial uses of those waterways.

USEPA also recognizes that discharges from unpaved roads are a threat to water quality. USEPA guidance⁸⁷ emphasizes the threat of unpaved roads to water quality:

“Dirt and gravel roads are a major potential source of these pollutants [sediment] and pollutants that bind to sediment such as oils, nutrients, pesticides, herbicides, and other toxic substances]. Many roads have unstable surfaces and bases. Roads act like dams, concentrating flows that accelerate erosion of road materials and roadsides. Both unstable surfaces and accelerated erosion then lead to sediment and dust.”

There are several guidance documents, developed by the USEPA,⁸⁸ the US Forest Service,⁸⁹ the University of California,⁹⁰ and others, that include design and construction specifications and BMPs that are readily available for implementation by private and public entities. Implementing design and other source control BMPs for unpaved roads in the region is necessary to reduce and minimize the impacts of sediment discharged during storm events from unpaved roads to the MS4s and receiving waters.

Finding D.1.d. Updated individual Storm Water Management Plans (individual SWMPs or JRMPs) and Watershed Stormwater Management Plans (watershed SWMPs or Watershed Workplans), which, together with references in the DAMP, describe the Copermittees' runoff management programs in their entirety, are needed to guide the Copermittees' runoff management efforts and aid the Copermittees in tracking runoff management program implementation. Hereinafter, the individual SWMP is referred to as the JRMPs and the Watershed SWMP is referred to as the Watershed Workplan. It is practicable for the Copermittees to update the JRMPs and Watershed Workplans within the timeframe specified in this Order, since significant efforts to develop these programs have already occurred.

Discussion of Finding D.1.d. Development of runoff management plans is a crucial runoff management measure and should be considered a BMP. The plans help organize and focus the Copermittees' programs and guide their implementation. In its statewide assessment report to USEPA Region IX and the State Water Board, Tetra

⁸⁷ USEPA 2006 “Environmentally Sensitive Maintenance for Dirt and Gravel Roads.” Gesford and Anderson, USEPA-PA-2005.

⁸⁸ Ibid.

⁸⁹ US Forest Service, 1996. Forest Service Specifications for Construction of Roads & Bridges. EM-7720-100. Revised August 1996.

⁹⁰ University of California Division of Agriculture and Natural Resources, 2007. Rural Roads: A Construction and Maintenance Guide of California Landowners. Publication 8262.

Tetra Tech, Inc. concluded that the lack of a master storm water planning document must be considered a serious program deficiency⁹¹. When submitted to the San Diego Water Board, the plans provide useful correspondence between the Copermittees and the San Diego Water Board. The Plans also become available for review by the public, and thus facilitate public participation in runoff management decisions. Finally, while development and submittal of runoff management plans are not necessary to ensure compliance of the Copermittees' runoff management programs with the Order, the San Diego Water Board is provided with a means to track Copermittee implementation.

The focus of the Order is on development and implementation of storm water programs which meet MEP, rather than creation of Copermittee plans which exhibit MEP. While the Order does not rely upon the plans to ensure MEP and other standards are achieved, the plans still serve a useful purpose. As stated above, the plans serve to organize the Copermittees' efforts to address runoff. As a practical matter, any program of the size required by the Order should be documented in writing. This serves to guide implementation of the program by the numerous individuals responsible for program implementation.

Runoff management plans are not necessary for ensuring compliance with the Order because the Order itself contains sufficient detailed requirements to ensure that compliance with discharge prohibitions, receiving water limitations, and the narrative standard of MEP for storm water are achieved. Implementation by the Copermittees of programs in compliance with the Order's requirements, prohibitions, and receiving water limitations is the pertinent compliance standard to be used under the Order, as opposed to assessing compliance by reviewing the Copermittees' implementation of their plans alone. The San Diego Water Board ensures compliance with the Order by reviewing annual reports, conducting inspections, performing audits, and through other general program oversight.

Runoff management plans are particularly important and useful for municipalities when program implementation is spread across several departments and/or when municipalities experience staff turnover.⁹² Each Copermittee relies on multiple employees or contractors for program implementation, but the spread of responsibility varies among Copermittees.⁹³ Written jurisdictional plans ensure appropriate coordination within each municipality.

Copermittees' runoff management plans are simply descriptions of their runoff management programs required under the Order. These plans serve as procedural correspondence which guides program implementation and aids the Copermittees and San Diego Water Board in tracking implementation of the programs. In this manner,

⁹¹ Tetra Tech, Inc. 2006. *Assessment Report on Tetra Tech's Support of California's MS4 Stormwater Program*. Produced for USEPA Region IX and the California State and Regional Water Quality Control Boards.

⁹² Tetra Tech, Inc. 2005. *Program Evaluation Report*. Orange County Storm Water Program: Cities of Laguna Beach, Laguna Hills, Lake Forest, and Rancho Santa Margarita.

⁹³ Responsible departments and employees are described in the 2005-06 Annual Reports for the MS4 programs.

the plans are not functional equivalents of the Order. For these reasons, the Copermittees' runoff management plans need not be an enforceable part of the Order.

The Copermittees' plans and programs can be updated on or before June 30, 2012 because much of their plans and programs are already in existence. In fact, many parts of their plans and programs have been in place for 15 years. Moreover, the adoption of Order No. R9-2004-001 required a larger scale reorganization of the Copermittees' programs than Order No. R9-2010-0016, but also only allowed one year for program updates. The Copermittees were generally able to meet the time schedule required under Order No. R9-2004-001. After discussions with the Copermittees, based on the timing of the adoption of the Order and the Copermittee's fiscal planning cycles, in conjunction with consideration for the current economic conditions, the San Diego Water Board agreed that additional time to update the Copermittees' plans and programs may be warranted. Thus, the Copermittees must update their plans and programs on or before June 30, 2012, which provides the Copermittees over 18 months, instead of 1 year, to update their plans and programs.

Finding D.1.e. Pollutants can be effectively reduced in storm water runoff by the application of a combination of pollution prevention, source control, and treatment control BMPs. Pollution prevention is the reduction or elimination of pollutant generation at its source and is the best "first line of defense". Source control BMPs (both structural and non-structural) minimize the contact between pollutants and flows (e.g., rerouting run-on around pollutant sources or keeping pollutants on-site and out of receiving waters). Treatment control BMPs remove pollutants that have been mobilized by wet-weather or dry-weather flows.

Discussion of Finding D.1.e. The State Water Board finds in its Order WQ 98-01 that BMPs are effective in reducing pollutants in storm water runoff, stating that "implementation of BMPs [is] generally the most appropriate form of effluent limitations when designed to satisfy technology requirements, including reduction of pollutants to the maximum extent practicable." A State Water Board TAC further supports this finding by recommending "that nonpoint source pollution control can be accomplished most effectively by giving priority to [BMPs] in the following order:

1. Pollution Prevention – implementation of practices that use or promote pollution free alternatives;
2. Source Control – implementation of control measures that focus on preventing or minimizing urban runoff from contacting pollution sources;
3. Treatment Control – implementation of practices that require treatment of polluted runoff either onsite or offsite."⁹⁴

Pollution prevention, the reduction or elimination of pollutant generation at its source, is an essential aspect of BMP implementation. Fewer pollutants are available to be washed from developed areas when the generation of pollutants by activities is limited.

⁹⁴ State Water Board, 1994. Urban Runoff Technical Advisory Committee Report and Recommendations. Nonpoint Source Management Program.

Thus, pollutant loads in storm water discharges are reduced from these areas. In addition, there is no need to control or treat pollutants that are never generated. Furthermore, pollution prevention BMPs are generally more cost effective than removal of pollutants by treatment facilities or cleanup of contaminated media.^{95,96}

In the Pollution Prevention Act of 1990, Congress established a national policy that emphasizes pollution prevention over control and treatment. CWC section 13263.3(a) also supports pollution prevention, stating "The Legislature finds and declares that pollution prevention should be the first step in a hierarchy for reducing pollution and managing wastes, and to achieve environmental stewardship for society. The Legislature also finds and declares that pollution prevention is necessary to support the federal goal of zero discharge of pollutants into navigable waters." Finally, the Basin Plan also supports this finding by stating "To eliminate pollutants in storm water, one can either clean it up by removing pollutants or prevent it from becoming polluted in the first place. Because of the overwhelming volume of storm water and the enormous costs associated with pollutant removal, pollution prevention is the only approach that makes sense."⁹⁷

USEPA also supports the utilization of a combination of BMPs to address pollutants in runoff. For example, USEPA has found there has been success in addressing illicit discharge related problems through BMP initiatives like storm drain stenciling and recycling programs, including household hazardous waste special collection days.⁹⁸ Structural BMP performance data has also been compiled and summarized by USEPA.⁹⁹

The summary provides the performance ranges of various types of structural BMPs for removing suspended solids, nutrients, pathogens, and metals from storm water flows. These pollutants are generally a concern in storm water in the San Diego Region and Riverside County. For suspended solids, the least effective structural BMP type was found to remove 30-65 percent of the pollutant load, while the most effective was found to remove 65-100 percent of the pollutant load. For nutrients, the least effective structural BMP type was found to remove 15-45 percent of the pollutant load, while the most effective was found to remove 65-100 percent of the pollutant load. For pathogens, the least effective structural BMP type was found to remove <30 percent of the pollutant load, while the most effective was found to remove 65-100 percent of the pollutant load. For metals, the least effective structural BMP type was found to

⁹⁵ Deviny, J.S. et al. 2004. *Alternative Approaches to Stormwater Quality Control*. Prepared for the Los Angeles Regional Water Quality Control Board. Found as Appendix H to *NPDES Stormwater Cost Survey*. Prepared for the California State Water Resources Control Board by the Office of Water Programs California State University, Sacramento. Available on-line at: <http://www.owp.csus.edu/research/npdes/>

⁹⁶ Schueler, T.R., 2000. Center for Watershed Protection. Assessing the Potential for Urban Watershed Restoration, Article 142.

⁹⁷ San Diego Water Board, 1994. Water Quality Control Plan, San Diego Basin, Region 9.

⁹⁸ USEPA, 1999. 40 CFR Parts 9, 122, 123, and 124 National Pollutant Discharge Elimination System-Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges. 64 FR 68728.

⁹⁹ USEPA, 1999. Preliminary Data Summary of Urban Storm Water Best Management Practices. EPA 821-R-99-012.

remove 15-45 percent of the pollutant load, while the most effective was found to remove 65-100 percent of the pollutant load.

It is important to note that the CWA and NPDES federal regulations clearly require control of discharges into the MS4. CWA section 402(p)(3)(B)(ii) states that MS4 permits must "prohibit non-storm water discharges into the storm sewers." 40 CFR 122.26(d)(2)(iv)(B) requires Copermitees to "detect and remove [...] illicit discharges and improper disposal into the storm sewer." See Finding C.14 and Discussion.

The Order's approach to regulating discharges into and from the MS4 is in accordance with State Water Board Order WQ 2001-15. In that order, the State Water Board reviewed the San Diego County permit (Order No. 2001-01) requirements and made one change to one prohibition.¹⁰⁰ The Order upheld all other requirements of the current permit. Order No. R9-2010-0016 incorporates the one change made by the State Water Board, and continues the approach of Order No. 2001-01 (the basis for the current permit), as it was upheld by the State Water Board in Order WQ 2001-15. State Water Board Order WQ 2001-15 supports such requirements, stating: "It is important to emphasize that dischargers into MS4s continue to be required to implement a full range of BMPs, including source control."

The Court of Appeals, Fourth Appellate District, found that the current permit's approach to regulation of discharges into the MS4 was appropriate. Since the Order utilizes the same approach, the court decision supports the Order's requirements.

Finding D.1.f. Runoff needs to be addressed during the three major phases of urban development (planning, construction, and use) in order to reduce the discharge of storm water pollutants to the MEP, effectively prohibit non-storm water discharges and protect receiving waters. Development which is not guided by water quality planning policies and principles can unnecessarily result in increased pollutant load discharges, flow rates, and flow durations which can negatively impact receiving water beneficial uses. Construction sites without adequate BMP implementation result in sediment runoff rates which greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. Existing development generates substantial pollutant loads which are discharged in runoff to receiving waters.

Discussion of Finding D.1.f. MS4 permits are issued to municipalities because of their land use authority. The ultimate responsibility for the pollutant discharges, increased runoff, and inevitable long-term water quality degradation that results from development lies with local governments. This responsibility is based on the fact that it is the local governments that have authorized the development (i.e. conversion of natural pervious ground cover to impervious surfaces) and the land uses that generate the pollutants and runoff. Furthermore, the MS4 through which the pollutants and

¹⁰⁰ The State Water Board removed the prohibition of discharges *into* the MS4 that cause or contribute to exceedances of water quality objectives. The revision allows for treatment of storm water flows once the pollutants have entered the MS4. It does not affect the effective prohibition on certain dry-weather flows into the MS4 that is required by the Clean Water Act.

increased flows are conveyed, and ultimately discharged into natural receiving waters, are owned and operated by the same local governments. In summary, the Copermittees under the Order are responsible for discharges into and out of their MS4s because (1) they own and operate the MS4; and (2) they have the legal authority that authorizes the very development and land uses with generate the pollutants and increased flows in the first place.

For example, since grading cannot commence prior to the issuance of a local grading permit, the Copermittees have a built-in mechanism to ensure that all grading activities are protective of receiving water quality. The Copermittee has the authority to withhold issuance of the grading permit until the project proponent has demonstrated to the satisfaction of the Copermittee that the project will not violate their ordinances or cause the Copermittee to be in violation of its MS4 permit. Since the Copermittee will ultimately be held responsible for any discharges from the grading project by the San Diego Water Board, the Copermittee will want to use its own permitting authority to ensure that whatever measures the Copermittee deems necessary to protect discharges into its MS4 are in fact taken by the project proponent.

The Order holds the local government accountable for this direct link between its land use decisions and water quality degradation. The Order recognizes that each of the three major stages in the development process (development planning, construction, and the use or operational stage) are controlled by and must be authorized by the local government. Accordingly, this permit requires the local government to implement, or require others to implement, appropriate best management practices to reduce storm water pollutant discharges and increased flow during each of the three stages of development.

Including plans for BMP implementation during the design phase of new development and redevelopment offers the most cost effective strategy to reduce storm water runoff pollutant loads to surface waters.¹⁰¹ The Phase II regulations for small municipalities reflect the necessity of addressing runoff during the early planning phase. Due to the greater water quality concerns generally experienced by larger municipalities, Phase II requirements for small municipalities are also applicable to larger municipalities such as the Copermittees. The Phase II regulations direct municipalities to develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale. The program must ensure that controls are in place that would prevent or minimize water quality impacts. This includes developing and implementing strategies which include a combination of structural and/or non-structural BMPs appropriate to the locality. The program must also ensure the adequate long-term operation and maintenance of BMPs.¹⁰² USEPA expands on the Phase II regulations for urban development when it recommends that Copermittees:

¹⁰¹ USEPA, 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

¹⁰² USEPA, 1999. 40 CFR 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. 64 FR 68845.

“Adopt a planning process that identifies the municipality’s program goals (e.g., minimize water quality impacts resulting from post-construction runoff from new development and redevelopment), implementation strategies (e.g., adopt a combination of structural and/or non-structural BMPs), operation and maintenance policies and procedures, and enforcement procedures. In developing your program, you should consider assessing existing ordinances, policies, programs and studies that address storm water runoff quality.”

Management of storm water runoff during the construction phase is also essential. USEPA explains in the preamble to the Phase II regulations that storm water discharges generated during construction activities can cause an array of physical, chemical, and biological water quality impacts. Specifically, the biological, chemical and physical integrity of the waters may become severely compromised due to runoff from construction sites. Fine sediment from construction sites can adversely affect aquatic ecosystems by reducing light penetration, impeding sight-feeding, smothering benthic organisms, abrading gills and other sensitive structures, reducing habitat by clogging interstitial spaces within the streambed, and reducing intergravel dissolved oxygen by reducing the permeability of the bed material. Water quality impairment also results, in part, because a number of pollutants are preferentially absorbed onto mineral or organic particles found in fine sediment. The interconnected process of erosion (detachment of the soil particles), sediment transport, and delivery is the primary pathway for introducing key pollutants, such as nutrients, metals, and organic compounds into aquatic systems.¹⁰³

Finally, storm water and non-storm water runoff from existing development must be addressed. The Copermittees’ monitoring data exhibits that significant water quality problems exist in receiving waters which receive runoff from areas with extensive existing development, such as Aliso Creek. Source identification, BMP requirements, inspections, and enforcement are all important measures which can be implemented to address runoff from existing development. USEPA supports inspections and enforcement by municipalities when it states “Effective inspection and enforcement requires [...] penalties to deter infractions and intervention by the municipal authority to correct violations. Enforcement mechanisms [...] also must be described.”¹⁰⁴

Finding D.1.g. Annual reporting requirements included in this Order are necessary to meet federal requirements and to evaluate the effectiveness and compliance of the Copermittees’ programs.

¹⁰³ Ibid., 64 FR 68728.

¹⁰⁴ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA 833-B-92-002.

Discussion of Finding D.1.g. The annual reporting requirements are consistent with federal NPDES regulation 40 CFR 122.41, which states:

“The operator of a large or medium municipal separate storm sewer system of a municipal separate storm sewer system that has been designated by the Director under section 122.26(a)(1)(v) of this part must submit an annual report by the anniversary of the date of the issuance of the permit for such a system. The report shall include: (1) The status of implementing the components of the storm water management program that are established as permit conditions; (2) Proposed changes to the storm water management program that are established as permit condition, Such proposed changes shall be consistent with § 122.26(d)(2)iii) of this part; (3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under § 122.26(d)(2)iv) and (d)(2)(v) of this part; (4) A summary of data, including monitoring data, that is accumulated throughout the reporting year; (5) Annual expenditures and budget for year following each annual report; (6) A summary describing the number and nature of enforcement actions, inspections, and public education programs; and (7) Identification of water quality improvements or degradation.”

CWC section 13267 provides that “the regional board may require that any person who has discharged [...] shall furnish, under penalty of perjury, technical or monitoring reports which the regional board requires.”

The San Diego Water Board must assess the reports to ensure that the Copermittees’ programs are adequate to assess and address water quality. The reporting requirements can also be useful tools for the Copermittees to review, update, or revise their programs. Areas or issues which have received insufficient efforts can also be identified and improved.

Finding D.1.h. This Order establishes Storm Water Action Levels (SALs) for selected pollutants based on USEPA Rain Zone 6 (arid southwest) Phase I MS4 monitoring data for pollutants in storm water. The SALs were computed as the 90th percentile of the data set, utilizing the statistical based population approach, one of three approaches recommended by the State Water Board’s Storm Water Panel in its report, ‘The Feasibility of Numerical Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities (June 2006). SALs are identified in section D of this Order. Copermittees must implement a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water from the permitted areas so as not to exceed the SALs. Exceedance of SALs may indicate inadequacy of programmatic measures and BMPs required in this Order.

Discussion of Finding D.1.h. Section 402(p) of the CWA states MS4 permits for storm water shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. This includes requiring numeric effluent limitations for storm water.

SALs are not numeric effluent limitations, which is reflected in language which clarifies an excursion above a SAL does not create a presumption that MEP is not being met. Instead, a SAL exceedance is to be used by the Copermittee as an indication that the MS4 storm water discharge point is a definitive "bad actor," and the result from the monitoring needs to be considered as part of the iterative process for reducing pollutants in storm water to the MEP.

The CWA defines effluent limitations as:

"Any restriction imposed by the Director on quantities, discharge rates, and concentrations of pollutants which are "discharged" from "point sources" into "waters of the United States"..." A SAL is not a restriction on a quantity, rate or concentration, but is a level at which actions that further reduce pollutants from that discharge point need to be evaluated in order to reduce storm water pollutants to the MEP. Thus, SALs are not effluent limitations as defined by the CWC or CWA.

The approach of using "action levels" is consistent with recommendations made by USEPA in their Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits, dated August 26, 1996:

"Under the Clean Water Act (CWA) and NPDES regulations, permitting authorities may employ a variety of conditions and limitations in storm water permits, including best management practices, performance objectives, narrative conditions, monitoring triggers, action levels (e.g., monitoring benchmarks, toxicity reduction evaluation action levels), etc., as the necessary water-quality based limitations, where numeric water quality based effluent limitations are determined to be unnecessary or infeasible". As such, these action levels are not considered numeric water quality-based effluent limitations.

It should be noted that a purpose of monitoring, required under this and previous Orders, is to aid in the evaluation of implemented programs and BMPs in reducing pollutants in storm water discharges to the MEP. The Monitoring and Reporting Program states:

This Receiving Waters Monitoring and Reporting Program is intended to meet the following goals:

2. Measure and improve the effectiveness of the Copermittees' runoff management programs;
3. Assess the chemical, physical, and biological impacts to receiving waters resulting from MS4 discharges;
4. Characterize storm water discharges;
5. Identify sources of specific pollutants;
6. Prioritize drainage and sub-drainage areas that need management actions; and
9. Provide information to implement required BMP improvements.

Since the first permit (adopted 20 years ago), Copermittees have utilized non-numerical limitations (BMPs) to control and abate the discharge of any pollutants in storm water discharges to the MEP. Copermittees have been accorded 20 years to research, develop, and deploy BMPs that are capable of reducing storm water discharges from the MS4 to levels represented in SALs. Storm Water Action Levels are set at such a level that any exceedance of a SAL will clearly indicate BMPs being implemented are insufficient to protect the Beneficial Uses of waters of the State. Copermittee shall utilize the exceedance information as a high priority consideration when adjusting and executing annual work plans, as required by this Permit. Failure to appropriately consider and react to SAL exceedances in an iterative manner creates a presumption that the Copermittee(s) have not complied to the MEP.

SALs have been developed utilizing Phase I storm water effluent data (updated February 2008, <http://rpitt.eng.ua.edu/Research/ms4/mainms4.shtml>) from the arid west region (USEPA Rain Zone 6). USEPA Rainfall Zone 6, which includes MS4 effluent data from Orange, San Diego, Los Angeles, Ventura and San Bernadino County. The approach taken to derive SALs is a straightforward percentile approach, with the SAL being set as the 90th percentile of the dataset for each constituent. This approach is consistent with the 2006 State Water Board Panel Report:

"The statistically based population approach would once again rely on the average distribution of measured water quality values developed from many water quality samples taken for many events at many locations. In this case, however, the Action Level would be defined by the central tendency and variance estimates from the population data. For example, the Action Level could be set as two standard deviations above the mean, i.e. if measured concentrations are consistently higher than two standard deviations above the mean, an Action Level would be triggered. Other population based measures of central tendency could be used (i.e. geometric mean, median, etc.) or estimates of variance (i.e. prediction intervals, etc.). Regardless of which population based estimators are used (or percentile from above), the idea would be to identify the [statistically derived] point at which managers feel concentrations are significantly beyond the norm."

SALs are measurable criteria which quantify the performance of BMPs for a particular watershed or subwatershed that discharges storm water MS4 effluent from that particular discharge point. Thus, Copermittees can utilize SAL results to determine the effectiveness BMPs on the effluent from a particular area of the MS4.

SALs represent the lowest 10 percent of pollutant reduction for USEPA Rain Zone 6 MS4 Phase I programs discharging to waters of the United States. For the past 20 years, Copermittees have utilized non-numerical limitations (BMPs) to control and abate the discharge of any pollutants in storm water discharges to the MEP. Copermittees have been accorded 20 years to research, develop, and deploy BMPs that are capable of reducing storm water discharges from the MS4 to levels represented in SALs. Storm Water Action Levels are set at such a level that any exceedance of a SAL will indicate to the Copermittee(s) that the discharge is within the lowest 10% of monitored outfalls. Therefore, an exceedance of a SAL warrants priority consideration within the Copermittee iterative process.

Finding D.2.a. The Standard Storm Water Mitigation Plan (SSMP) requirements contained in this Order are consistent with Order WQ 2000-11 adopted by the State Water Board on October 5, 2000. In the precedential order, the State Water Board found that the design standards, which essentially require that runoff generated by 85 percent of storm events from specific development categories be infiltrated or treated, reflect the MEP standard. The order also found that the SSMP requirements are appropriately applied to the majority of the Priority Development Project categories that are also contained in section F.1 of this Order. The State Water Board also gave California Regional Water Quality Control Boards (Regional Water Boards) the needed discretion to include additional categories and locations, such as retail gasoline outlets (RGOs), in SSMPs.

Discussion of Finding D.2.a. The post-construction requirements and design standards contained in the SSMP section of Order No. R9-2010-0016 constitute MEP consistent with State Water Board guidance, court decisions, and San Diego Water Board requirements. The State Water Board and San Diego Water Board have made several recent decisions in regards to inclusion of SSMP requirements in MS4 permits. In a precedential decision, State Water Board Order WQ 2000-11, the State Water Board found that the SSMP provisions constitute MEP for addressing storm water pollutant discharges resulting from Priority Development Projects. The provisions of the SSMP section of the Order are also consistent with those previously issued by the San Diego Water Board for Riverside County (Order No. R9-2004-001), Southern Orange County (Order Nos. R9-2002-0001 and R9-2009-0002) and San Diego County (Order Nos. R9-2001-01 and R9-2007-0001), as well as requirements in the Los Angeles County MS4 permit (Order No. R4-2001-182). In State Water Board Order WQ 2001-15, the State Water Board reaffirmed that SSMP requirements constitute MEP. Moreover, the SSMP requirements of the San Diego County MS4 permit (Order No. R9-2001-01) were upheld when the California State Supreme Court declined to hear the matter on appeal.

Finding D.2.b. Controlling runoff pollution by using a combination of onsite source control and site design BMPs augmented with treatment control BMPs before the runoff enters the MS4 is important for the following reasons: (1) Many end-of-pipe BMPs (such as diversion to the sanitary sewer) are typically ineffective during significant storm events; (2) Whereas, onsite source control BMPs can be applied during all runoff conditions end-of-pipe BMPs are often incapable of capturing and treating the wide range of pollutants which can be generated on a sub-watershed scale; (3) End-of-pipe BMPs are more effective when used as polishing BMPs, rather than the sole BMP to be implemented; (4) End-of-pipe BMPs do not protect the quality or beneficial uses of receiving waters between the pollutant source and the BMP; and (5) Offsite end-of-pipe BMPs do not aid in the effort to educate the public regarding sources of pollution and their prevention.

Discussion of Finding D.2.b. Many end-of-pipe BMPs are designed for low flow conditions because their end-of-pipe location prevents them from being designed for large storm events. This results in the end-of-pipe BMPs being overwhelmed, bypassed, or ineffective during larger storm events more frequently than onsite BMPs designed for larger storms. BMPs are also frequently most effective for a particular type of pollutant (such as sediment). Such BMPs may be appropriate for small sites with a limited suite of pollutants generated; however, end-of-pipe BMPs must typically be able to address a wide range of pollutants generated by a sub-watershed, limiting their effectiveness and/or increasing costs. Moreover, the location of some end-of-pipe BMPs allow for untreated pollutants to be discharged to and degrade receiving waters prior to their reaching the BMPs. This fails to protect receiving waters, which is the purpose of BMP implementation. In addition, opportunities to educate the public regarding runoff pollution can be lost when end-of-pipe BMPs are located away from pollutant sources and out of sight. Onsite BMPs can lead to a better public understanding of runoff issues since their presence can provide a visible and/or tangible lesson in pollution prevention.

Finding D.2.c. Use of Low-Impact Development (LID) site design BMPs at new development, redevelopment and retrofit projects can be an effective means for minimizing the impact of storm water runoff discharges from the development projects on receiving waters. LID is a site design strategy with a goal of maintaining or replicating the pre-development hydrologic regime through the use of design techniques. LID site design BMPs help preserve and restore the natural hydrologic cycle of the site, allowing for filtration and infiltration which can greatly reduce the volume, peak flow rate, velocity, and pollutant loads of storm water runoff. Current runoff management, knowledge, practices and technology have resulted in the use of LID BMPs as an acceptable means of meeting the storm water MEP standard.

Discussion of Finding D.2.c. The CWA is the cornerstone of surface water quality protection in the United States. (The Act does not deal directly with ground water or with water quantity issues.) The statute employs a variety of regulatory and nonregulatory tools to sharply reduce direct pollutant discharges into waterways, and manage polluted runoff. These tools are employed to achieve the broader goal of

restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support the protection and propagation of fish, shellfish, wildlife and recreation in and on the water.

Increasing the volume, velocity, frequency and discharge duration of storm water runoff from developed areas will eventually greatly accelerate downstream erosion, impair stream habitat in natural drainages, and negatively impact beneficial uses. Development and urbanization increase pollutant loads and volume while simultaneously increasing impervious area. Impervious surfaces can neither absorb water nor remove pollutants and thus lose the purification and infiltration provided by naturally vegetated soil. Furthermore, impervious surfaces tend to concentrate pollutants on the top of the surface that are then washed off into the MS4 and waters of the State in a concentrated manner. The use of LID site design BMPs can be an effective means of minimizing the impact of runoff discharges on receiving waters. By reducing water pollution, reducing runoff and increasing groundwater recharge, LID helps to improve the quality of receiving surface waters, stabilize the flow rates of receiving waters (preventing downstream hydromodification), reduce downstream flooding and protect and enhance water supply sources. Current runoff management, knowledge, practice and technology has resulted in the use of LID BMPs as an acceptable means of meeting the MEP standard for storm water treatment.

Current municipal codes may oppose or hinder the design, use and implementation of specific elements of LID. These codes include, but are not limited to, emergency services access requirements, building landscape ordinances, building height limits and parking space requirements. It is essential for Copermittees to work with other responsible agencies and/or update codes that have the potential to impact the use of LID.

The Local Government Commission, a non-profit organization working to build livable communities, developed a set of principles known as the *Ahwahnee Water Principles for Resource-Efficient Land Use*¹⁰⁵ that provide the opportunity to reduce costs and improve the reliability and quality of our water resources. Implementation of LID incorporates several of the Ahwahnee principles such as:

1. "Community Design should be compact, mixed use, walkable and transit-oriented so that urban runoff pollutants are minimized and the open lands that absorb water are preserved to the maximum extent possible."
3. "Water holding areas such as creek beds, recessed athletic fields, ponds, cisterns, and other features that serve to recharge groundwater, reduce runoff, improve water quality and decrease flooding should be incorporated into the urban landscape."
4. "All aspects of landscaping from the selection of plants to soil preparation and the installation of irrigation systems should be designed to reduce water demand, retain runoff, decrease flooding, and recharge groundwater."

¹⁰⁵ Local Government Commission, "The Ahwahnee Water Principles – A Blueprint for Regional Sustainability", http://water.lgc.org/Members/tony/docs/lgc_water_guide.pdf

5. "Permeable surfaces should be used for hardscape. Impervious surfaces such as driveways, streets, and parking lots should be minimized so that land is available to absorb storm water, reduce polluted urban runoff, recharge groundwater and reduce flooding."

The use of LID site design BMPs helps reduce the amount of impervious area associated with development and allows storm water to infiltrate into the soil. Natural vegetation and soil filters storm water runoff and reduces the volume and pollutant loads of storm water. Studies have revealed that the level of imperviousness resulting from development and urbanization is strongly correlated with the water quality impairment of nearby receiving waters.¹⁰⁶ In many cases, the impacts on receiving waters due to changes in hydrology can be more significant than those attributable to the contaminants found in storm water discharges.¹⁰⁷ These impacts include stream bank erosion (increased sediment load and subsequent deposition), benthic habitat degradation, and decreased diversity of macroinvertebrates. Although conventional BMPs do reduce storm water pollutant loads, they may not effectively control adverse effects from changes in the discharge hydrologic conditions.¹⁰⁸

The Order includes requirements for developments to include site design BMPs that mimic or replicate the natural hydrologic cycle. Open space designs which maximize pervious surfaces and retention of "natural" drainages have been found to reduce both the costs of development and pollutant export.¹⁰⁹ Moreover, USEPA finds including plans for a "natural" site design and BMP implementation during the design phase of new development and redevelopment offers the most cost effective strategy to reduce storm water pollutant loads to surface waters.¹¹⁰ In addition, a recent U.S. Department of Housing and Urban Development guidance document on low-impact development notes that the use of LID-based storm water management design allows land to be developed, but in a cost-effective manner that helps mitigate potential environmental impacts.¹¹¹

Finding D.2.d. RGOs are significant sources of pollutants in storm water runoff. RGOs are points of convergence for motor vehicles for automotive related services such as repair, refueling, tire inflation, and radiator fill-up and consequently produce significantly higher loadings of hydrocarbons and trace metals (including copper and zinc) than other developed areas.

¹⁰⁶ USEPA, 1999. 40 CFR 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.

¹⁰⁷ Ibid.

¹⁰⁸ USEPA, 2000. Low-Impact Development: A literature review. EPA-841-B-00-005. 35p.

¹⁰⁹ Center for Watershed Protection, 2000. "The Benefits of Better Site Design in Residential Subdivisions." Watershed Protection Techniques. Vol. 3. No. 2.

¹¹⁰ USEPA, 1999. 40 CFR 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.

¹¹¹ U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2003. "The Practice of Low Impact Development." Prepared by: NAHB Research Center, Inc. Upper Marlboro, Maryland. Contract No. H-21314CA. 131p.

Discussion of Finding D.2.d. RGOs are included in the Order as a Priority Development Project category because RGOs produce significantly greater loadings of hydrocarbons and trace metals (including copper and zinc) than other developed areas. To meet the storm water MEP standard, source control and structural treatment BMPs are needed at RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) an average daily traffic (ADT) of 100 or more vehicles per day. These are appropriate thresholds since vehicular development size and volume of traffic are good indicators of potential impacts of storm water runoff from RGOs on receiving waters.

This finding has been added to satisfy State Water Board Order WQ 2000-11's requirements for including RGOs as a Priority Development Category. State Water Board Order WQ 2000-11 acknowledged that a threshold (size, average daily traffic, etc.) appropriate to trigger SSMP requirements should be developed for RGOs and that specific findings regarding RGOs should be included in MS4 permits to justify the requirement.¹¹²

Finding D.2.e. Industrial sites are significant sources of pollutants in runoff. Pollutant concentrations and loads in runoff from industrial sites are similar or exceed pollutant concentrations and loads in runoff from other land uses, such as commercial or residential land uses. As with other land uses, LID site design, source control, and treatment control BMPs are needed at industrial sites in order to meet the MEP standard. These BMPs are necessary where the industrial site is larger than 10,000 square feet. The 10,000 square feet threshold is appropriate, since it is consistent with requirements in other Phase I NPDES storm water regulations throughout California.

Discussion of Finding D.2.e. Industrial sites can be a significant source of pollutants in storm water runoff. In an extensive review of storm water literature, the Los Angeles Water Board found widespread support for the finding that "industrial and commercial activities can also be considered hot spots as sources of pollutants." It also found that "industrial and commercial areas were likely to be the most significant pollutant source areas" of heavy metals.¹¹³ Likewise, storm water runoff from heavy industry in the Santa Clara Valley has been found to be extremely toxic.¹¹⁴ These findings are corroborated by USEPA, which states in the preamble to the 1990 Phase I NPDES storm water regulations that "Because storm water from industrial facilities may be a major contributor of pollutants to municipal separate storm sewer systems, municipalities are obligated to develop controls for storm water discharges associated

¹¹² State Water Board, 2000. Order WQ 2000-11. In the Matter of the Petitions of The Cities Of Bellflower, Et Al., The City Of Arcadia, And Western States Petroleum Association Review of January 26, 2000 Action of the Regional Board And Actions and Failures to Act by both the California Regional Water Quality Control Board, Los Angeles Region and Its Executive Officer Pursuant to Order No. 96-054, Permit for Municipal Storm Water and Urban Run-Off Discharges Within Los Angeles County [NPDES NO. CAS614001] SWRCB/OCC FILES A-1280, A-1280(a) and A-1280(b)

¹¹³ Los Angeles Water Board. 2001.

¹¹⁴ Schueler and Holland, 2000. Storm Water Strategies for Arid and Semi-Arid Watersheds (Article 66). The Practice of Watershed Protection.

with industrial activity through their system in their storm water management program." Since heavy industrial sites can be a significant source of pollutants in runoff in a manner similar to other SSMP project categories such as commercial development or automotive repair shops, it is appropriate to include heavy industrial sites as a SSMP category in the Order.

The Phase I NPDES storm water regulations require the Copermittees to "control through ordinance, permit, contract, order, or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity" (40 CFR 122.26(d)(2)(i)). In addition, it has been established that the MEP standard for the control of storm water runoff from new development projects includes incorporation of the SSMP requirements. Since the Copermittees must both control storm water pollutants from industrial sites and meet the storm water MEP standard for new development, it is appropriate to apply the SSMP requirements to heavy industrial sites.

The State Water Board's Order WQ 2000-11 indicates that it is appropriate to apply SSMP requirements to categories of development where evidence shows the category of development can be a significant source of pollutants. As evidenced above, heavy industrial sites can be a significant source of pollutants. Therefore, the Order includes heavy industrial sites as a SSMP Priority Development Project category.

Finding D.2.f. If not properly designed or maintained, certain BMPs implemented or required by municipalities for runoff management may create a habitat for vectors (e.g. mosquitoes and rodents). Proper BMP design and maintenance to avoid standing water, however, can prevent the creation of vector habitat. Nuisances and public health impacts resulting from vector breeding can be prevented with close collaboration and cooperative effort between municipalities, local vector control agencies, and the California Department of Public Health during the development and implementation of runoff management programs.

Discussion of Finding D.2.f. The implementation of certain structural BMPs or other runoff treatment systems can result in significant vector problems in the form of increased breeding or harborage habitat for mosquitoes, rodents or other potentially disease transmitting organisms. The implementation of BMPs that retain water may provide breeding habitat for a variety of mosquito species, some of which have the potential to transmit diseases such as Western Equine Encephalitis, St. Louis Encephalomyelitis, and malaria. Recent BMP implementation studies by Caltrans¹¹⁵ in District 7 and District 11 have demonstrated mosquito breeding associated with some types of BMPs. The Caltrans BMP Retrofit Pilot study cited lack of maintenance and improper design as factors contributing to mosquito production. However, a Watershed Protection Techniques article describes management techniques for selecting, designing, and maintaining structural treatment BMPs to minimize mosquito

¹¹⁵ Caltrans, 2000. BMP Retrofit Pilot Studies: A Preliminary Assessment of Vector Production.

production.¹¹⁶ State and local runoff management programs that include structural BMPs with the potential to retain water have been implemented in Florida and the Chesapeake Bay region without resulting in significant public health threats from mosquitoes or other vectors.¹¹⁷

Finding D.2.g. The increased volume, velocity, frequency and discharge duration of storm water runoff from developed areas has the potential to greatly accelerate downstream erosion, impair stream habitat in natural drainages, and negatively impact beneficial uses. Development and urbanization increase pollutant loads in storm water runoff and the volume of storm water runoff. Impervious surfaces can neither absorb water nor remove pollutants and thus lose the purification and infiltration provided by natural vegetated soil. Hydromodification measures for discharges to hardened channels allow for the future restoration of the hardened channels to their natural state, thereby restoring the chemical, physical, and biological integrity and beneficial uses of local receiving waters.

Discussion of Finding D.2.g. Increasing the volume, velocity, frequency and discharge duration of storm water runoff from developed areas will eventually greatly accelerate downstream erosion, impair stream habitat in natural drainages, and negatively impact beneficial uses. Development and urbanization increase pollutant loads and volume while simultaneously increasing impervious area. Impervious surfaces can neither absorb water nor remove pollutants and thus lose the purification and infiltration provided by naturally vegetated soil.

Historic hydromodification impacts, such as concrete lining and channelization, have impacted the natural physical habitat of urban streams resulting in low IBI scores. The Copermittee's monitoring to date indicates decreased IBI scores in the developed watersheds when compared to reference sites, with developed sites consistently having poor or very poor IBI scores. While habitat scores remained stable over the last reporting period, with scores of marginal to sub-optimal, the Copermittees have consistently monitored high levels of fine sediment in habitat assessments and often changing vegetative cover. However, the impact of persistent toxicity at the bioassessment stations in conjunction with physical habitat scores is unknown.¹¹⁸

Hydromodification impacts result in poor physical habitat conditions through streambed scour, erosion, vegetation displacement, sediment deposition, channelization, and channel modifications. Increased sediment loads from hydromodification causes other impacts to physical habitats including increased turbidity which then may cause increased temperatures. In addition, an increased sediment load may have an increased biological content thereby increasing the

¹¹⁶ Watershed Protection Techniques, 1995. Mosquitoes in Constructed Wetlands: A Management Bugaboo? 1(4):203-207.

¹¹⁷ Shaver, E. and R. Baldwin, 1995. Sand Filter Design for Water Quality Treatment in Herricks, E., Ed. Stormwater Runoff and Receiving Systems: Impact, Monitoring, and Assessment, CRC Lewis Publishers, New York, NY.

¹¹⁸ Riverside County Copermittees, 2008-2009 Santa Margarita Watershed Annual Report.

sediment oxygen demand and lowering the dissolved oxygen available for aquatic life.¹¹⁹

The objective of the CWA is “to restore and maintain the chemical, *physical*, and biological integrity of the Nation’s waters (emphasis added).” Stream restoration by removing concrete and other unnatural materials is a major step toward achieving that objective. The success of future stream restoration and stabilization is, however, dependent on preventing and reducing physical impacts from activities upstream. Therefore, hydromodification management measures are necessary upstream of modified (e.g. concrete, rip rap, etc.) channels in addition to non-modified channels.

Please see discussion of Findings C.10 and C.11 for additional information about impacts due to increasing volume, velocity, frequency and discharge duration of storm water runoff from developed areas.

Finding D.3.a. In accordance with federal NPDES regulations and to ensure the most effective oversight of industrial and construction site discharges, discharges of runoff from industrial and construction sites are subject to dual (State and local) storm water regulation. Under this dual system, each Copermittee is responsible for enforcing its local permits, plans, and ordinances, and the San Diego Water Board is responsible for enforcing the General Construction Activities Storm Water Permit, State Water Board Order 2009-0009-DWQ, NPDES No. CAS000002 (General Construction Permit) and the General Industrial Activities Storm Water Permit, State Water Board Order 97-03-DWQ, NPDES No. CAS000001 (General Industrial Permit). NPDES municipal regulations require that municipalities develop and implement measures to address runoff from industrial and construction activities. Those measures may include the implementation of other BMPs in addition to those BMPs that are required under the statewide general permits for activities subject to both State and local regulation.

Discussion of Finding D.3.a. USEPA finds the control of pollutant discharges from industry and construction so important to receiving water quality that it has established a double system of regulation over industrial and construction sites. This double system of regulation consists of two parallel regulatory systems with the same common objective: to keep pollutants from industrial and construction sites out of the MS4. In this double system of regulation for runoff from industrial and construction sites, local governments must enforce their legal authorities (i.e. local ordinances and permits) while the San Diego Water Board must enforce its legal authority (i.e. statewide general industrial and construction storm water permits). These two regulatory systems are designed to complement and support each other. Municipalities are not required to enforce San Diego Water Board and State Water Board permits. They are required, however, to enforce their ordinances and permits. The Federal regulations are clear that municipalities have responsibility to prevent

¹¹⁹ USEPA, National Management Measures to Control Nonpoint Source Pollution from Hydromodification, EPA 841-B-07-002, July 2007.

non-storm water and address storm water runoff from industrial and construction sites which enters their MS4s.

Municipalities have this responsibility because they have the authority to issue land use and development permits. Since municipalities are the lead permitting authority for industrial land use and construction activities, they are also the lead for enforcement regarding runoff discharges from these sites. For sites where the municipality is the lead permitting authority, the San Diego Water Board will work with the municipality and provide support where needed. The San Diego Water Board will assist municipalities in enforcement against non-compliant sites after the municipality has exhibited a good faith effort to bring the site into compliance.

According to USEPA, the storm water regulations envision that NPDES permitting authorities and municipal operators will cooperate to develop programs to monitor and control pollutants in storm water discharges from industrial facilities.¹²⁰ USEPA discusses the “dual regulation” of construction sites in its Storm Water Phase II Compliance Assistance Guide, which states “Even though all construction sites that disturb more than one acre are covered nationally by an NPDES storm water permit, the construction site runoff control minimum measure [...] is needed to induce more localized site regulation and enforcement efforts, and to enable operators [...] to more effectively control construction site discharges into their MS4s.”¹²¹ While the Storm Water Phase II Compliance Assistance Guide applies to small municipalities, it is applicable to the Copermittees, because they are similar in size and have the potential to discharge similar pollutant types as Phase II municipalities.

Finding D.3.b. Identification of sources of pollutants in runoff (such as municipal areas and activities, industrial and commercial sites/sources, construction sites, and residential areas), development and implementation of BMPs to address those sources, and updating ordinances and approval processes are necessary for the Copermittees to ensure that discharges of pollutants from its MS4 in storm water are reduced to the MEP and that non-storm water discharges are not occurring. Inspections and other compliance verification methods are needed to ensure minimum BMPs are implemented. Inspections are especially important at areas that are at high risk for pollutant discharges.

Discussion of Finding D.3.b. Source identification is necessary to characterize the nature and extent of pollutants in discharges and to develop appropriate BMPs. It is the first step in a targeted approach to runoff management. Source identification helps identify the location of potential sources of pollutants in runoff. Pollutants found to be present in receiving waters can then be traced to the sites which frequently generate such pollutants. In this manner source inventories can help to target inspections, monitoring, and potential enforcement. This allows for limited inspection, monitoring, and enforcement time to be most effective. USEPA supports source identification as a

¹²⁰ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA 833-B-92-002.

¹²¹ USEPA, 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

concept when it recommends construction, municipal, and industrial source identification in guidance and the federal regulations.^{122,123}

The development of BMPs for identified sources will help ensure that appropriate, consistent controls are implemented at all types of development and areas. Copermittees must reduce the discharge of pollutants in storm water runoff to the maximum extent practicable. To achieve this level of pollutant reduction, BMPs must be implemented. Designation of minimum BMPs helps ensure that appropriate BMPs are implemented for various sources. These minimum BMPs also serve as guidance as to the level of water quality protection required. USEPA requires development and implementation of BMPs for construction, municipal, commercial, industrial, and residential sources at 40 CFR 122.26(d)(2)(iv)(A-D).

Updating ordinances and approval processes is necessary in order for the Copermittees to control discharges to their MS4s. USEPA supports updating ordinances and approval processes when it states “A crucial requirement of the NPDES storm water regulation is that a municipality must demonstrate that it has adequate legal authority to control the contribution of pollutants in storm water discharged to its MS4. [...] In order to have an effective municipal storm water management program, a municipality must have adequate legal authority to control the contribution of pollutants to the MS4. [...] ‘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.”¹²⁴

Inspections provide a necessary means for the Copermittees to evaluate compliance of pollutant sources with their municipal ordinances and minimum BMP requirements. USEPA supports inspections when it recommends inspections of construction, municipal, and industrial sources.¹²⁵ Inspection of high risk sources are especially important because of the ability of frequent inspections to help ensure compliance, thereby reducing the risk associated with such sources. USEPA suggests that inspections can improve compliance when it states “Effective inspection and enforcement requires [...] penalties to deter infractions and intervention by the municipal authority to correct violations.”¹²⁶

Finding D.3.c. Historic and current development makes use of natural drainage patterns and features as conveyances for runoff. Urban streams used in this manner are part of the municipalities MS4s regardless of whether they are natural, anthropogenic, or partially modified features. In these cases, the urban stream is both an MS4 and receiving water.

¹²² USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA 833-B-92-002.

¹²³ 40 CFR 122.26(d)(2)(ii)

¹²⁴ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA 833-B-92-002.

¹²⁵ Ibid.

¹²⁶ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA 833-B-92-002.

Discussion of Finding D.3.c. An MS4 is defined in the federal regulations as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), owned or operated by a Copermittee, and designed or used for collecting or conveying runoff.¹²⁷ Natural drainage patterns and urban streams are frequently used by municipalities to collect and convey runoff away from development within their jurisdiction. Therefore, the San Diego Water Board considers natural drainages that are used for conveyances of runoff, regardless of whether or not they've been altered by the municipality, as both part of the MS4s and as receiving waters. To clarify, an unaltered natural drainage, which receives runoff from a point source (channeled by a Copermittee to drain an area within their jurisdiction), which then conveys the runoff to an altered natural drainage or a man-made MS4, is both an MS4 and a receiving water.¹²⁸

Finding D.3.d. As operators of the MS4s, the Copermittees cannot passively receive and discharge pollutants from third parties. By providing free and open access to an MS4 that conveys discharges to waters of the U.S., the operator essentially accepts responsibility for discharges into the MS4 that it does not prohibit or otherwise control. These discharges may cause or contribute to a condition of contamination or a violation of water quality standards.

Discussion of Finding D.3.d. CWA section 402(p) requires operators of MS4s to prohibit non-storm water discharges into their MS4s. This is necessary because pollutants which enter the MS4 generally are conveyed through the MS4 to be eventually discharged into receiving waters. If a municipality does not prohibit non-storm water discharges, it is providing the pathway (its MS4) which enables pollutants to reach receiving waters. Since the municipality's storm water management service can result in pollutant discharges to receiving waters, the municipality must accept responsibility for the water quality consequences resulting from this service. Furthermore, third party discharges can cause a municipality to be out of compliance with its permit. Since pollutants from third parties which enter the MS4 will eventually be discharged from the MS4 to receiving waters, the third party discharges can result in a situation of municipality non-compliance if the discharges lead to an exceedance of water quality standards. For these reasons, each Copermittee must prohibit and/or control discharges from third parties to its MS4. USEPA supports this concept when it states "the operators of regulated small MS4s cannot passively receive and discharge pollutants from third parties" and "the operator of a small MS4 that does not prohibit and/or control discharges into its system essentially accepts 'title' for those discharges. At a minimum, by providing free and open access to the MS4s that convey discharges

¹²⁷ USEPA, 2000. EPA Administered Permit Programs: The National Pollutant Discharge Elimination System. Code of Federal Regulations, Vol. 40, Part 122.

¹²⁸ San Diego Water Board, 2001. Response in Opposition to Petitions for Review of California Regional Water Quality Control Board San Diego Region Order No. 2001-01 – NPDES Permit No. CAS0108758 (San Diego Municipal Storm Water Permit).

to the waters of the United States, the municipal storm sewer system enables water quality impairment by third parties.”¹²⁹

In a recent decision issued for *United States v. Washington State Department of Transportation (WSDOT)*,¹³⁰ the court found that WSDOT, by allowing runoff from its MS4 to a receiving water that is part of a Superfund site, is an “arranger” of “disposal or treatment of hazardous substances” as defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) by “designing, constructing, and operating drainage systems whose sole function was to collect highway runoff and dispose of it into nearby water-bodies.” The court went on to state that “WSDOT did design the drainage system and...has the ability to redirect, contain or treat its contaminated runoff.”

Finding D.3.e. Waste and pollutants which are deposited and accumulate in MS4 drainage structures will be discharged from these structures to waters of the U.S. unless they are removed. These discharges may cause or contribute to, or threaten to cause or contribute to, a condition of pollution in receiving waters. For this reason, pollutant discharges from storm water into MS4s must be reduced using a combination of management measures, including source control and an effective MS4 maintenance program implemented by each Copermittee.

Discussion of Finding D.3.e. When rain falls and drains freeways, industries, construction sites, and neighborhoods, it picks up a multitude of pollutants. Gravity flow transports the pollutants to the MS4. Illicit discharges and connections also can contribute a significant amount of pollutants to MS4s. MS4s are commonly designed to convey their contents as quickly as possible. Due to the resulting typically high flow rates within the concrete conveyance systems of MS4s, pollutants which enter or are deposited in the MS4 and not removed are generally flushed unimpeded through the MS4 to waters of the United States. Since treatment generally does not occur within the MS4, in such cases reduction of storm water pollutants to the MEP must occur prior to discharges entering the MS4.

The importance of this concept is supported by the tons of wastes/pollutants that have been removed from the Copermittees’ MS4s as reported in their ROWD.¹³¹ Moreover, these pollutants will be discharged into receiving waters unless an effective MS4 and structural treatment BMP maintenance program is implemented by the Copermittees. The requirement for Copermittees to conduct a MS4 maintenance program is specifically directed in both the Phase I and Phase II storm water regulations. Regarding MS4 cleaning, USEPA states “The removal of sediment, decaying debris, and highly polluted water from catch basins has aesthetic and water quality benefits, including reducing foul odors, reducing suspended solids, and reducing the load of

¹²⁹ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68765-68766.

¹³⁰ United State District Court, Western District of Washington at Tacoma, Case No. C08-5722RJB, Order on Motions for Partial Summary Judgment, dated June 7, 2010.

¹³¹ Riverside County Copermittees. 2009. Report of Waste Discharge (San Diego Region).

oxygen-demanding substances that reach receiving waters.”¹³² It goes on to say, “Catch basin cleaning is an efficient and cost-effective method for preventing the transport of sediment and pollutants to receiving water bodies.” USEPA also finds that “Lack of maintenance often limits the effectiveness of storm water structural controls such as detention/retention basins and infiltration devices. [...] The proposed program should provide for maintenance logs and identify specific maintenance activities for each class of control, such as removing sediment from retention ponds every five years, cleaning catch basins annually, and removing litter from channels twice a year.”¹³³

Finding D.3.f. Enforcement of local runoff related ordinances, permits, and plans is an essential component of every runoff management program and is specifically required in the federal storm water regulations and this Order. Each Copermittee is individually responsible for adoption and enforcement of ordinances and/or policies, implementation of identified control measures/BMPs needed to prevent or reduce pollutants in storm water runoff, and for the allocation of funds for the capital, operation and maintenance, administrative, and enforcement expenditures necessary to implement and enforce such control measures/BMPs under its jurisdiction. Education is an important aspect of every effective runoff management program and the basis for changes in behavior at a societal level. Education of municipal planning, inspection, and maintenance department staffs is especially critical to ensure that in-house staffs understand how their activities impact water quality, how to accomplish their jobs while protecting water quality, and understand their specific roles and responsibilities for compliance with this Order. Public education, designed to target various urban land users and other audiences, is also essential to inform the public of how individual actions affect receiving water quality and how adverse effects can be minimized.

Discussion of Finding D.3.f. The Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A – D) are clear in placing responsibility on municipalities for control of runoff from third party activities and land uses to their MS4.¹³⁴ In order for municipalities to assume this responsibility, they must implement ordinances, permits, and plans addressing runoff from third parties. Assessments for compliance with their ordinances, permits, and plans are essential for a municipality to ensure that third parties are not causing the municipality to be in violation of its municipal storm water permit. When conditions of non-compliance are determined, enforcement is necessary to ensure that violations of municipality ordinances and permits are corrected. When the Copermittees determine a violation of its storm water ordinance, it must pursue correction of the violation. Without enforcement, third parties do not have incentive to correct violations. USEPA supports enforcement by municipalities when it states “Effective inspection and enforcement requires [...] penalties to deter

¹³² USEPA, 1999. Storm Water O&M Fact Sheet, Catch Basin Cleaning. EPA 832-F-99-011.

¹³³ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA 833-B-92-002.

¹³⁴ USEPA, 2000. EPA Administered Permit Programs: The National Pollutant Discharge Elimination System. Code of Federal Regulations, Vol. 40, Part 122.

infractions and intervention by the municipal authority to correct violations. Enforcement mechanisms [...] also must be described.”¹³⁵

Education is a critical BMP and an important aspect of runoff management programs. USEPA finds that “An informed and knowledgeable community is critical to the success of a storm water management program since it helps ensure the following: Greater support for the program as the public gains a greater understanding of the reasons why it is necessary and important, [and] 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.”¹³⁶

Regarding target audiences, USEPA also states “The public education program should use a mix of appropriate local strategies to address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.”

Finding D.3.g. Public participation during the development of runoff management programs is necessary to ensure that all stakeholder interests and a variety of creative solutions are considered.

Discussion of Finding D.3.g. This finding is supported by the Phase II Storm Water Regulations, which state “early and frequent public involvement can shorten implementation schedules and broaden public support for a program.” USEPA goes on to explain, “Public participation is likely to ensure a more successful storm water program by providing valuable expertise and a conduit to other programs and governments.”¹³⁷

Finding D.3.h. Retrofitting existing development with storm water treatment controls, including LID, is necessary to address storm water discharges from existing development that may cause or contribute to a condition of pollution or a violation of water quality standards. Although SSMP BMPs are required for redevelopment, the current rate of redevelopment will not address water quality problems in a timely manner. Cooperation with private landowners is necessary to effectively identify, implement, and maintain retrofit projects for the preservation, restoration, and enhancement of water quality.

Discussion of Finding D.3.h. Existing BMPs are not sufficient to protect the Beneficial Uses of receiving waters from storm water MS4 discharges, as evidenced by 303(d) listings and exceedances of Water Quality Objectives from the Copermittees’ monitoring reports. As recognized in USEPA guidance, waters in the region cannot be protected without also addressing degradation caused by storm

¹³⁵ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA/833-B-92-002.

¹³⁶ USEPA, 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

¹³⁷ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68755.

water discharges from existing development. This requires more than just a new development and redeveloped sites program, which at best can only hold the line. For this reason USEPA recommends that storm water programs include a retrofit plan or program for retrofitting existing development.¹³⁸

Implementing more advanced BMPs, including the retrofitting of existing development with LID BMPs, is part of the iterative process. Based on the current rate of redevelopment compared to existing BMPs, the use of LID only on new and redevelopment will not adequately address current water quality problems, including downstream hydromodification. Retrofitting existing development is practicable for a municipality through a systematic evaluation, prioritization and implementation plan focused on impaired water bodies, pollutants of concern, areas of downstream hydromodification, feasibility and effective communication and cooperation with private property owners.

To actually improve the quality of receiving waters, discharges from existing developed sites need to be mitigated, which generally means implementation of measures to retrofit existing development sites with storm water control measures that can retain and/or treat storm water on site. Retrofitting existing development is possible and reasonable to significantly improve water quality in receiving waters.

Successful retrofitting programs have been implemented in such diverse locations as Seattle, Washington¹³⁹; Portland, Oregon¹⁴⁰; Santa Monica, California¹⁴¹; Kansas City, Kansas¹⁴²; and Montgomery County, MD¹⁴³. When appropriately applied as in this Order, retrofitting existing development meets MEP.

Finding D.4.a. Since runoff within a watershed can flow from and through multiple land uses and political jurisdictions, watershed-based runoff management can greatly enhance the protection of receiving waters. Such management provides a means to focus on the most important water quality problems in each watershed. By focusing on the most important water quality problems, watershed efforts can maximize protection of beneficial use in an efficient manner. Effective watershed-based runoff management actively reduces pollutant discharges and abates pollutant sources causing or contributing to watershed water quality problems. Watershed-based runoff management that does not actively reduce pollutant discharges and abate pollutant sources causing or contributing to watershed water quality problems can necessitate implementation of the iterative process outlined in section A.3 of the this Order. Watershed management of runoff does not require Copermittees to expend resources outside of their jurisdictions. In some cases, however, this added flexibility provides more, and possibly more effective, alternatives for minimizing waste discharges.

¹³⁸ USEPA, 2010. MS4 Permit Improvement Guide. EPA 833-R-10-001.

¹³⁹ SEA Street, http://www.seattle.gov/dpd/Planning/CityDesign/What_We_Do/Outreach/Folio/DPDS_008014.asp

¹⁴⁰ Clean River Rewards, <http://www.portlandonline.com/BES/index.cfm?c=edeef>

¹⁴¹ City of Santa Monica, Urban Runoff program, <http://www.smgov.net/Departments/OSE/categories/content.aspx?id=4007>

¹⁴² 10,000 Rain Gardens, <http://www.rainkc.com/>

¹⁴³ Rainscapes, <http://www.montgomerycountymd.gov/Content/DEP/Rainscapes/home.html>

Watershed management requires the Copermittees within a watershed to develop a watershed-based management strategy, which can then be implemented on a jurisdictional basis.

Discussion of Finding D.4.a. In recent years, addressing water quality issues from a watershed perspective has increasingly gained attention. Regarding watershed-based permitting, the USEPA *Watershed-Based NPDES Permitting Policy Statement* issued on Jan. 7, 2004 states the following:

USEPA continues to support a holistic watershed approach to water quality management. The process for developing and issuing NPDES permits on a watershed basis is an important tool in water quality management. USEPA believes that developing and issuing NPDES permits on a watershed basis can benefit all watershed stakeholders, from the NPDES permitting authority to local community members. A watershed-based approach to point source permitting under the NPDES program may serve as one innovative tool for achieving new efficiencies and environmental results. USEPA believes that watershed-based permitting can:

- Lead to more environmentally effective results;
- Emphasize measuring the effectiveness of targeted actions on improvements in water quality;
- Provide greater opportunities for trading and other market based approaches;
- Reduce the cost of improving the quality of the nation's waters;
- Foster more effective implementation of watershed plans, including total maximum daily loads (TMDLs); and
- Realize other ancillary benefits beyond those that have been achieved under the CWA (e.g., facilitate program integration including integration of Clean Water Act and Safe Drinking Water Act programs).

Watershed-based permitting is a process that ultimately produces NPDES permits that are issued to point sources on a geographic or watershed basis. In establishing point source controls in a watershed-based permit, the permitting authority may focus on watershed goals, and consider multiple pollutant sources and stressors, including the level of nonpoint source control that is practicable. In general, there are numerous permitting mechanisms that may be used to develop and issue permits within a watershed approach.

This USEPA guidance is in line with State Water Board and San Diego Water Board watershed management goals. For example, the State Water Board's TAC recommends watershed-based water quality protection, stating "Municipal permits should have watershed specific components." The TAC further recommends that "All NPDES permits and Waste Discharge Requirements should be considered for reissuance on a watershed basis."

In addition, the Basin Plan states that “public agencies and private organizations concerned with water resources have come to recognize that a comprehensive evaluation of pollutant contributions on a watershed scale is the only way to realistically assess cumulative impacts and formulate workable strategies to truly protect our water resources. Both water pollution and habitat degradation problems can best be solved by following a basin-wide approach.”

In light of USEPA’s policy statement and the State Water Board’s and San Diego Water Board’s watershed management goals, the San Diego Water Board seeks to expand watershed management in the regulation of runoff from the MS4. Watershed-based MS4 permits can provide for more effective receiving water quality protection by focusing on specific water quality problems. The entire watershed for the receiving water can be assessed, allowing for critical areas and practices to be targeted for corrective actions. Known sources of pollutants of concern can be investigated for potential water quality impacts. Problem areas can then be addressed, leading to eventual improvements in receiving water quality. Management of runoff on a watershed basis allows for specific water quality problems to be targeted so that efforts result in maximized water quality improvements.¹⁴⁴

Finding D.4.b. Some runoff issues, such as general education and training, can be effectively addressed on a regional basis. Regional approaches to runoff management can improve program consistency and promote sharing of resources, which can result in implementation of more efficient programs.

Discussion of Finding D.4.b. Copermittees in Riverside County participate in several runoff-related activities whose scope extends beyond the area subject to this Order. These include countywide activities (e.g., portions of Riverside County fall under the jurisdictions of the Santa Ana Water Board and California Regional Water Quality Control Board, Colorado River Region (Colorado River Water Board)), southern California, and statewide activities. Copermittees’ participation in these regional activities is generally directed at improving management capability, preventing redundancy and taking advantage of economies of scale. For instance, Copermittees seek to develop consistency between watershed and/or jurisdictional programs (e.g., through standards development), and to collaborate on certain program activities such as education, training, and monitoring.

Finding D.4.c. It is important for the Copermittees to coordinate their water quality protection and land use planning activities to achieve the greatest protection of receiving water bodies. Copermittee coordination with other watershed stakeholders, especially the State of California Department of Transportation, the U.S. federal government, sovereign American Indian tribes, and water and sewer districts, is also important.

¹⁴⁴ San Diego Water Board, 2004. San Diego County Municipal Storm Water Permit Reissuance Analysis Summary. P. 1.

Discussion of Finding D.4.c. Conventional planning and zoning can be limited in their ability to protect the environmental quality of creeks, rivers, and other water bodies. Watershed-based planning is often ignored, despite the fact that receiving waters unite land by collecting runoff from throughout the watershed. Since watersheds unite land, they can be used as an effective basis for planning. Watershed-based planning enables local and regional areas to realize economic, social, and other benefits associated with growth, while conserving the resources needed to sustain such growth, including water quality.

This type of planning can involve four steps: (1) Identify the watersheds shared by the participating jurisdictions; (2) Identify, assess, and prioritize the natural, social, and other resources in the watersheds; (3) Prioritize areas for growth, protection, and conservation, based on prioritized resources; and (4) Develop plans and regulations to guide growth and protect resources. Local governments have started with simple, yet effective, steps toward watershed planning, such as adopting a watershed-based planning approach, articulating the basic strategy in their General Plans, and beginning to pursue the basic strategy in collaboration with neighboring local governments who share the watersheds. Examples of new mechanisms created to facilitate watershed-based planning and zoning include the San Francisquito Creek Watershed Coordinated Resource Management Process and the Santa Clara Basin Watershed Management Initiative.¹⁴⁵

¹⁴⁵ Bay Area Stormwater Management Agencies Association., 1999. Start at the Source. Forbes Custom Publishing. Available on-line at: http://www.scvurppp-w2k.com/basmaa_satsm.htm

E. Statute and Regulatory Considerations

Finding E.1. The RWL language specified in this Order is consistent with language recommended by the USEPA and established in State Water Board Order WQ-99-05, *Own Motion Review of the Petition of Environmental Health Coalition to Review Waste Discharge Requirements Order No. 96-03, NPDES Permit No. CAS0108740*, adopted by the State Water Board on June 17, 1999. The RWL language in this Order requires compliance with water quality standards, which for storm water discharges is to be achieved through an iterative approach requiring the implementation of improved and better-tailored BMPs over time. Compliance with receiving water limitations based on applicable water quality standards is necessary to ensure that MS4 discharges will not cause or contribute to violations of water quality standards and the creation of conditions of pollution, contamination, or nuisance.

Discussion of Finding E.1. The RWL language in the Order requires storm water compliance with water quality standards through an iterative approach for implementing improved and better-tailored BMPs over time. The iterative BMP process requires the implementation of increasingly stringent BMPs until receiving water quality standards are achieved. This is necessary because implementation of BMPs alone cannot ensure attainment of receiving water quality standards. For example, a BMP that is effective in one situation may not be applicable in another. An iterative process of BMP development, implementation, and assessment is needed to promote consistent compliance with receiving water quality objectives. If assessment of a given BMP confirms that the BMP is ineffective, the iterative process should be restarted, with redevelopment of a new BMP that is anticipated to result in compliance with receiving water quality objectives.

The issue of whether storm water discharges from MS4s must meet water quality standards has been intensely debated in past years. The argument arises because CWA section 402(p) fails to clearly state that municipal dischargers of storm water must meet water quality standards. On the issue of industrial discharges of storm water, the statute clearly indicates that industrial dischargers must meet both (1) the technology-based standard of “best available technology economically achievable (BAT)” and (2) applicable water quality standards. On the issue of municipal discharges however, the statute states that municipal dischargers must meet (1) the technology-based standard of “MEP” and (2) “such other provisions that the Administrator or the State determines appropriate for the control of such pollutants.” The statute fails, however, to specifically state that municipal dischargers must meet water quality standards.

As a result, the municipal storm water dischargers have argued that they do not have to meet water quality standards; and that they only are required to meet MEP for storm water. Environmental interest groups maintain that not only do MS4 discharges have to meet water quality standards, but that MS4 permits must also comply with numeric effluent limitations for the purpose of meeting water quality standards. On the issue of water quality standards, USEPA, the State Water Board, and the San Diego Water

Board have consistently maintained that MS4s must indeed comply with water quality standards. On the issue of whether water quality standards must be met by numeric effluent limitations, USEPA, the State Water Board (in Orders WQ 91-03 and WQ 91-04), and the San Diego Water Board have maintained that MS4 permits can contain narrative requirements for the implementation of BMPs in place of numeric effluent limitations for storm water discharges.¹⁴⁶

In addition to relying on USEPA's legal opinion concluding that MS4s must meet MEP for storm water and water quality standards, the State Water Board also relied on the CWA's explicit authority for States to require "such other provisions that the Administrator or the State determines appropriate for the control of such pollutants" in addition to the technology-based standard of MEP for storm water discharges. To further support its conclusions that MS4 permit dischargers must meet water quality standards, the State Water Board relied on provisions of the CWC that specify that all waste discharge requirements must implement applicable Basin Plans and take into consideration the appropriate water quality objectives for the protection of beneficial uses.

The State Water Board first formally concluded that permits for MS4s must contain effluent limitations based on water quality standards in its Order WQ 91-03. In that Order, the State Water Board also concluded that it was appropriate for Regional Water Boards to achieve this result by requiring best management practices, rather than by inserting numeric effluent limitations into MS4 permits. Later, in Order WQ 98-01, the State Water Board prescribed specific precedent setting Receiving Water Limitations language to be included in all future MS4 permits. This language specifically requires that MS4 dischargers meet water quality standards and allows for the use of narrative BMPs (increasing in stringency and implemented in an iterative process) as the mechanism by which water quality standards can be met for storm water discharges.

In Order WQ 99-05, the State Water Board modified its receiving water limitations language in Order WQ 98-01 to meet specific objections by USEPA (the modifications resulted in stricter compliance with water quality standards). State Water Board Order WQ 99-05 states:

"In Order WQ 98-01, the State Board ordered that certain receiving water limitation language be included in future municipal storm water permits. Following inclusion of that language in permits issued by the San Francisco Bay and San Diego Water Boards for Vallejo and Riverside respectively, the USEPA objected to the permits. The USEPA objection was based on the receiving water limitation language. The USEPA has now issued those permits itself and has included receiving water limitation language it deems appropriate.

¹⁴⁶ For the most recent assessment, see Storm Water Panel Recommendations to the California State Water Resources Control Board, 2006. *The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial, and Construction Activities.*

In light of USEPA's objection to the receiving water limitation language in Order WQ 98-01 and its adoption of alternative language, the State Board is revising its instructions regarding receiving water limitation language for municipal storm water permits. It is hereby ordered that Order WQ 98-01 will be amended to remove the receiving water limitation language contained therein and to substitute the USEPA language. Based on the reasons stated here, and as a precedent decision, the following receiving water limitation language shall be included in future municipal storm water permits."

In the 1999 case involving MS4 permits issued by USEPA to several Arizona cities (*Defenders of Wildlife v. Browner*, 1999, 197 F. 3d 1035), the United States Court of Appeals for the Ninth Circuit upheld USEPA's requirement for MS4 dischargers to meet water quality standards, but it did so on the basis of USEPA's discretion rather than on the basis of strict compliance with the CWA. In other words, while holding that the CWA does not require all MS4 discharges to comply strictly with state water quality standards, the Court also held that USEPA has the authority to determine that ensuring strict compliance with state water quality standards is necessary to control pollutants. On the question of whether MS4 permits must contain numeric effluent limitations, the court upheld USEPA's use of iterative BMPs in place of numeric effluent limitations for storm water discharges.

On October 14, 1999, the State Water Board issued a legal opinion on the federal appellate decision and provided advice to the Regional Water Boards on how to proceed in the future. In the memorandum, the State Water Board concludes that the recent Ninth Circuit opinion upholds the discretion of USEPA and the State to (continue to) issue storm water permits to MS4s that require compliance with water quality standards through iterative BMPs. Moreover, the memorandum states that "[...] because most MS4 discharges enter impaired water bodies, there is a real need for permits to include stringent requirements to protect those water bodies. As TMDLs are developed, it is likely that MS4s will have to participate in pollutant load reductions, and the MS4 permits are the most effective vehicles for those reductions." In summary, the State Water Board found that the Regional Water Boards should continue to include the RWL established in State Water Board Order WQ 99-05 in all future permits.

The issue of the RWLs language was also central to the Building Industry Association's (BIA's) (and others') appeal of San Diego Water Board Order No. 2001-01 (San Diego MS4 permit), which was used as a template for San Diego Water Board Order No. R9-2002-0001 (Orange County MS4 permit). BIA contended that the storm water MEP standard was a ceiling on what could be required of the Copermittees in implementing their runoff management programs, and that Order No. 2001-01's receiving water limitations requirements exceeded that ceiling. In other words, BIA argued that the Copermittees could not be required to comply with receiving water limitations if they necessitated efforts which went beyond the MEP standard. Again, the courts upheld the San Diego Water Board's discretion to require compliance with water quality standards in municipal storm water permits, without limitation. The Court

of Appeal, Fourth Appellate District found that the San Diego Water Board has “the authority to include a permit provision requiring compliance with water quality standards.”¹⁴⁷ On further appeal by BIA, the California State Supreme Court declined to hear the matter.

While implementation of the iterative BMP process is a means to achieve compliance with water quality objectives for storm water MS4 discharges, it does not shield the discharger from enforcement actions for continued non-compliance with water quality standards. Consistent with USEPA guidance,¹⁴⁸ regardless of whether or not an iterative process is being implemented, discharges that cause or contribute to a violation of water quality standards are in violation of Order No. R9-2010-0016.

Finding E.2. The Basin Plan, identifies the following existing and potential beneficial uses for surface waters in Riverside County: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Process Supply (PROC), Hydropower Generation (POW), Industrial Service Supply (IND), Ground Water Recharge (GWR), Contact Water Recreation (REC1), Non-contact Water Recreation (REC2), Warm Freshwater Habitat (WARM), Cold Freshwater Habitat (COLD), Wildlife Habitat (WILD), Rare, Threatened, or Endangered Species (RARE), Spawning, Reproduction and/or Early Development (SPWN) and Preservation of Biological Habitats of Special Significance (BIOL).

Discussion of Finding E.2. The southwestern portion of Riverside County is within the San Diego Region. The Riverside County portion of the San Diego Region falls within Santa Margarita Hydrologic Unit. The major streams within the Riverside County portion of the Santa Margarita Hydrologic Unit are the Santa Margarita River, Temecula Creek, and Murrieta Creek. Other surface water bodies include De Luz Creek, Sandia Canyon Creek, Warm Springs Creek, San Gertrudis Creek, and Wilson Creek. Major inland water bodies include Lake Skinner and Vail Lake.

The Riverside County portion of the Santa Margarita Hydrologic Unit includes unincorporated portions of Riverside County, the Cities of Menifee, Murrieta, Temecula, and Wildomar..

Based on the 2000 census, approximately 150,000 people resided within the permitted area. Since the 2000 census, however, several new developments, especially in the Cities of Temecula and Murrieta have increased the housing stock of the area, and the population is now significantly higher. As of January 1, 2009, approximately 250,000 people reside in the permitted area, with approximately 30,000 people living in the unincorporated area of Riverside County (31,163) and approximately 220,000 living in the Cities of Menifee (613), Murrieta (99,574), Temecula (102,604), and Wildomar (22,240).¹⁴⁹

¹⁴⁷ Building Industry Association et al., v. State Water Resources Control Board, et al. 2004.

¹⁴⁸ USEPA, 1998. Jan. 21, 1998 correspondence, “State Board/OCC File A-1041 for Orange County,” from Alexis Strauss to Walt Petit, and March 17, 1998 correspondence from Alexis Strauss to Walt Petit.

¹⁴⁹ Fiscal Year 2008-2009 Santa Margarita Watershed Annual Progress Report

Finding E.3. This Order is in conformance with State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality Waters in California*, and the federal Antidegradation Policy described in 40 CFR 131.12.

Discussion of Finding E.3. Runoff management programs are required to be designed to reduce pollutants in storm water MS4 discharges to the maximum extent practicable and achieve compliance with water quality standards. Therefore, implementation of runoff management programs, which satisfy the requirements of Order No. R9-2010-0016, will prevent violations of receiving water quality standards. The Basin Plan states that “Water quality objectives must [...] conform to US EPA regulations covering antidegradation (40 CFR 131.12) and State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*.” As a result, when water quality standards are met, USEPA and State Water Board antidegradation policy requirements are also met.

Finding E.4. Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) requires coastal states with approved coastal zone management programs to address non-point pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and hydromodification. This NPDES permit addresses the management measures required for the urban category, with the exception of septic systems. The adoption and implementation of this NPDES permit relieves the Copermittee from developing a non-point source plan, for the urban category, under CZARA. The San Diego Water Board addresses septic systems through the administration of other programs.

Discussion of Finding E.4. Coastal states are required to develop programs to protect coastal waters from nonpoint source pollution, as mandated by the federal CZARA. CZARA section 6217 identifies polluted runoff as a significant factor in coastal water degradation, and requires implementation of management measures and enforceable policies to restore and protect coastal waters. In lieu of developing a separate NPS program for the coastal zone, California’s NPS Pollution Control Program was updated in 2000 to address the requirements of both the CWA section 319 and the CZARA section 6217 on a statewide basis. The California Coastal Commission (CCC), the State Water Board, and the nine Regional Water Boards are the lead State agencies for upgrading the program, although 20 other State agencies also participate. Pursuant to the CZARA (section 6217(g)) Guidance Document the development of runoff management programs pursuant to this NPDES permit fulfills the need for cities within watersheds that discharge to the coastal zone to develop an runoff non-point source plan identified in the State’s Non-point Source Program Strategy and Implementation Plan.¹⁵⁰

¹⁵⁰ State Water Board/CCC, 2000. Nonpoint Source Program Strategy and Implementation Plan, 1998-2013 (PROSIP).

Finding E.5. 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 Total Maximum Daily Loads (TMDLs) for such waters. This priority list of impaired waterbodies is called the Section 303(d) List. The 2006 303(d) List was approved by the State Water Board on October 25, 2006. On June 28, 2007 the 2006 303(d) List for California was given final approval by the USEPA. The 303(d) List was recently updated, and on December 16, 2009 the 2008 303(d) List was approved by the San Diego Water Board. The 2008 303(d) List for the San Diego Region was approved by the State Water Board on August 4, 2010. The 2008 303(d) List is awaiting USEPA approval.

Discussion of Finding E.5. Section 303(d) of the federal CWA (CWA, 33 USC 1250, et seq., at 1313(d)), requires States to identify waters that do not meet water quality standards after applying certain required technology-based effluent limits (“impaired” water bodies). States are required to compile this information in a list and submit the list to USEPA for review and approval. This list is known as the Section 303(d) list of impaired waters, or 303(d) List. As part of this listing process, States are required to prioritize waters/watersheds for future development of TMDLs. The State Water Board and Regional Water Boards have ongoing efforts to monitor and assess water quality, to prepare the 303(d) List, to prioritize waters/watersheds for TMDL development, and to subsequently develop TMDLs. TMDLs developed and adopted by the San Diego Water Board are incorporated into the Basin Plan via a Basin Plan Amendment as authorized under CWC section 13240.

The 2006 California 303(d) List identifies impaired receiving water bodies and their watersheds within the State of California.¹⁵¹ The San Diego Water Board recently updated the 303(d) List for the San Diego Region and adopted the 2008 303(d) List on December 16, 2009.¹⁵² The number of water bodies listed as impaired in the Riverside County portion of the Santa Margarita Hydrologic Unit increased from 6 water bodies (13 water body / impairing pollutant combinations) on the 2006 303(d) List to 9 water bodies (49 water body / impairing pollutant combinations) on the 2008 303(d) List, indicating the receiving water quality has been degraded further (see Table 2). Storm water and non-storm water runoff that is discharged from the Copermittees’ MS4s is a leading cause of receiving water quality impairment in the San Diego Region.

Finding E.6. This Order does not constitute an unfunded local government mandate subject to subvention under Article XIII B, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Order implements federally mandated requirements under CWA § 402. (33 U.S.C. §

¹⁵¹ The approved 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments is on-line at: http://www.waterboards.ca.gov/tmdl/303d_lists2006.html.

¹⁵² The 2008 Clean Water Act Section 303(d) List of Water Quality Limited Segments, approved by the San Diego Water Board and State Water Board, is available on-line at http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/303d_list/index.shtml

1342(p)(3)(B).) Second, the local agency Copermittees' obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-governmental and new dischargers who are issued NPDES permits for storm water and non-storm water discharges. Third, the local agency Copermittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order. Fourth, the Copermittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA § 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their MS4 discharges (i.e. effluent limitations). 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 XIII B, Section (6) of the California Constitution. Likewise, the provisions of this Order to implement TMDLs are federal mandates. The CWA requires TMDLs to be developed for water bodies that do not meet federal water quality standards. (33 U.S.C. sec. 1313(d).) Once the UUSEPA or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable wasteload allocation. (40 C.F.R. sec. 122.44(d)(1)(vii)(B).)

Discussion of Finding E.6. This Order does not constitute an unfunded local government mandate subject to subvention under Article XIII B, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Order implements federally mandated requirements under CWA 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 in storm water 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 CWA'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.)

Second, the local agency Copermittees' 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 CWA regulates the discharge of pollutants from point sources (33 U.S.C. § 1342) and the Porter-Cologne regulates the discharge of waste (CWC § 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 CWA 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 CWA 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 Board decisions, this Order does not require strict compliance with water quality standards. (State Water Board 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 Copermittees have 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 Copermittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA section 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric effluent limitations on their storm water discharges. To the extent, the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate. (*Accord County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.) Likewise, the Copermittees have voluntarily sought a program-based municipal storm water permit in lieu of a numeric limitations approach on their storm water discharge. (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 limitations].) 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 XIIB, Section (6) of the California Constitution.

The San Diego Water Board recognizes that the Commission on State Mandates recently found that certain provisions within two municipal storm water permits constituted reimbursable state mandates within the meaning of the California Constitution. The Commission did not determine the validity of those provisions; it only determined that the State must reimburse the claimants for the costs of implementing those provisions. The decisions directly affect only the municipal storm water permits identified in the two test claims. That is, the effect of the decisions is limited to the provisions of Los Angeles Water Board Order 01-182 and San Diego Order R9-2007-0001 identified by the Commission as reimbursable state mandates. No other municipal storm water permits or provisions therein are directly affected by the decisions and the San Diego Water Board is not precluded from adopting similar or identical provisions in the Tentative Order. Subsequent proceedings before the Commission to determine the local governments entitled to reimbursement and the amount of reimbursement are underway before the Commission. Separately, the State Water Board and San Diego and Los Angeles Water Boards have challenged these decisions in court.

Finding E.7. Runoff treatment and/or mitigation must occur prior to the discharge of runoff into receiving waters. Treatment BMPs must not be constructed in waters of the U.S. or State unless the runoff flows are sufficiently pretreated to protect the values and functions of the water body. Federal regulations at 40 CFR 131.10(a) state that in no case shall a state adopt waste transport or waste assimilation as a designated use for any waters of the U.S. Authorizing the construction of a runoff treatment facility within a water of the U.S., or using the water body itself as a treatment system or for conveyance to a treatment system, would be tantamount to accepting waste assimilation as an appropriate use for that water body. Furthermore, the construction, operation, and maintenance of a pollution control facility in a water body can negatively impact the physical, chemical, and biological integrity, as well as the beneficial uses, of the water body. Without federal authorization (e.g., pursuant to CWA § 404), waters of the U.S. may not be converted into, or used as, waste treatment or conveyance facilities. Similarly, waste discharge requirements pursuant to CWC §13260 are required for the conversion or use of waters of the State as waste treatment or conveyance facilities. Diversion from waters of the U.S./State to treatment facilities and subsequent return to waters of the U.S. is allowable, provided that the effluent complies with applicable NPDES requirements.

Discussion of Finding E.7. Runoff treatment and/or mitigation in accordance with any of the requirements in the Order must occur prior to the discharge of storm water into receiving waters. Allowing storm water polluted runoff to enter receiving waters prior to treatment to the MEP will result in degradation of the water body and potential

exceedances of water quality standards, from the discharge point to the point of dissipation, infiltration, or treatment. Furthermore, the construction, operation, and maintenance of a pollution control facility in a water body can negatively impact the physical, chemical, and biological integrity, as well as the beneficial uses, of the water body. This requirement is supported by federal regulation 40 CFR 131.10(a) and USEPA guidance. According to USEPA,¹⁵³ "To the extent possible, municipalities should avoid locating structural controls in natural wetlands. Before considering siting of controls in a natural wetland, the municipality should demonstrate that it is not possible or practicable to construct them in sites that do not contain natural wetlands. Practices should be used that settle solids, regulate flow, and remove contaminants prior to discharging storm water into a wetland."

Additional Federal guidance discusses the implementation of wetlands to treat municipal storm water discharges (USEPA, 2000. *Guiding Principles for Constructed Treatment Wetlands: Providing for Water Quality and Wildlife Habitat*). It states:

*"..treatment wetlands should not be constructed in a waters of the U.S. unless you can sufficiently pretreat the stormwater flows to protect the values and functions of the waters of the U.S. Because storm water is an unpredictable effluent source and can contain high levels of toxic substances, nutrients, and pathogens, we strongly encourage that you construct the treatment wetland in uplands and use best management practices in these projects."*¹⁵⁴

Consistent with USEPA guidance, the conversion or use of waters of the U.S./State into runoff treatment facilities or conveyance facilities for untreated storm water discharges must be appropriately reviewed by both Federal and State resource agencies. Such projects may be subject to federal permitting pursuant to CWA section 404 if discharges of dredged or fill material is involved.

The placement of hydromodification controls within waters of the U.S./State may also be subject to federal and/or state permitting, but would not necessarily be considered a pollutant treatment BMP. Provided that grade control structures are designed to re-establish a natural channel gradient and correct excessive changes to the sediment transport regime caused by urbanization, rather than to create a series of artificial hydrological impoundments for the purpose of treating pollution, this type of project is not considered an in-stream treatment BMP.

Finding E.8. The issuance of waste discharge requirements and an NPDES permit for the discharge of runoff from MS4s to waters of the U.S. is exempt from the requirement for preparation of environmental documents under the California Environmental Quality Act (CEQA) (Public Resources Code, Division 13, Chapter 3, section 21000 et seq.) in accordance with the CWC section 13389.

¹⁵³ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA 833-B-92-002.

¹⁵⁴ USEPA, 2000. Guiding Principles for Constructed Treatment Wetlands: Providing for Water Quality and Wildlife Habitat, (EPA 843-B-00-003).

Discussion of Finding E.8. CWC section 13389 exempts the adoption of waste discharge requirements (such as NPDES permits) from CEQA requirements: “Neither the State Water Board nor the Regional Water Boards shall be required to comply with the provisions of Chapter 3 (commencing with section 21100) of Division 13 of the Public Resources Code prior to the adoption of any waste discharge requirement, except requirements for new sources as defined in the Federal Water Pollution Control Act or acts amendatory thereof or supplementary thereto.”

This CEQA exemption was challenged during BIA’s (and others’) appeal of Order No. 2001-01. BIA contended that the CEQA exemption did not apply to permit requirements where the San Diego Water Board utilized its discretion to craft permit requirements which were more prescriptive than required by federal law. The Court of Appeal, Fourth Appellate District disagreed with this argument, stating “we also reject Building Industry’s argument to the extent it contends the statutory CEQA exemption in CWC section 13389 is inapplicable to a particular NPDES permit provision that is discretionary, rather than mandatory, under the CWA.”¹⁵⁵ On further appeal by BIA, the California State Supreme Court declined to hear the matter.

In a recent decision, the Court of Appeal of the State of California, Second Appellate District, upheld the CEQA exemption for municipal storm water NPDES permits (County of Los Angeles, et al. v. California State Water Resources Control Board, et al.).¹⁵⁶

Finding E.9. Storm water discharges from developed and developing areas in Riverside County are significant sources of certain pollutants that cause, may be causing, threatening to cause or contributing to water quality impairment in the waters of Riverside County. Furthermore, as delineated in the CWA section 303(d) list in Table 2, the San Diego Water Board has found that there is a reasonable potential that municipal storm water and non-storm water discharges from MS4s cause or may cause or contribute to an excursion above water quality standards for the following pollutants: Indicator Bacteria (including Fecal Coliform and E. Coli), Copper, Manganese, Iron, Chlorpyrifos, Diazinon, Sulfates, Phosphorous, Nitrogen, Total Dissolved Solids (TDS), and Toxicity. In accordance with CWA section 303(d), the San Diego Water Board is required to establish TMDLs for these pollutants to these waters to eliminate impairment and attain water quality standards. Therefore, certain early pollutant control actions and further pollutant impact assessments by the Copermittees are warranted and required pursuant to this Order.

Discussion of Finding E.9. CWA section 303(d)(1)(A) requires that:

“Each state must 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.”

¹⁵⁵ Building Industry Association et al., v. State Water Resources Control Board, et al. 2004.

¹⁵⁶ Los Angeles County Super. Ct. No. BS080792. Partial publication dated November 6, 2006.

The CWA also requires states to establish a priority ranking of impaired water bodies known as Water Quality Limited Segments and to establish Total Maximum Daily Loads (TMDLs) for such waters. This priority list of impaired water bodies is called the 303(d) List. The current 303(d) List was approved by the State Water Board on October 25, 2006. On June 28, 2007 the 2006 303(d) List for California was given final approval by USEPA. Every two years the State of California is required by CWA section 303(d) and 40 CFR(130.7) to develop and submit to the USEPA for approval an updated 303(d) list of impaired water bodies. The San Diego Water Board recently updated the 303(d) List and adopted the 2008 303(d) List on December 16, 2009.¹⁵⁷ The 2008 303(d) List for the San Diego Region was approved by the State Water Board on August 4, 2010. The 2008 303(d) List is awaiting approval by the USEPA. The number of water bodies listed as impaired in the Riverside County portion of the Santa Margarita Hydrologic Unit increased from 6 water bodies (13 water body / pollutant combinations) on the 2006 303(d) List to 9 water bodies (49 water body / pollutant combinations) on the 2008 303(d) List, indicating the receiving water quality has been degraded further (see Table 2).

Multiple water bodies in Riverside County have been identified as impaired and placed on the 303(d) List. The 303(d) listing of a water body and subsequent TMDL development is required when regulations under current permits, such as Technology Based Effluent Limitations (TBELs), are not stringent enough to meet Water Quality Standards and protect the Beneficial Uses of Waters of the State.

Storm water discharges from developed and developing areas in Riverside County are a significant source of certain pollutants that cause, may be causing, threatening to cause, or contributing to water quality impairment in the waters of Riverside County. Furthermore, the CWA section 303(d) list indicates that there is a reasonable potential that municipal storm water and dry weather discharges from MS4s cause, or may cause, or contribute to an excursion above water quality standards for the following pollutants: Indicator Bacteria, Copper, Manganese, Iron, Chlorpyrifos, Sulfates, Phosphorous, Nitrogen, Total Dissolved Solids, Toxicity and Turbidity (see Table 2). In accordance with CWA section 303(d), the San Diego Water Board is required to establish TMDLs for these pollutants in these waters to eliminate impairment and attain water quality standards. Per 40 CFR(130.7), WLAs are required for all point sources, including storm water and non-storm water discharges from MS4s. Therefore, focused pollutant control actions and further pollutant impact assessments by the Copermitees are warranted and required pursuant to this Order.

MS4 Permits address only those TMDL WLAs that have been adopted by the San Diego Water Board and have been approved by the State Water Board, Office of Administrative Law (OAL) and USEPA. WLAs are portions of a receiving water's loading capacity that is allocated to one of its existing or future point sources of

¹⁵⁷ The 2008 Clean Water Act Section 303(d) List of Water Quality Limited Segments, approved by the San Diego Water Board and State Water Board, is available on-line at http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/303d_list/index.shtml

pollution. To date, no TMDLs and WLAs have been adopted to address impaired water bodies in the Riverside County portion of the Santa Margarita Hydrologic Unit. When TMDLs and WLAs are adopted and approved, they will be incorporated into the MS4 permit. The TMDL WLAs in MS4 Permits can be addressed using water quality-based numeric effluent limitations (WQBELs) calculated at end-of-pipe. WQBELs must be consistent with the assumptions and requirements of the WLAs.¹⁵⁸

Finding E.10. This Order requires each Copermittee to effectively prohibit all types of unauthorized discharges of non-storm water into its MS4. However, historically pollutants have been identified as present in dry weather non-storm water discharges from the MS4s through 303(d) listings, monitoring conducted by the Copermittees under Order No. R9-2004-001, and there are others expected to be present in dry weather non-storm water discharges because of the nature of these discharges. This Order includes action levels for pollutants in non-storm water, dry weather discharges from the MS4. The non-storm water action levels are designed to ensure that the Order's requirement to effectively prohibit all types of unauthorized discharges of non-storm water into the MS4 is being complied with. Non-storm water action levels in the Order are based upon numeric or narrative water quality objectives and criteria as outlined in the Basin Plan, the State Water Board's Water Quality Control Plan for Ocean Waters of California (Ocean Plan), and State Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). An exceedance of an action level requires specified responsive action by the Copermittees. This Order describes what actions the Copermittees must take when an exceedance of an action level is observed. Exceedances of non-storm water action levels do not alone constitute a violation of this Order but could indicate non-compliance with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4 or other prohibitions established in this Order. Failure to undertake required source investigation and elimination action following an exceedance of a non-storm water action level (NAL or action level) is a violation of this Order. The San Diego Water Board recognizes that use of action levels will not necessarily result in detection of all unauthorized sources of non-storm water discharges because there may be some discharges in which pollutants do not exceed established action levels. However, establishing NALs at levels appropriate to protect water quality standards is expected to lead to the identification of significant sources of pollutants in dry weather non-storm water discharges.

Discussion of Finding E.10. This Order includes the existing requirement that Copermittees effectively prohibit all types of unauthorized non-storm water discharges in the MS4s. It also includes the following prohibition set forth in the Basin Plan: "The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in CWC section 13050 is prohibited." (Prohibition A.1.) As discussed in the Order's Findings on discharge characteristics, e.g., C.2., C.4., C.6., C.7., C.9., C.14., and C.15., the Copermittees'

¹⁵⁸ Per 40 CFR 122.44(d)(1)(vii)(B)

reliance on BMPs for the past 20 years has not resulted in compliance with applicable water quality standards or compliance with the requirement to effectively prohibit all types of unauthorized discharges of non-storm water in the MS4. The San Diego Water Board has evaluated (in accordance with 40 CFR 122.44(d)(1)) past and existing control BMPs, non-storm water effluent monitoring results, the sensitivity of the species in receiving waters (e.g. endangered species), and the potential for effluent dilution, and has determined that existing BMPs to control pollutants in storm water discharges are not sufficient to protect water quality standards in receiving waters, and the existing requirement that Copermittees effectively prohibit all types of unauthorized non-storm water discharges into the MS4, historically results in the discharge of pollutants to the receiving waters.

Therefore it is appropriate to establish dry weather non-storm water action levels based upon established water quality standards to measure pollutants levels in the discharge of dry weather non-storm water that could indicate non-compliance with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4 and/or that these discharges are causing, or threatening to cause, a condition of pollution, contamination or nuisance in the receiving waters. NALs are not numeric effluent limitations. While not alone a violation of this Order, an exceedance of an NAL requires the Copermittees to initiate a series of source investigation and elimination actions to address the exceedance. Results from the NAL monitoring are to be used in developing the Copermittees annual work plans. Failure to undertake required source investigation and elimination action following an exceedance of an NAL is a violation of this Order. Also refer to further discussion in the Directives section C of the Fact Sheet.

A purpose of monitoring, required under this and previous Orders, as stated in the Monitoring and Reporting Program is to “detect and eliminate illicit discharges and illicit connections to the MS4” and to answer the following core management questions:

1. Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
2. What is the extent and magnitude of the current or potential receiving water problems?
3. What is the relative MS4 discharge contribution to the receiving water problem(s)?
4. What are the sources of MS4 discharge that contribute to receiving water problem(s)?
5. Are conditions in receiving waters getting better or worse?

For the past 20 years, Copermittees have utilized their illicit connection / illicit discharge (IC/ID) program to identify and eliminate non-storm water discharges that are sources of pollutants to the MS4. The Copermittees are also subject to the requirement to effectively prohibit all types of unauthorized discharges of non-storm water into the MS4s. Historically, discharges of unauthorized non-storm water do

occur, resulting in the discharge of pollutants to the receiving water. NALs have been included in this Order to ensure that the Copermittees comply with the requirement to effectively prohibit all types of unauthorized non-storm water discharges that are a source of pollutants in the receiving waters.

Finding E.12. With this Order, the San Diego Water Board has completed the re-issuance of the fourth iteration of the Phase I MS4 NPDES Permits for the Copermittees in the portions of San Diego County, Orange County, and Riverside County within the San Diego Region. The NPDES Permit requirements issued to the Copermittees in each county have substantially the same core requirements such as discharge prohibitions, receiving water limitations, jurisdictional components, and monitoring. In addition, the Copermittees cooperate regionally to develop monitoring with the Southern California Stormwater Monitoring Coalition and to develop program effectiveness with the California Stormwater Quality Association. Regional programs could improve the Copermittees' compliance with other permit components such as development of the Hydromodification Management Plans and Retrofitting Existing Development with more consistent implementation and cost sharing. Re-issuing the NPDES Permit requirements within five years for three counties under three different permits requires the San Diego Water Board to expend significant time and resources for issuance of the permits through three separate public proceedings, thereby greatly reducing the time and resources available to oversee compliance. Multiple permits also create confusion for determining compliance among regulated entities, especially the land development community. The San Diego Water Board recognizes that issuing a single MS4 permit for all Phase I entities in the San Diego Region will provide consistent implementation, improve communication among agencies within watersheds crossing multiple jurisdictions, and minimize staff resources spent with each permit renewal. The San Diego Water Board plans to develop a single regional MS4 permit prior to the expiration of this Order that will transfer the Copermittees' enrollment to the regional permit upon expiration of this Order.

Discussion of Finding E.12. With the advances in storm water science and regulation in the last decade, the additional complexity has resulted in a more significant amount of San Diego Water Board staff time and resources required to complete each Phase I MS4 Permit renewal. On average, the renewal of the fourth iteration of the Phase I MS4 Permits for each county has taken approximately 2 years and multiple staff to complete. The time and resources required to complete each renewal has diverted staff time and resources away from the San Diego Water Board's ability to oversee and ensure compliance with the permit provisions and requirements.

With the adoption of this Order, all the Phase I MS4s in the San Diego Region (i.e. Copermittees of Orange County, Riverside County and San Diego County) will essentially be subject to the same set of core requirements. Because there are now more similarities than differences among the permit provisions and requirements, developing and issuing a single regionwide permit to the Phase I MS4 entities may be appropriate with the next (i.e. fifth) iteration of the Phase I MS4 Permits.

This approach would provide a consistent set of regulatory requirements throughout the San Diego Region, thereby reducing the confusion that is created with different sets of requirements between areas in close proximity to each other. A regional set of requirements for the discharge prohibitions, receiving water limitations, jurisdictional program components (i.e., new development, construction, existing development, retrofitting), hydromodification management plans, low impact development design requirements, and monitoring would also make it easier for the programs in the three counties to share and transfer information and program efficiencies, and cooperate on a regionwide basis. Regionwide consistency would be especially beneficial where there are multiple counties involved in implementing permit requirements, such as the Santa Margarita watershed with parts of San Diego County and Riverside County, regional TMDLs (e.g., beaches and creeks bacteria TMDLs), or regional monitoring efforts or studies (e.g., Southern California Stormwater Monitoring Coalition, Bight '08).

An additional benefit would be the reduction of staff time and resources that will be required to renew future Phase I MS4 Permits, which would only be required once every 5 years for a single regionwide permit instead of once every 1 to 3 years for three separate permits. Because of these benefits, the San Diego Water Board plans to develop a single regional Phase I MS4 Permit with the next iteration of the San Diego County MS4 Permit, which will incorporate the Orange County and Riverside County Phase I MS4 entities upon the expiration of their respective permits, or sooner.

F. Public Process

Finding F.1. The San Diego Water Board has notified the Copermitees, all known interested parties, and the public of its intent to consider adoption of an Order prescribing waste discharge requirements that would serve to renew an NPDES permit for the existing MS4 discharges of pollutants to waters of the U.S.

Discussion of Finding F.1. Public notification of development of a draft permit is required under Federal regulation 40 CFR 124.10(a)(1)(ii). This regulation states “(a) Scope. (1) The Director shall give public notice that the following actions have occurred: (ii) A draft permit has been prepared under Sec. 124.6(d).” Public notifications “shall allow at least 30 days for public comment,” as required under Federal regulation 40 CFR 124.10(b)(1).

Finding F.2. The San Diego Water Board has held a public hearing on November 10, 2010 and heard and considered all comments pertaining to the terms and conditions of this Order.

Discussion of Finding F.2. Public hearings are required under CWC section 13378, which states “Waste discharge requirements and dredged or fill material permits shall be adopted only after notice and any necessary hearing.” Federal regulation 40 CFR 124.12(a)(1) also requires public hearings for draft permits, stating “The Director shall hold a public hearing whenever he or she finds, on the basis or requests, a significant degree of public interest in a draft permit(s).” Regarding public notice of a public hearing, Federal regulation 40 CFR 124.10(b)(2) states that “Public notice of a public hearing shall be given at least 30 days before the hearing.”

IX. DIRECTIVES

This section discusses significant changes which have been made to the requirements of the Order from the requirements which were previously included in Order No. R9-2004-001. For each section of the Order that has been changed there is a discussion which describes the change that was made and provides the rationale for the change. In addition, comments on the Copermittees' ROWD recommendations, as they pertain to each changed requirement of the Order, are provided.

Requirements of the Order that are not discussed in this section have not been significantly changed from those requirements previously included in Order No. R9-2004-001. For such requirements, discussions and rationale for the requirements can be found in section VIII of the Fact Sheet/Technical Report for San Diego Water Board Order No. R9-2004-001, dated July 14, 2004. Section VIII also provides additional background information for those requirements that have undergone significant change which are described in detail in this report. The Fact Sheet/Technical Report is available for download at:

http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/rsd_stormwater.shtml

Legal authority citations are provided for each major section of the Order. These citations apply to all applicable requirements within the section for which they are provided.

A. Prohibitions and Receiving Water Limitations

The following legal authority applies to section A:

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: The Water Quality Control Plan for the San Diego Basin (Basin Plan) contains the following waste discharge prohibition: "The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in CWC section 13050, is prohibited."

CWC section 13050(l) states "(1) 'Pollution' means an alteration of the quality of waters of the state by waste to a degree which unreasonably affects either of the following: (A) The water for beneficial uses. (B) Facilities which serve beneficial uses. (2) 'Pollution' may include "contamination."

CWC section 13050(k) states “Contamination’ means an impairment of the quality of waters of the state by waste to a degree which creates a hazard to public health through poisoning or through the spread of disease. ‘Contamination’ includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.”

CWC section 13050(m) states “Nuisance’ means anything which 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.”

CWC section 13241 requires each Regional Water Board to “establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance [...]”

CWC section 13243 provides that “A regional board, in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.”

CWC section 13263(a) provides that waste discharge requirements prescribed by the San Diego Water Board implement the Basin Plan.

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A - D) require municipalities to implement controls to reduce pollutants in storm water runoff from commercial, residential, industrial, and construction land uses or activities.

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(A - D) require municipalities to have legal authority to control various discharges to their MS4.

Federal NPDES regulation 40 CFR 122.44(d)(1) requires municipal storm water 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 the Director determines 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.”

Section A of the Order combines two previously distinct requirement sections – Prohibitions and Receiving Water Limitations. These sections have been combined into one section for organization purposes and to reduce redundancy, since both sections address the same issue. These changes have no net effect on the implementation and enforcement of the Order.

Section A.3 describes the “iterative process.” The Copermittees must reduce the discharge of storm water pollutants to the MEP and ensure that their MS4 discharges do not cause or contribute to violations of water quality standards. If the Copermittees have reduced storm water pollutant discharges to the MEP, but their discharges are still causing or contributing to violations of water quality standards, the Order provides a clear and detailed process for the Copermittees to follow. This process is often referred to as the “iterative process” and can be found at section A.3. The language of section A.3 is prescribed by the State Water Board and is included in MS4 permits statewide. Section A.3 essentially requires additional BMPs to be implemented until MS4 storm water discharges no longer cause or contribute to a violation of water quality standards.

The State Policy with respect to maintaining high quality waters has been added to clarify that discharges from the MS4 that cause or contribute to a violation of the Policy for high quality waters is prohibited.

The Copermittee must notify the San Diego Water Board of storm water discharges that are causing or contributing to an exceedance of applicable water quality standards. This notification can be in the form of an email or letter, with a summary of the pollutants in the storm water discharge that are exceeding the applicable water quality standards, and where and when the exceedances occurred. After notification is provided to the San Diego Water Board, the Copermittee must submit a report that describes the BMPs that are currently being implemented and the additional BMPs that will be implemented by the Copermittee to prevent or reduce the pollutants in the storm water discharge from causing or contributing to the exceedances of the applicable water quality standards. The report is separate from the notification and may be submitted with the Annual Report, unless the San Diego Water Board requests an earlier submittal of the report.

B. Non-Storm Water Discharges

The following legal authority applies to section B:

Broad Legal Authority: CWA sections 402, 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), 40 CFR 122.26(d)(2)(iv) and 40 CFR 122.44.

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B) requires MS4 operators “to detect and remove (or require the discharger to the municipal separate storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Copermittees shall prevent all types of illicit discharges into the MS4 except for certain non-storm water discharges.

Section B of the Order has been reworded to simplify and clarify the requirements for addressing non-storm water discharges that are not prohibited. This rewording has no net effect on the implementation and enforcement of the Order.

Section B.2 identifies categories of non-storm water discharges that do not have to be addressed as illicit discharges unless identified by a Copermittee or the San Diego Water Board as a category that is a source of pollutants to waters of the U.S. If a Copermittee or the San Diego Water Board identifies a category of non-storm water discharges as a source of pollutants to waters of the U.S., the category must be addressed through a program, including inspections, to implement and enforce an ordinance, orders, or other similar means to prevent illicit discharges to the MS4.¹⁵⁹

The program includes enforcement of an ordinance, orders, or other legal authority that prohibits the category of non-storm water discharges from entering the MS4. Implementation of the program is through the IC/ID program, described in Directive F.4, which includes requirements for investigating/inspecting illicit discharges and enforcing the ordinance, orders, or other legal authority that prohibits the category of non-storm water discharges from entering the MS4.

The federal regulations list several categories of non-storm water discharges or flows that do not have to be addressed by the program unless a Copermittee or the San Diego Water Board identifies a category as a source of pollutants to waters of the U.S. These categories are often referred to as “exempt” discharges that are “allowed” to be discharged into the MS4. There are two types of categories of non-storm water discharges or flows that are considered “exempt”: 1) anthropogenic (e.g., water line

¹⁵⁹ Code of Federal Regulations Title 40 section 122.26(d)(2)(iv)(B)(1)

flushing, air conditioner condensate), and 2) non-anthropogenic (e.g., springs, rising ground water).

For “exempt” anthropogenic categories of non-storm water discharges or flows that are identified as sources of pollutants to waters of the U.S., those categories become illicit discharges and are no longer “allowed” to be discharged to the MS4. The IC/ID program addresses those discharges (i.e. investigation of illicit discharges and enforcement of ordinances prohibiting illicit discharges to the MS4).

For “exempt” non-anthropogenic discharges or flows that are identified as sources of pollutants to waters of the U.S., the IC/ID program cannot be fully implemented with enforcement. Categories of non-storm water discharges or flows that originate due to a natural source (e.g., springs or rising ground water) can be investigated and identified, but it would be difficult to enforce ordinances prohibiting these discharges to the MS4. In these cases, the Copermittee may need to implement other control measures to prevent the illicit discharges from non-anthropogenic sources from entering the MS4 (e.g., sealing the storm drains to prevent infiltration).

The IC/ID program also identifies categories of “exempt” non-storm water discharges that are sources of pollutants to waters of the U.S. If an individual discharge within a category of “exempt” non-storm water discharges is found to be an isolated incidence or source of pollutants and not representative of the category as a whole, the entire category does not need to be removed from the list of “exempt” categories of non-storm water discharges. If, however, the Copermittees or the San Diego Water Board find that a pattern of isolated incidents or sources are consistently discharging pollutants to waters of the U.S. over a period of time, or throughout the region, the category must be identified as a source of pollutants to waters of the U.S. warranting removal from the list of “exempt” categories of non-storm water discharges.

The San Diego Water Board and several municipalities throughout the San Diego Region (e.g., cities and counties of Orange County and San Diego County) have reported and/or identified runoff originating from landscape irrigation as likely sources of dry weather flows conveying pollutants into their MS4s. This is also supported by legislation (Assembly Bill 1881) recently enacted by the State of California, which has identified runoff resulting from over irrigation not only as a waste of water resources, but also as a source of pollutants to the state’s waterways. Discharges from landscape irrigation have been identified by the San Diego Water Board and the Copermittees as a source of pollutants and conveyance of pollutants to waters of the United States in the following:

- In educational materials developed by The Cities and County of Riverside “Only Rain in the Storm Drain” Pollution Prevention Program, the Landscape and Garden brochure states: “Soil, yard wastes, *over-watering* [emphasis added] and garden chemicals become part of the urban runoff mix that winds it way through streets, gutters and storm drains before entering lakes, rivers, streams, etc.”

- In an educational survey developed by The Cities and County of Riverside “Only Rain in the Storm Drain” Pollution Prevention Program distributed at Public Outreach events, the answer to the question about where lawn irrigation water goes states: *“Water that leaves your lawn from irrigation...can pick up motor oil and grease from vehicles, excess fertilizer from your lawn, bacteria from pet waste, and excess pesticides from your yard. These pollutants can be carried down streets and storm drains directly to our streams, lakes and rivers without treatment!”*
- In 2006, the State Water Board allocated Grant funding to the Smarttimer/EdgescapE Evaluation Program (SEEP). The project targets irrigation runoff by retrofitting existing development and documenting the conservation and runoff improvements. The Grant Application states that “Irrigation runoff contributes flow & pollutant loads to creeks and beaches that are 303(d) listed for bacteria indicators”. Furthermore, the grant application states that “Regional program managers agree that the reduction and/or elimination of irrigation-related urban flows and associated pollutant loads may be key to successful attainment of water quality and beneficial use goals as outlined in the Basin Plan and Bacteria TMDL over the long term”. This is reinforced in the project descriptions and objectives: “Elevated dry-weather storm drain flows, composed primarily ... of landscape irrigation water wasted as runoff, carry pollutants that impair recreational use and aquatic habitats all along Southern California’s urbanized coastline. Storm drain systems carry the wasted water, along with landscape derived pollutants such as bacteria, nutrients and pesticides, to local creeks and the ocean. Given the local Mediterranean climate, excessive perennial dry season stream flows are an unnatural hydrologic pattern, causing species shifts in local riparian communities and warm, unseasonal contaminated freshwater plumes in the near-shore marine environment”. The basis of this grant project is that over-irrigation (landscape irrigation, irrigation water and lawn watering) into the MS4 is a source and conveyance of pollutants. In addition, they indicate that the alteration of natural flows is impacting the Beneficial Uses of waters of the State. The results of this study can be applied broadly to any area where over-irrigation takes place, including Riverside County. Preliminary results from the study indicate that that over-irrigation (landscape irrigation, irrigation water and lawn watering) into the MS4 is a source and conveyance of pollutants.
- In the Watershed Action Plan Annual Report(s) for the 2006-2007 reporting period, submitted by the County of Orange, Orange County Flood Control District and Copermittees within the San Juan Creek, Laguna Coastal Streams, Aliso Creek, and Dana Point Coastal Streams Watersheds, the Orange County Copermittees, within their Watershed Action Strategy Table for Fecal Indicator Bacteria state that *“Support programs to reduce or eliminate the discharge of anthropogenic dry weather nuisance flow throughout the [...] watershed. Dry weather flow is the transport medium for bacteria and other 303(d) constituents of concern”*. Additionally, they state that *“conditions in the MS4 contribute to high seasonal bacteria propagation in-pipe during warm weather. Landscape irrigation is a major*

contributor to dry weather flow, both as surface runoff due to over-irrigation and overspray onto pavements; and as subsurface seepage that finds its way into the MS4."

- In the Carlsbad Watershed Urban Runoff Management Program (WURMP) Fiscal Year 2008 Annual Report, submitted by the Carlsbad Watershed Copermittees (Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista, and the County of San Diego), the Carlsbad Watershed Copermittees state *"The Carlsbad Watershed Management Area (WMA) collective watershed strategy identifies bacteria, sediment, and nutrients as high priority water quality pollutants in the Agua Hedionda (904.3 – bacteria and sediment), Buena Vista (904.2 – bacteria), and San Marcos Creek (904.5 – nutrients) Hydrologic Areas. Bacteria, sediment, and nutrients have been identified as potential discharges from over-irrigation."*
- In Appendix D of the San Diego Bay WURMP 2007-2008 Annual Report, submitted by the San Diego Bay Watershed Copermittees (Cities of Chula Vista, Coronado, Imperial Beach, La Mesa, Lemon Grove, National City, and San Diego, the County of San Diego, the Port of San Diego, and the San Diego County Airport Authority), the San Diego Bay Watershed Copermittees identified *over-irrigation of lawns* from business and/or residential land uses as a likely pollutant source for bacteria, pesticides, and sediment.
- On September 28, 2006 Governor Arnold Schwarzenegger approved Assembly Bill 1881, The Water Conservation in Landscaping Act (AB 1881, Laird). The act requires cities, counties, and charter cities and charter counties, to adopt landscape water conservation ordinances by January 1, 2010. Additionally, the law required the Department of Water Resources (DWR) to prepare a Model Water Efficient Landscape Ordinance for use by local agencies. The Water Efficient Landscape Ordinance was approved by the Office of Administrative Law on September 10, 2009. All local agencies were required to adopt a water efficient landscape ordinance by January 1, 2010. Local agencies could adopt the Water Efficient Landscape Ordinance developed by DWR, or an ordinance considered at least as effective as the Model Ordinance. The Water Efficient Landscape Ordinance includes a requirement that local agencies prohibit runoff from irrigation (§ 493.2): *"Local agencies shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff from leaving the target landscape [emphasis added] due to low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures. Penalties for violation of these prohibitions shall be established locally."*
- On October 08, 2009, the State of California Department of Water Resources issued a letter to all cities and counties within the State of California giving reminder of required adoption of the Water Efficient Landscape Ordinance. The letter states that: *"Other benefits include reduced irrigation runoff, reduced*

pollution of waterways [*emphasis added*], drought resistance, and less green waste.”

- On December 18, 2009, the San Diego Water Board adopted Order. No. R9-2009-0002, the fourth-term Orange County permit, which found that over-irrigation (landscape irrigation, irrigation water and lawn watering) into the MS4 is a source and conveyance of pollutants. Landscape irrigation, irrigation water, and lawn watering were categories removed from the list of non-storm water discharges not prohibited to be discharged into the MS4.
- The San Diego Water Board has responded to complaints about and observed runoff from over-irrigation entering the MS4s in the Riverside County portion of the San Diego Region.

Several significant changes have been made to the list of categories of non-storm water discharges that do not have to be addressed as illicit discharges. A footnote has been added to dechlorinated swimming pool discharges on the list to specify that this category does not include saline swimming pool discharges. The list has been modified to remove the landscape irrigation, irrigation water and lawn watering “exempt” discharge categories (i.e. no longer “allowed” to enter the MS4). Language has been also added to the section to clarify differences in the federal regulations under 40 CFR 122.26(d)(iv)(B) and for the authority of the Director (i.e. San Diego Water Board) in regards to identifying exempted discharges.

Because the landscape irrigation, irrigation water and lawn watering “exempt” discharge categories have been removed from section B, per identification as a source and conveyance of pollutants to waters of the United States when discharged from the MS4, these illicit discharges must be addressed per 40 CFR 122.26(d)(iv)(B). The San Diego Water Board is requiring these discharges be addressed as illicit discharges by the Copermittees. This is consistent with the Federal Regulations (55 FR 48037). Thus, the discharges are to be prohibited via ordinance, order, or similar means and incorporated as part of the Copermittees IC/ID program.

Section B.3 has been clarified by the recognition of building fire suppression system maintenance (e.g. fire sprinklers) as an illicit discharge. The San Diego Water Board has found that such discharges contain waste, and as such the San Diego Water Board is requiring these discharges be addressed as illicit discharges by the Copermittees. This is consistent with the Federal Regulations (55 FR 48037). Thus, the discharges are to be prohibited via ordinance, order or similar means and incorporated as part of the Copermittees IC/ID program.

C. Non Storm Water Dry Weather Action Levels

The following legal authority applies to section C:

Broad Legal Authority: CWA section 402, 402(p)(3)(B)(ii), CWC §13377. 40 CFR 122.26(d)(2)(i)(B, C, E, and F), and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority:

CWA section 402(p)(3)(B)(ii) provides that MS4 permits “shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) provides that the 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.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Copermittee include in its proposed management program “a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system; this program description shall address all types of illicit discharges, however the [listed exempt] 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.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) provides that the Copermittee include in its proposed management program “a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) provides that the Copermittee include in its proposed management program “procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Section C establishes non-storm water dry weather action levels (see also Finding C.14, Finding E.10, and the Discussion for those sections).

Non-exempted, non-storm water discharges are to be effectively prohibited from entering the MS4 or become subject to another NPDES permit (see Federal Register, Vol. 55, No. 222, pg. 47995). Conveyances which continue to accept non-exempt, non-storm water discharges do not meet the definition of MS4 and are not subject to section 402(p)(3)(B) of the CWA unless the discharges are issued separate NPDES permits. Instead, conveyances that continue to accept non-exempt, non-storm water

discharges that do not have a separate NPDES permit are subject to sections 301 and 402 of the CWA (see Federal Register, Vol. 55, No. 222, pg. 48037).

The Order requires the sampling of a representative percentage of major outfalls and other identified stations within each hydrologic subarea. While it is important to assess all major outfall discharges from the MS4 into receiving waters, to date the Copermittees have implemented a dry-weather monitoring program that has consisted of 4 water quality parameters collected in receiving waters, not major outfalls. In the ROWD the Copermittees have proposed relocating IC/ID (non-storm water) monitoring sites to major outfalls and increasing the level of monitoring. It is expected that the Copermittees will need to utilize current 303(d) listings, land use, the history of IC/ID complaints and the sensitivity of receiving waters in the selection and annual sampling of a representative percentage of major outfalls in accordance with the requirements under section C.4. It is expected the selection of major outfalls will be done in conjunction with the Copermittees' required updates to the MS4 map in section F.4.b of the Order.

The Order requires an increase in the number and type of pollutants sampled in non-storm water from major outfalls. To date, Copermittees have not sampled major outfalls, only receiving waters, and sampling was limited to total dissolved solids, dissolved oxygen, pH, turbidity and specific conductance. Additional sampling was generally, though not always, conducted by Copermittees if initial sampling exceeded a Copermittee threshold. With the exception of dissolved oxygen, the current thresholds do not represent water quality objectives, as sampling may not trigger a threshold, but may still be exceeding a water quality objective. This Order requires non-storm water discharges to be sampled for additional pollutants including indicator bacteria, nutrients (nitrate and phosphorous), Methylene Blue Active Substances (MBAS), pesticides and metals. These pollutants are expected to be present in non-storm water discharges, are pollutants for which receiving waters are 303(d) listed as impaired or have been identified as present through receiving water monitoring.

Background and Rationale for Requirements

The San Diego Water Board developed the requirements for dry weather, non-storm water action levels based upon an evaluation of existing controls, monitoring and reporting programs (effluent and receiving water), special studies, and based upon Findings C.1 C.3, C.4, C.6, C.7 and C.14. In addition, the Copermittees' ROWD supports the establishment of action levels which can be used in the effectiveness assessment program to ensure a minimum level of program implementation and identify shortcomings in their MS4 programs.¹⁶⁰

¹⁶⁰ Riverside County Copermittees. 2009. Report of Waste Discharge (San Diego Region).

Water Quality Control Plan

CWA section 303(c) requires the state to establish Water Quality Standards (WQS). WQS define the water quality goals of a water body, or part thereof, by designating their use or uses to be made of the water and by setting criteria necessary to protect those uses.

The San Diego Water Board's Water Quality Control Plan for the San Diego Basin (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Basin Plan. The Basin Plan was adopted by the San Diego Water Board on September 8, 1994, and was subsequently approved by the State Water Board on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the San Diego Water Board and State Water Board.

National Toxics Rule (NTR) and California Toxics Rule (CTR)

The USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995, and November 9, 1999. The CTR was adopted by USEPA on May 18, 2000,¹⁶¹ and amended on February 13, 2001.¹⁶² These rules include water quality criteria for priority pollutants and are applicable to non-storm water discharges from the MS4. Criteria for 126 priority pollutants are established by the CTR. USEPA promulgated this rule to fill a gap in California water quality standards that was created in 1994 when a California court overturned the State's water quality control plans containing criteria for priority toxic pollutants. The federal criteria are legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the CWA.

Antidegradation Policy

Section 131.12 of 40 CFR requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Boards' Basin Plans implement, and incorporate by reference, both the State and federal antidegradation policies. Permitted non-storm water discharges from the MS4 are consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16.

¹⁶¹ Federal Register / Vol. 65, No. 97 / May 18, 2000 / Rules and Regulation P. 31861-31719; Code of Federal Regulations Title 40 Part 131

¹⁶² Federal Register / Vol. 66, No. 30 / February 13, 2001 / Rules and Regulation P. 9960-9962; Code of Federal Regulations Title 40 Part 131

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 115 of 199

Sources of Drinking Water Policy

State Water Board Resolution No. 88-63 establishes state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal and domestic supplies. Requirements of this Order include action levels, where appropriate, reflecting municipal and domestic supply use as all waters within the County of Riverside under this Order are specifically assigned municipal and domestic supply as a Beneficial Use.

Monitoring and Reporting

40 CFR section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement state and federal regulations. The Monitoring and Reporting Program can be found as Attachment E of the Order.

Dilution or Mixing Zones

In order to protect the Beneficial Uses of receiving waters from pollutants as a result of non-storm water MS4 discharges, this Order does not provide for a mixing zone or a zone of initial dilution except when the discharge is to the surf zone.

The San Diego Region has predominantly intermittent and ephemeral rivers and streams (Inland Surface Waters) which vary in flow volume and duration at spatial and temporal scales. Therefore, it is assumed that any non-storm water discharge from the MS4 into the receiving water is likely to be of a quantity and duration that does not allow for dilution or mixing. For ephemeral systems, non-storm water discharges from the MS4 are likely to be the only surface flows present within the receiving water during the dry season. Additionally, all surface waters within the jurisdiction of this Order have been designated in the Basin Plan with municipal supply (MUN) as a beneficial use.

It is appropriate to base numeric action levels for dry weather non-storm water discharges on these considerations.

Establishment of Action Levels

Action levels in the Order are based upon numeric or narrative water quality objectives and criteria as defined in the Basin Plan and the State Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The San Diego Water Board recognizes that use of action levels will not necessarily result in detection of all unauthorized sources of non-storm water discharges because there may be some discharges in which pollutants do not exceed established action levels.

In June of 2006, the State Water Board's Blue Ribbon Storm Water Panel released its report titled 'The Feasibility of Numerical Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities.' The

report only examined numerical limits as applied to storm water and not non-storm water. In the recommendations, the Blue Ribbon panel proposed storm water action levels which are computed using statistical based population approaches. For example, section D of the Permit uses a recommended statistical approach to develop storm water action levels. The Blue Ribbon panel did not examine the efficacy of action levels or recommendations for development of action levels for non-storm water discharges.

For discharges to inland surface waters, action levels are based on the USEPA water quality criteria for the protection of aquatic species, the USEPA water quality criteria for the protection of human health, water quality criteria and objectives in the applicable State plans, effluent concentration available using best available technology, and 40 CFR 131.38. Since the assumed initial dilution factor for the discharge is zero and a mixing zone is not allowed, a non-storm water discharge from the MS4 could not cause an excursion from numeric receiving water quality objectives if the discharge is in compliance with the action levels contained in the Order.

Dry weather monitoring of non-storm water conducted in receiving waters under the previous Order (Order No. R9-2004-001), which relies on BMPs as controls to protect water quality standards, has identified the presence of pollutants commonly found in non-storm water discharges. Monitoring of Indicator Bacteria, pH, Dissolved Oxygen, Phosphorus, Nitrate, Turbidity, Methylene Blue Active Substances (MBAS), and metals in receiving waters has shown concentrations that exceed state water quality criteria. It is appropriate to establish numeric action levels for these pollutants to ensure that the Copermittees are complying with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4s.

Water Quality Limited Segments on the current 303(d) list (2008) within the jurisdiction of this Order have been identified due to exceedances of Sulfate and Total Dissolved Solids criteria from a source which is currently unknown (see Table 2). These pollutants are not monitored for in non-storm water effluent under the current non-storm water MS4 monitoring program. While this Order does not establish a numeric action level for these constituents at this time, this Order now requires non-storm water MS4 discharge monitoring to include monitoring for Sulfates, Total Dissolved Solids, and Chlorides.

Priority pollutants analyzed included Cadmium, Copper, Chromium, Lead, Nickel, Silver and Zinc. These priority pollutants are likely to be present in non-storm water MS4 discharges (see Finding C.3) though dissolved metal effluent monitoring was not conducted under the previous Order. The most stringent applicable water quality criteria have been identified for these seven metals and, excluding Chromium (VI), and all are dependent on receiving water hardness. The conversion factors for Cadmium and Lead are also water hardness dependent (40 CFR 131.38(b)(2)). These levels are established as the action levels for these constituents.

While effluent monitoring is not available from the previous Order, the monitoring that was done for metal concentrations in receiving waters often lacked a measurement of receiving water hardness. Due to the multiple point source discharges of non-storm water from the MS4, a discharge may enter a receiving water whose hardness will vary temporally. In addition, hardness may vary spatially within and among receiving waters.

However, other information is available to determine the appropriateness of an action level. Existing monitoring concentrations absent of receiving water data, no dilution credit or mixing zone allowance, current 303(d) listings of receiving waters for other pollutants, receiving water monitoring data, and the classification of waters as critical habitat for endangered and species of concern, provide evidence that NALs are appropriate for these priority pollutants at this time in order to ensure that the Copermittees comply with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4s.

Existing receiving water pollutant concentration data (see attachment F) provides evidence that it is appropriate to include NAL based comparisons to water quality criteria given observed hardness levels, assumption of a conservative hardness level when data is absent, or designation of receiving waters as having MUN as a beneficial use. Although dry weather receiving water data is limited (see attachment F), data has been collected that documents exceedances of CTR criteria for Lead, Nickel, and Copper given the measured hardness for the receiving water. Absent receiving water hardness, Zinc has been detected in receiving waters at concentrations which may be in exceedance of CTR criteria depending on receiving water hardness. Additionally, Cadmium and Chromium were detected at elevated levels, though the concentrations were within CTR criteria given the observed receiving water hardness. However, these detections typically coincided with detections of other exceedances of water quality standards for other pollutants, including metals. Chromium and Nickel were also detected at levels that did not exceed CTR, but did exceed Maximum Contaminant Levels (MCLs) for receiving waters.

As discussed, inland surface waters have conservatively been allotted a mixing zone and dilution credit of zero. As such, any discharge of these priority pollutants is likely to impact the receiving water, regardless of the quantity or rate of discharge.

As discussed in Finding C.7 and discussion, multiple receiving waters within the County of Riverside are 303(d) listed for a number of pollutants, including toxicity. The 303(d) listing of a water body as impaired provides evidence that the receiving water(s) are already experiencing negative impacts. These water quality limited segments are more susceptible to degradation from the synergistic addition of more pollutants, even from upstream discharges. It is therefore appropriate to include NALs designed to ensure that the Copermittees are complying with the requirement to effectively prohibit all types of unauthorized discharges of non-storm water into the MS4s.

Copermittees have monitored the receiving waters for MS4 discharges pursuant to requirements under Order No. R9-2004-001. Dry weather receiving water data indicates poor conditions within waters receiving non-storm water MS4 discharges. Bioassessment conducted under the Order (2004-present) has documented all non-reference sites as consistently having poor or very poor IBI scores, likely due in part to receiving water chemistry and toxicity¹⁶³.

Receiving waters and downstream receiving waters within the jurisdiction of this Order contain species and/or are classified as critical habitat (or are exempted pursuant to Integrated National Resource Management Plans) for endangered, threatened, and state species of special concern including, but not limited to, *E. newberryi*, *A. marmorata pallida*, and *G. orcutti*.

Furthermore, the Santa Margarita River has been designated with the RARE beneficial use.

Dry Weather Non-Storm Water Action Levels Calculations for Discharges to Inland Surface Waters

On the basis of the foregoing discussion, the NALs were calculated with the following considerations and assumptions:

No dilution credit is considered for the discharge. Therefore, the discharge must comply with the Water Quality Objective at the point of discharge.

For NALs based on CTR, implementation was done using the procedure list as outlined in the State Implementation Plan (SIP) (see below example).

NAL CTR/SIP Calculation – Chromium VI Example:

Criteria for Priority Toxic Pollutants in the State of California is described in the CTR table listed in 40 CFR 131.38.

¹⁶³ Riverside County Copermittees 2007-08 and 2008-09 Annual Progress Reports.

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 119 of 199

A		B Freshwater		C Saltwater		D Human Health (10 ⁻⁶ risk for carcinogens) For consumption of:	
# Compound	CAS Number	Criterion Maximum Conc. ^d B1	Criterion Continuous Conc. ^d B2	Criterion Maximum Conc. ^d C1	Criterion Continuous Conc. ^d C2	Water & Organisms (μ g/L) D1	Organisms Only (μ g/L) D2
1. Antimony	7440360					14 a,s	4300 a,t
2. Arsenic ^b	7440382	340 i,m,w	150 i,m,w	69 i,m	36 i,m		
3. Beryllium	7440417					n	n
4. Cadmium ^b	7440439	4.3 e,i,m,w,x	2.2 e,i,m,w	42 i,m	9.3 i,m	n	n
5a. Chromium (III)	16065831	550 e,i,m,o	180 e,i,m,o			n	n
5b. Chromium (VI) ^b	18540299	16 i,m,w	11 i,m,w	1100 i,m	50 i,m	n	n
6. Copper ^b	7440508	13 e,i,m,w,x	9.0 e,i,m,w	4.8 i,m	3.1 i,m	1300	
7. Lead ^b	7439921	65 e,i,m	2.5 e,i,m	210 i,m	8.1 i,m	n	n
8. Mercury ^b	7439976	[Reserved]	[Reserved]	[Reserved]	[Reserved]	0.050 a	0.051 a
9. Nickel ^b	7440020	470 e,i,m,w	52 e,i,m,w	74 i,m	8.2 i,m	610 a	4600 a
10. Selenium ^b	7782492	[Reserved] p	5.0 q	290 i,m	71 i,m	n	n
11. Silver ^b	7440224	3.4 e,i,m		1.9 i,m			
12. Thallium	7440280					1.7 a,s	6.3 a,t
13. Zinc ^b	7440666	120 e,i,m,w,x	120 e,i,m,w	90 i,m	81 i,m		

Freshwater criterion maximum concentration (CMC) = 16 ug/L

Freshwater criterion continuous concentration (CCC) = 11 ug/L

These criteria are expressed in terms of the dissolved fraction of the metal in the water column. [See footnote "m" to Table in paragraph (b)(1) of 40 CFR 131.38].

40 CFR 122.45(c) requires that this Order include effluent limitations as total recoverable concentration; therefore it is appropriate to include action levels also as total recoverable concentration.

The SIP requires that if it is necessary to express a dissolved metal value as a total recoverable and a site-specific translator has not yet been developed, the San Diego Water Board shall use the applicable conversion factor from 40 CFR 131.38.

The term "Conversion Factor" (CF) represents the recommended conversion factor for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column.

Total recoverable concentration * CF = Dissolved concentration criterion

or

Total recoverable concentration = Dissolved concentration criterion/ CF

§ 131.38

40 CFR Ch. I (7-1-08 Edition)

Metal	Conversion factor (CF) for freshwater acute criteria	CF for freshwater chronic criteria	CF for saltwater acute criteria	CF ^a for saltwater chronic criteria
Antimony	(^d)	(^d)	(^d)	(^d)
Arsenic	1.000	1.000	1.000	1.000
Beryllium	(^d)	(^d)	(^d)	(^d)
Cadmium	^b 0.944	^b 0.909	0.994	0.994
Chromium (III)	0.316	0.860	(^d)	(^d)
Chromium (VI)	0.982	0.962	0.993	0.993
Copper	0.960	0.960	0.83	0.83
Lead	^b 0.791	^b 0.791	0.951	0.951
Mercury				
Nickel	0.998	0.997	0.990	0.990
Selenium		(^c)	0.998	0.998

CF for Chromium VI = .982 and .962, so the total recoverable concentrations for chromium VI:

16 ug/L dissolved (CMC)/ 0.982 (CF) = 16.3 ug/L total recoverable CMC

11 ug/L dissolved (CCC) / 0.962 (CF) = 11.4 ug/L total recoverable CCC

Effluent Variability multiplier and Coefficient of Variation (CV)

For each concentration based on an aquatic life criterion, the long-term average (LTA) is calculated by multiplying the concentration with a factor that adjusts for effluent variability. The multiplier can be found in Table 1 of the SIP. Since this Order does not have existing data to properly conduct a variability analysis in accordance with the SIP, the CV has been set equal to 0.6 per SIP requirements. The current effluent data is limited due to the small number of representative outfalls sampled, the lack of outfalls discharging to representative water bodies within the Region, and the targeted nature of the sampling design.

Based upon a CV of 0.6, Table 1 of the SIP requires an effluent variability as follows:

Acute Multiplier = 0.321

Chronic Multiplier = 0.527

The long-term average (LTA) is calculated by multiplying the total recoverable concentrations for zinc with the acute and chronic multipliers:

LTA Acute = 16.3 ug/L * 0.321 = 5.23

LTA Chronic = 86 11.4 ug/L * 0.527 = 6.01

The maximum daily action level (MDAL) and average monthly action level (AMAL) will be based on the most limiting of the acute and chronic LTA, in the case for chromium VI the most limiting LTA is the acute of 5.23 ug/L

NALs are calculated by multiplying the most limiting LTA with a multiplier that adjusts for the averaging periods and exceedance frequencies of the criteria and the effluent limitations. The multiplier can be found in Table 2 of the SIP. Since this Order has insufficient data, the CV has been set to 0.6 and since sampling frequency is four times a month or less, n has been set equal to 4 per the SIP.

Table 2. Long-Term Average (LTA) Multipliers for Calculating
Effluent Limitations

Coefficient of Variation	MDEL Multiplier	AMEL Multiplier			MDEL/AMEL Multiplier		
	99 th Percentile Occurrence Probability	95 th Percentile Occurrence Probability			MDEL = 99 th Percentile AMEL = 95 th Percentile Occurrence Probability		
(CV)		n = 4	n = 8	n = 30	n = 4	n = 8	n = 30
0.1	1.25	1.08	1.06	1.03	1.16	1.18	1.22
0.2	1.55	1.17	1.12	1.06	1.33	1.39	1.46
0.3	1.90	1.26	1.18	1.09	1.50	1.60	1.74
0.4	2.27	1.36	1.25	1.12	1.67	1.82	2.02
0.5	2.68	1.45	1.31	1.16	1.84	2.04	2.32
0.6	3.11	1.55	1.38	1.19	2.01	2.25	2.62

Therefore, from Table 2 of the SIP, the LTA multipliers will be as follows:

MDAL Multiplier = 3.11

AMAL Multiplier = 1.55

The MDAL and AMAL limits are calculated by multiplying the LTA with an LTA multiplier for each limit:

MDAL = 5.23 ug/L * 3.11 = 16 ug/L

AMAL = 5.23 ug/L * 1.55 = 8.1 ug/L

Whole Effluent Toxicity (WET) Testing Requirements

A WET limit is required if a discharge causes, has a reasonable potential to cause, or contributes to an exceedance of applicable water quality standards, including numeric and narrative. Since these types of discharges are prohibited under this Order, WET limits are not applicable.

Discussion of AMALs, MDALs and Instantaneous Maximums

Where practical, action levels in this Order have been expressed as both AMALs and MDALs. Certain action levels may not practicably be expressed as AMALs and MDALs due to specific Basin Plan water quality objective language, sampling requirements and/or a lack of Criteria. Based upon the likely sampling frequency of the Copermittees, the frequency of sampling will occur such that grab samples are taken once per sampling day. This single sample would then be subject to MDALs and Instantaneous Maximum levels. In this case, the more conservative action level would apply. In addition, it is expected that some effluent monitoring will occur less than or equal to once per month. In this scenario, the MDAL, AMAL and Instantaneous Maximum levels would need to be met based upon one sample (unless sampling did

not occur). For some Basin Plan water quality objectives, AMALs have been excluded and only MDALs/Instantaneous Maximums set to prevent redundancy in action levels.

Compliance with Action Levels (Priority Pollutants)

Compliance with action levels shall be determined as follows:

Dischargers shall be deemed out of compliance with this Order if the Copermittee failed to take the prescribed action in response to a concentration of the priority pollutant in the monitoring sample that is greater than the action level and greater than or equal to the reported Minimum Level (exceedance of an action level). Regardless of the Copermittee's actions in response to an exceedance, they are still subject to the prohibitions found in sections A and B of the Order.

When determining to take an action in response to the AMALs and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "did not quantify" (DNQ) or "not detected" (ND). In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

- (1) The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
- (2) The median value of the data set shall be determined. If the data set has an odd number of data points then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of those points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

D. Storm Water Action Levels

The following legal authority applies to section D:

Broad Legal Authority: CWA §402, §402(p)(3)(B)(iii), CWC §13377, 40 CFR §122.44, 40 CFR §122.26(d)(1)(iv), 40 CFR §122.26(d)(2)(i)(E and F), and 40 CFR §122.26(d)(2)(iii and iv).

Specific Legal Authority:

CWA section 402(p)(3)(B)(iii) provides that MS4 permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(E and F) provides that the Copermittee “Require compliance with conditions in ordinances, permits, contracts or orders;” and “Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions ...”

Copermittees must conduct a comprehensive monitoring program as required under Federal NPDES regulations 40 CFR 122.26(d)(2)(iii), including the collection of quantitative MS4 storm water effluent data from outfalls.

Federal NPDES regulations 40 CFR 122.44 (d) provide that NPDES permits include any requirements necessary to “Achieve water quality standards,... including State narrative criteria for water quality.”

Section D has been added to establish storm water action levels (see also Finding D.1.h and Discussion).

Introduction

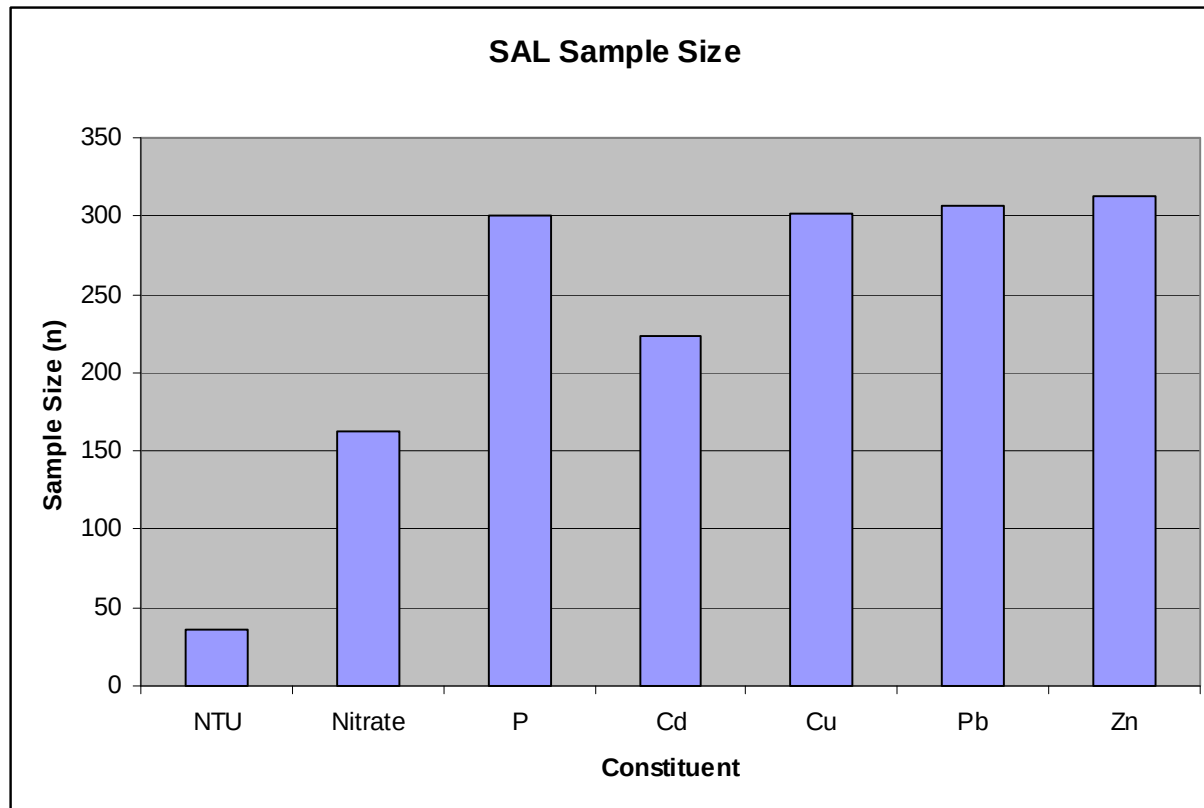
The Copermittees' ROWD supports the establishment of action levels which can be used in the effectiveness assessment program to ensure a minimum level of program implementation and identify shortcomings in their MS4 programs.¹⁶⁴ Storm Water Action Level (SAL) concentrations, standards and constituents have been developed and incorporated into the monitoring requirements for wet weather.

¹⁶⁴ Riverside County Copermittees. 2009. Report of Waste Discharge (San Diego Region).

SAL Concentration/Standards

SAL pollutant levels were developed from a regional subset of nationwide Phase I MS4 data by using USEPA Climate Zone 6 (arid west) data.¹⁶⁵ Utilizing data from USEPA Climate Zone 6 resulted in SALs which closely reflect the environmental conditions experienced in Riverside County. The localized subset of data includes sampling events from multiple Southern California locations including Orange, San Diego, Riverside, Los Angeles, and San Bernardino Counties. The dataset includes samples taken from highly built-out impervious areas and from storm events representative of Southern California conditions.

Additionally, utilization of regional data is appropriate due to the addition of data into the nationwide Phase I MS4 monitoring dataset in February 2008. This additional data increased the number of USEPA Climate Zone 6 samples to more than 400, and included additional monitoring events within Southern California (see figure below).

Sample Sizes Used to Calculate Storm Water Action Levels

In addition, the SALs reflect the water quality standards in the Basin Plan for the San Diego Region, the California Toxic Rule and USEPA Water Quality Criteria. Since it is the goal of the SALs, through the iterative and MEP process, to have outfall storm water discharges meet all applicable water quality objectives, the list of constituents to

¹⁶⁵ Data used to develop SAL are provided in Attachment F to Order No. R9-2010-0016, and obtained from <http://rpitt.eng.ua.edu/Research/ms4/mainms4.shtml>

be tested and protocol for testing has been developed to provide a reference point to evaluate the iterative MEP process.

SALs were developed based upon receiving water monitoring results and CWA section 303(d) impaired waters listings. Nitrogen, Copper and Phosphorous are all pollutants for which receiving waters are 303(d) listed as impaired and for which sufficient data was available to develop SALs. Additionally, receiving water monitoring, including from storm events monitored by the Copermittees, has demonstrated excursions and/or potential excursions, often absent receiving water hardness, above water quality criteria for turbidity (NTU), Cadmium, Lead, and Zinc. SALs were not developed for some pollutants for which receiving waters are 303(d) listed as impaired due to a lack of representative data available. These pollutants are required to be monitored but are not subject to a SAL under the Order.

Monitoring

The SALs require the measurement of hardness and to provide more specificity in the assessment of samples with SALs for total metal concentrations. While USEPA Climate Region 6 data includes a large sample size for concentrations of total metals, the impact the concentration will have on receiving waters will vary with receiving water hardness. Since it is the goal of the SALs, through the iterative and MEP process, to have MS4 storm water discharges meet all applicable water quality objectives, the hardness of the receiving water should be used when assessing the total metal concentration of a sample. Thus, when an exceedance of a SAL concentration is detected for a metal, the Copermittee must determine if that exceedance is above the existing applicable water quality limitation based upon the hardness of the receiving water. The water quality limitations Copermittees must use to assess total metal SAL exceedances are the California Toxic Rule (CTR) and USEPA National Recommended Water Quality Criteria for Freshwater Aquatic Life 1 hour maximum concentrations. The 1 hour maximum concentration is to be used for comparison since it is expected to most replicate the impacts to waters of the State from the first flush following a precipitation event.

E. Legal Authority

The following legal authority applies to section E:

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 122.26(d)(2)(i)(A) provides that the Copermittees shall develop and implement legal authority to “Control through ordinance, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(D) provides that the Copermittees shall develop and implement legal authority to “Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system.”

Illicit discharge is defined under Federal NPDES regulation 40 CFR 122.26(b)(2) as “any discharge to a municipal separate storm sewer system that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A - D) require municipalities to implement controls to reduce pollutants in storm water runoff from commercial, residential, industrial, and construction land uses or activities.

Federal NPDES regulation 40 CFR 122.26(d)(1)(ii) requires from the Copermittee “A description of existing legal authority to control discharges to the municipal separate storm sewer system.”

Section E.1.b requires the Copermittees to prohibit all identified illicit discharges not otherwise allowed pursuant to section B.2 including but not limited to:

- (1) Sewage;
- (2) Discharges of wash water resulting from the hosing or cleaning of gas stations, auto repair garages, or other types of automotive services facilities;
- (3) Discharges resulting from the cleaning, repair, or maintenance of any type of equipment, machinery, or facility including motor vehicles, cement-related equipment, and port-a-potty servicing, etc.;
- (4) Discharges of wash water from mobile operations such as mobile automobile washing, steam cleaning, power washing, and carpet cleaning, etc.;

- (5) Discharges of wash water from the cleaning or hosing of impervious surfaces in municipal, industrial, commercial, and residential areas including parking lots, streets, sidewalks, driveways, patios, plazas, work yards and outdoor eating or drinking areas, etc.;
- (6) Discharges of runoff from material storage areas containing chemicals, fuels, grease, oil, or other hazardous materials;
- (7) Discharges of pool or fountain water containing chlorine, biocides, toxic amounts of salt, or other chemicals; discharges of pool or fountain filter backwash water;
- (8) Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes; and
- (9) Discharges of food-related wastes (e.g., grease, fish processing, and restaurant kitchen mat and trash bin wash water, etc.).

Section E.1.j has been added to the Order to ensure that BMPs implemented by third parties are effective. Since the Copermittees cannot passively receive and discharge pollutants from third parties, the Copermittees must ensure discharges of storm water pollutants to the MS4 are reduced to the MEP. In order to achieve this, the Copermittees must be able to ensure that effective BMPs are being implemented by requiring the third parties to document BMP effectiveness. Regarding the Copermittees' ability to require documentation and reporting from third parties, USEPA states "municipalities should provide documentation of their authority to enter, sample, inspect, review, and copy records, etc., as well as demonstrate their authority to require regular reports."¹⁶⁶

¹⁶⁶ USEPA, 1992. Guidance Manual for the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. EPA 833-B-92-002.

F. Jurisdictional Runoff Management Program

F.1. Development Planning Component

The following legal authority applies to section F.1:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWA section 402(a), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F), 40 CFR 131.12, and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(2) provides that Copermittees develop and implement a management program which is to include "A description of planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from municipal separate storm sewers which receive discharges from areas of new development and significant redevelopment. Such plans shall address controls to reduce pollutants in discharges from municipal separate storm sewers after construction is completed."

Federal NPDES regulation 40 CFR 122.44(d)(1) requires municipal storm water 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."

Sections F.1.a and F.1.b (General Plan and Environmental Review Process) require the Copermittees to update and revise their General Plan (or equivalent plan) and environmental review processes to ensure water quality and watershed protection principles are included. The Copermittees are required to detail any changes to the General Plan or environmental review process in their Jurisdictional Runoff Management Program Annual Reports. The General Plan must be updated to include water quality and watershed protection principles for all new development and redevelopment projects.

The change made to these sections requires updating the General Plan and Environmental Review Process on an as-needed basis. Each Copermittee has either updated, is in the process of updating, or has assessed its General Plan to ensure the General Plans include the required principles and are in compliance with Order No. R9-2004-001.

Section F.1.c (Approval Process Criteria and Requirements) requires that all development projects (regardless of size) implement BMPs to reduce storm water pollutant discharges to the MEP. Source control and site design BMP requirements were not clearly described in this section of Order No. R9-2004-001. Additional detail has been added to this section to better describe the source control and site design BMPs needed for implementation. This additional detail is consistent with the

requirements of the SSMP, also known in Riverside County as the Water Quality Management Plan (WQMP). However, only source control and site design BMPs that apply to all types of development projects are required (e.g., properly designed trash storage areas).

The requirements are consistent with Order No. R9-2004-001. However, some elements are not contained in the current DAMP¹⁶⁷ (e.g., buffer zones). One exception is that Order No. R9-2004-001's requirement that applicants must provide evidence of coverage under the General Industrial Permit has been removed, since industrial tenants for a development project are usually not known during the planning stage.

The section has also been modified to reflect the prohibition of over-irrigation runoff to the MS4, as well as LID requirements. Additionally, this section requires the use of native and/or low water use plants for landscaping, and rainwater harvesting, where feasible.

Sections F.1.d and F.1.d.(1) (Standard Storm Water Mitigation Plans and Definition of Priority Development Project) require the Copermittees to review and update their SSMPs (also known in Riverside County as Water Quality Management Plans – WQMPs) for compliance with the Order. The sections also require all Priority Development Projects falling under certain categories to meet SSMP requirements. The update is necessary to ensure that the Copermittees' SSMPs are consistent with the changes that have been made to the Order's SSMP requirements. The requirement for the development/adoption of a Model SSMP has been removed since a model was completed and adopted in 2005.

The SSMP section of the Order has been reformatted for clarity. There are also some significant changes. Changes have been made in response to USEPA program evaluations, recent BMP development and effectiveness studies, recent reports on the magnitude of problems caused by hydromodification, and reviews of annual reports and the ROWD submitted by the Copermittees.

In addition, the Order requires that a one-acre threshold be phased in over two years for the priority development category. This one-acre threshold was selected to be consistent with the State Water Board's Phase II NPDES requirements for small municipalities (Order No. 2003-0005-DWQ). The one-acre threshold is also included to be consistent with the State Water Board's Construction General Permit (Order No. 2009-0009-WQO), to ensure all Development Projects subject to the post-construction BMP requirements of the Construction General Permit will implement SSMP post-construction BMP requirements. The one-acre determination applies to the amount of ground area disturbed, not the total size of the parcel or project. Each Copermittee may also lower this threshold if desired.

¹⁶⁷ Riverside County Copermittees. *Drainage Area Management Plan (DAMP)2006*. July 21, 2006.

Section F.1.d.(2) (Priority Development Project Categories) includes several changes to improve, simplify, and clarify the Priority Development Project categories.

One of the most significant changes is that where a new Development Project feature, such as a parking lot, falls into a Priority Development Project Category, the entire project footprint is subject to SSMP requirements. This criterion was not included in Order No. R9-2004-001. It is included, however, in the Model San Diego SSMP that was approved by the San Diego Water Board in 2002. It is included in this Order because existing development inspections by Riverside County municipalities show that facilities included in the Priority Development Project Categories routinely pose threats to water quality. This permit requirement will improve water quality and program efficiency by preventing future problems associated with partly treated storm water runoff from redevelopment sites. This approach to improving storm water runoff from existing developments is practicable because municipalities have a better ability to regulate new developments than existing developments.

Another significant change is a new category for any new development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This category applies to commercial, industrial, residential, mixed use, and public projects on private or public land.

Section F.1.d.(2)(g) was modified to allow the Copermittees to develop a standard roadway design and post-construction BMP guidance document that could be used by the Copermittees in lieu of a project specific SSMP for each public works road construction project. The guidance document must comply with the SSMP requirements, including the LID and hydromodification BMP requirements. The roadway design and post-construction BMP guidance must be included in the updated SSMP, and may be utilized after the San Diego Water Board has determined that the updated SSMP is acceptable.

Development of new industrial sites was not included as a category in the Priority Development Projects in Order No. R9-2004-001 because industrial NPDES requirements already establish storm water criteria. Industrial sites are now included in the new development category of the Order to be consistent with Phase II rules and to close loopholes.

Section F.1.d.(3) (Pollutants of Concern) requires Copermittees to update their procedures for identifying pollutants of concern for each Priority Development Project. This is important to do periodically because of changing water quality conditions and designations of impairments or areas of concern. Furthermore Copermittees continually learn more about pollutant-generating activities as they conduct inspections and investigations, and that information must be incorporated into the SSMP process.

Section F.1.d.(4) (Low Impact Development BMP Requirements) requires the Copermittees to require each Priority Development Project to implement low impact development (LID) BMPs to reduce the amount of polluted storm water runoff from

those sites. The Copermittees' ROWD proposes to revise the Riverside County Storm Water Quality BMP Design Handbook to incorporate LID design concepts.¹⁶⁸ The primary approach in LID site design BMPs is to limit the permanent loss of existing infiltration capacity because loss of infiltration is a major contributor to wet weather pollution discharges. General means to accomplish that goal include retaining natural infiltration areas of a site and limiting the amount of impervious surfaces. The Order does not require a specific or relative amount of pervious surfaces be added to a project. The Order seeks to retain on-site capture of the 85th percentile storm.

The Copermittees must require LID BMPs to be implemented for each Priority Development Project, unless found to be technically infeasible. LID BMPs must be formally considered during the plan review process for Priority Development Projects. The LID review process for each Priority Development Project is expected to include an assessment of LID BMP techniques to infiltrate, filter, store, evaporate, and/or retain runoff close to the source of the runoff. The review process is also expected to include an assessment of the potential collection of storm water for on site and off site reuse opportunities. In cases where LID BMPs are found to be technically infeasible, the Copermittees may grant a waiver to the Priority Development Project for all or a portion of the LID BMP requirements.

The Order directs the Copermittees to require new development projects to employ certain classes of LID site design BMPs. The required LID site design BMPs take advantage of features that are incorporated into the Priority Development Project, such as landscaping or walkways. It also requires that projects seek to maintain natural water drainage features rather than instinctively convey water in buried pipes and engineered ditches that eliminate natural water quality treatment functions. These types of site design BMPs are both effective and achievable.

LID BMPs must be sized and designed to ensure onsite retention without runoff, of the volume of runoff produced from a 24-hour 85th percentile storm event ("design capture volume"). This is consistent with other municipal storm water NPDES permits recently adopted by the Los Angeles and Santa Ana Water Boards, as well as the permit recently adopted by the San Diego Water Board for Orange County. The requirement for a numerical BMP design standard is well established for treatment control BMPs and is required in permits throughout the nation such as in Pennsylvania, West Virginia, Georgia, and Washington D.C. Since the 85th percentile storm event has previously been used as the numeric design standard for treatment control BMPs; the same size storm event can be applied as the numeric design standard for LID BMPs. The average 24-hour, 85th percentile rainfall for the Riverside County portion of the San Diego Region was calculated to be approximately 0.6 inches of rain.¹⁶⁹

The retention and restoration of natural drainage features, such as ephemeral streams, wetlands, and depressions, can be particularly important because small tributaries are essential to the maintenance of the chemical, biological, and physical

¹⁶⁸ Riverside County Copermittees. 2009. Report of Waste Discharge (San Diego Region).

¹⁶⁹ San Diego Water Board, 2004. Fact Sheet/Technical report for Order No. R9-2004-001, dated July 14, 2004.

integrity of larger water bodies.¹⁷⁰ The loss and modification of such natural water resources to accommodate post-development storm water management leads to direct and indirect adverse effects on water quality that are felt both on the project site and off the site within the watershed.^{171,172,173} Effects to aquatic beneficial uses from altered drainage features can occur downstream and upstream. The length of upstream or downstream effect of channel modifications is dependant on the specific structure type and channel slope.¹⁷⁴ For instance, road culverts can act as partial barriers to upstream distribution of native aquatic macroinvertebrates in urban streams, while bridges can provide adequate passage.¹⁷⁵ As a result of the adverse effects to water quality and beneficial uses, the State of California nonpoint source pollution program management measures for urban areas includes limiting the destruction of natural drainage features and natural conveyance areas.¹⁷⁶ Additionally, any project proposing to discharge dredge and/or fill material to waters of the United States and/or State is required to obtain a CWA section 401 Water Quality Certification and/or Waste Discharge Requirements from the San Diego Water Board or State Water Board.

LID site design BMP options do not need to be costly.¹⁷⁷ Some design options, such as concave vegetated surfaces or routing rooftop or walkway runoff to landscaped areas, are cost neutral.¹⁷⁸ Other LID site design BMPs, such as minimizing parking stall widths or use of efficient irrigation devices, are oftentimes already required. In addition, use of LID site design BMPs reduces storm water runoff quantity, allowing for treatment control BMPs and other storm water infrastructure on site to be smaller, therefore savings costs for both developers and municipalities.^{179,180}

Because of the potential economic and environmental benefits of using LID site design, the U.S. Department of Housing and Urban Development, Office of Policy

¹⁷⁰ Aquatic scientists comment letter (April 10, 2003) on the Advanced Notice of Proposed Rulemaking (ANPRM) on the Clean Water Act Regulatory Definition of "Waters of the United States." (Docket ID No. OW-2002-0050). This letter is a synthesis of scientific information regarding ephemeral, intermittent, and headwater streams. It was written to USEPA by 85 leading aquatic scientists.

¹⁷¹ Wright, Tiffany, et al. 2006. *Direct and Indirect Impacts of Urbanization on Wetland Quality*. Prepared by the Center for Watershed Protection for the USEPA Office of Wetlands, Oceans, and Watersheds. 81p. Available on-line at <http://www.cwp.org>

¹⁷² Konrad, Christopher P. and Derek K. Booth, 2005. *Hydrologic Changes in Urban Streams and Their Ecological Significance*. American Fisheries Society Symposium. Vol. 45 pp.157-177.

¹⁷³ Coleman, Derrick, et al. 2005. *Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams*. Technical Report No. 450 of the Southern California Coastal Water Research Project.

¹⁷⁴ Fischenich, J.C. 2001. "Impacts of stabilization measures," EMRRP Technical Notes Collection (ERDC TNEMRRP- SR-32), U.S. Army Engineer Research and Development Center, Vicksburg, MS. <http://www.wes.army.mil/el/emrrp>

¹⁷⁵ Blakely, Tanya J., et al. 2006. *Barriers To The Recovery Of Aquatic Insect Communities In Urban Streams* Freshwater Biology Vol. 51(9), 1634-1645.

¹⁷⁶ California Nonpoint Source Encyclopedia, Management Measure 3.1.b. Runoff from Developing Areas, Site Development and Management Measure 3.3.a. Runoff from Existing Development, Existing Development.

¹⁷⁷ USEPA, 2000. Low-Impact Development: A literature review. EPA-841-B-00-005. 35p.

¹⁷⁸ Bay Area Stormwater Management Agencies Association., 1999. Start at the Source. Forbes Custom Publishing. Available on-line at: http://www.scvurppp-w2k.com/basmaa_satsm.htm. pp. 149.

¹⁷⁹ National Association of Home Builders Research Center. *Builders Guide to Low Impact Development*. Available on-line at <http://www.toolbase.org>

¹⁸⁰ National Association of Home Builders Research Center. *Municipal Guide to Low Impact Development*. Available on-line at <http://www.toolbase.org>

Development and Research, developed “*The Practice of Low Impact Development (LID)*” to assist the housing industry during the land development process.¹⁸¹ This document focuses specifically on technologies that affect both the cost impacts and environmental issues associated with land development. Much of the report focuses on storm water management because LID storm water management systems can save capital costs for developers and maintenance costs for municipalities.¹⁸² The executive summary of the HUD report notes:

This approach to land development, called Low Impact Development (LID), uses various land planning and design practices and technologies to simultaneously conserve and protect natural resource systems and reduce infrastructure costs. LID still allows land to be developed, but in a cost-effective manner that helps mitigate potential environmental impacts. LID is best suited for new, suburban development.

Developers can use site and structure designs that reduce building footprints, decrease the amount of paved infrastructure, and provide for dispersed drainage and infiltration of runoff from impervious surfaces to reduce the effective impervious surface.¹⁸³ The concept of effective impervious surface is important, because when runoff from these surfaces is directed to pervious areas rather to an impervious drainage system (i.e. curbs, gutters, street surfaces, storm drain pipes), it can infiltrate, evaporate, or be taken up by vegetation, thereby reducing the total volume of storm water runoff leaving a site.

In addition to all the benefits discussed above, LID BMPs have several other advantages over conventional treatment control BMPs. As previously discussed, implementing LID BMPs can save on maintenance costs for municipalities and property owners. LID BMPs are typically easier to operate and maintain compared to conventional mechanical treatment control BMP technologies. Because LID BMPs are easier to operate and maintain, they are also more reliable compared to conventional mechanical treatment control BMP technologies, thus more sustainable over the long term.

Through its process of conditioning development projects under the CWA section 401 Water Quality Certification program, the San Diego Water Board finds that the level of LID site design BMP implementation in the Order is feasible for all projects. The LID BMP requirements will help ensure that LID site design BMPs are implemented for new development projects. LID site design BMPs are a critical component of storm water runoff management at new development projects, since the LID BMPs provide multiple benefits including preservation of hydrologic conditions, reduction of pollutant discharges, cost effectiveness, and green space.

¹⁸¹ U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2003. *The Practice of Low Impact Development*. Prepared by: NAHB Research Center, Inc. Upper Marlboro, Maryland. Contract No. H-21314CA.

¹⁸² Ibid. Executive Summary, p.x.

¹⁸³ Bay Area Stormwater Management Agencies Association. 2003. *Using Site Design Techniques to Meet Development Standards for Stormwater Quality*. Available on-line at: <http://www.basmaa.org/>

The Order provides the Copermittees with flexibility in implementing the LID site design BMP requirements by providing a LID BMP waiver program. The Riverside County Copermittees plan on allowing the implementation of the LID BMPs contained in the Riverside County LID Design Manual if retention LID BMPs are found to be technically infeasible to retain all of the design capture volume. Other LID BMP design and guidance manuals that are acceptable to the Copermittees and/or San Diego Water Board may also be considered.

If retention LID BMPs and/or other LID BMPs are technically infeasible to retain and/or treat all or part of the design capture volume for a Priority Development Project, a waiver may be granted for the remaining portion of the design capture volume. The waiver would allow the remaining portion of the design capture volume to be treated with conventional treatment control BMPs and some form of mitigation.

The use of conventional treatment control BMPs for Priority Development Projects is expected to be allowed by the Copermittees on a very limited basis, and only when a Copermittee finds that LID BMPs are technically infeasible for retaining and/or treating the full design capture volume. In such cases, the Copermittee may issue a waiver for the Priority Development Project from all or a portion of the LID BMP requirements. The LID BMP waiver program that must be developed and implemented by the Copermittee(s) is discussed below under section F.1.d.(7). The criteria that the Copermittee(s) may use to make a finding of technical infeasibility for implementing LID BMPs are also discussed under section F.1.d.(7).

Section F.1.d.(5) (Source Control BMP Requirements) requires that Priority Development Projects implement a minimum set of source control BMPs to protect the water quality of receiving waters from discharges of runoff from these projects. This section has been added to provide more detail and clarify the Order's requirements for source control BMPs. The minimum source control BMPs listed as required by this section must be implemented by each Priority Development Project. In cases where one or more of the minimum source control BMPs are not warranted as part of the site design for the Priority Development Project (e.g., no outdoor material storage and/or work areas), those source control BMPs are not expected to be implemented.

Section F.1.d.(6) (Treatment Control BMP Requirements) includes several design requirements for any treatment control BMPs that are allowed to be implemented (i.e. granted a waiver for all or part of the LID BMP requirements) on Priority Development Projects. These requirements are generally consistent with Order No. R9-2004-001, with two exceptions. First, the Order limits the selections of methods used to determine the appropriate volume of storm water runoff to be treated. The modification ensures that priority development project proponents utilize the most accurate information to determine the volume or flow of runoff which must be treated.

Second, the Order requires that treatment control BMPs selected for implementation at Priority Development Projects have a removal efficiency rating that is ranked with high

or medium pollutant removal frequency for the project's most significant pollutants of concern. The requirement allows exceptions for those projects that, with a feasibility analysis, can justify the use of a treatment control BMP with a low removal efficiency for a Priority Development Project. This requirement is needed because to date, the Copermittees have generally approved low removal efficiency treatment control BMPs without justification or evidence that use of higher efficiency treatment BMPs was considered and found to be infeasible. Specifically, it has been found during audits of the Copermittees' SSMP programs that many SSMP reports do not adequately describe the selection of treatment control BMPs.¹⁸⁴ Moreover, USEPA's contractor Tetra Tech, Inc. recommends that "project proponents should begin with the treatment control that is most effective at removing the pollutants of concern [...] and provide justification if that treatment control BMP is not selected."¹⁸⁵

In addition, treatment control BMPs must be designed and implemented with measures to avoid the creation of nuisance or pollution associated with vectors, such as mosquitoes, rodents, and flies. Related guidelines are identified in guidance from CASQA.¹⁸⁶ Additional considerations are outlined in publications from the California Department of Health Services and University of California Division of Agriculture and Natural Resources.¹⁸⁷

Section F.1.d.(7) (Low-Impact Development BMP Waiver Program) requires the Copermittees to develop, collectively or individually, a LID BMP waiver program. For some Priority Development Project sites, it may be technically infeasible to implement the required LID BMPs to retain and/or treat the design capture volume due to the site constraints. For this reason, the San Diego Water Board has added to the Order a requirement for the Copermittees to develop such a program. The LID BMP waiver program would provide the opportunity for development projects to avoid partial or full LID BMP implementation in exchange for implementation of conventional treatment control BMPs and mitigation. The program would maintain equal water quality benefits as properly implemented LID BMPs when partial LID BMPs are coupled with some form of mitigation.

LID BMPs are not limited to infiltration BMPs, and may also include storage, evaporation, evapotranspiration, filtration, and/or on site reuse BMPs. Thus, the San Diego Water Board expects that every site will be able to implement some form of LID BMPs to some extent. The LID BMP waiver program is expected to be used by the Copermittees on a limited basis, and only when a Copermittee finds that LID BMPs are technically infeasible for retaining and/or treating the full design capture volume. The Order provides several conditions under which a Copermittee may find that the

¹⁸⁴ PG Environmental, 2008. Riverside County Flood Control and Water Conservation District and County of Riverside MS4 Inspection Report.

¹⁸⁵ Tetra Tech, Inc., 2005. Program Evaluation Report –San Diego Standard Urban Storm Water Mitigation Plan (SUSMP) Evaluation. P. 5.

¹⁸⁶ For example, see the California Stormwater BMP Handbook guidelines for Extended Detention Basins (TC-22) at <http://www.cabmphandbooks.org>.

¹⁸⁷ Marco Metzger. "Managing Mosquitoes in Stormwater Treatment Devices." University of California Division of Agriculture and Natural Resources Publication No. 8125. Available at <http://anrcatalog.ucdavis.edu>.

implementation of LID BMPs to retain and/or treat the design capture volume is technically infeasible [see section F.1.d.(7)(b)(i)-(iii)]. The Copermittees are not limited to the conditions listed in the Order, and may identify other conditions in the SSMP that would allow a finding of technical infeasibility.

Making a finding of technical infeasibility for the implementation of the LID BMP requirements on any Priority Development Project is at the discretion of each Copermittee through their SSMP plan review process. For any project proponent that would like to receive a waiver for all or part of the LID BMP requirements, the Copermittees may require and/or use any information to make a finding of technical infeasibility.

A separate technical report developed by the project proponent or the Copermittee to support a finding of technical infeasibility may not always be necessary to meet the requirements of this Order. In most cases, it is expected that the information that is provided in the project proponent's SSMP plan review documents (e.g., geotechnical reports, site design plans) will allow the Copermittees to determine whether or not it is technically feasible for LID BMPs to be implemented to retain and/or treat all or part of the design capture volume. The reason(s) for a Copermittee making a finding a technical infeasibility and granting a LID BMP waiver for any project must be provided in the Annual Report.

For Priority Development Projects that are granted a waiver for all or a portion of the LID BMP requirements, mitigation will be required to achieve water quality benefits that will be lost without the LID BMP retention and/or treatment. Any LID BMP waiver program which allows development projects to forgo all or part of the LID BMP implementation requirements must include mitigation provisions which will achieve similar water quality benefits. To ensure that this is the case for the LID BMP waiver program, minimum mitigation provisions for the program have been added to the Order.

Mitigation can be achieved on site or off site. On site mitigation may include additional sizing multipliers for conventional treatment control BMPs implemented on the site to treat a larger range of storm events to achieve the same or greater pollutant load removal expected from retention of the design capture volume. Off site mitigation may include other pollutant treatment projects that are not located on the site that will achieve the same or greater pollutant removal expected from on site LID BMPs for the design capture volume. For example, off site mitigation projects may include green streets projects, existing development retrofit projects, retrofit incentive programs, regional BMPs and/or riparian restoration projects. Off site mitigation projects may also satisfy the Order's retrofitting requirements in section F.3.d.

In addition to these mitigation options, the Order allows the Copermittees to develop and propose additional forms of mitigation (e.g., pollutant credit system, mitigation fund) that could be implemented as part of the LID BMP waiver program by the Copermittee(s). Any additional forms of mitigation proposed by the Copermittees

would be subject to approval by the San Diego Water Board Executive Officer prior to implementation.

Section F.1.d.(8) (LID and Treatment Control BMP Standards) addresses a need for the Copermittees to develop and apply consistent criteria for the design and maintenance of structural treatment BMPs. Correct BMP design is critical to ensure that BMPs are effective and perform as intended. Without design criteria, there is no assurance that this will occur, since there is no standard for design or review. As an example, Ventura County has developed a BMP manual that includes standard design procedure forms for BMPs. Ventura County's *Technical Guidance Manual for Storm Water Quality Control Measures* is available at <http://www.vcstormwater.org/publications.htm>.¹⁸⁸ CASQA also confirms the necessity of design criteria when it includes such criteria in its New Development and Redevelopment BMP Handbook.¹⁸⁹ This issue is noted in the ROWD, and the Copermittees propose to develop standard design checklist/plans/details for selected source control and treatment BMPs.¹⁹⁰

Section F.1.d.(9) (Implementation Process) requires the Copermittee to implement a process to verify compliance with SSMP requirements. The process must identify at what point in the planning process that projects must meet SSMP requirements and what are roles/responsibilities of municipal departments. The intent of this requirement is to provide consistency in the application of the SSMP between the Copermittees. This requirement was included in previous Order No. R9-2004-001.

Section F.1.d.(10) (Post-construction BMP Review) requires the Copermittees to keep their SSMP up to date with BMP effectiveness studies for low-impact design and treatment control BMPs. This requirement will ensure that two important types of information be included in those efforts: Site design BMPs and treatment BMPs that are assessed as part of contracts with the State Water Board and San Diego Water Board. Projects funded with such state grants must include effectiveness assessments using a quality assurance plan. As a result, such studies generally provide reliable sources of local data and should be included in the SSMP.

Sections F.1.e (BMP Construction Verification) requires the Copermittees to verify that the BMPs are being constructed for each Priority Development Project subject to SSMP requirements (SSMP project). SSMP projects that improperly construct or fail to construct site design, source control, and treatment control BMPs can pose a significant threat to water quality. Section F.1.e is included in response to recommendations from USEPA.¹⁹¹

¹⁸⁸ Ibid.

¹⁸⁹ California Stormwater Quality Association, 2003. Stormwater Best Management Practice Handbook – New Development and Redevelopment.

¹⁹⁰ Riverside County Copermittees. 2009. Report of Waste Discharge (San Diego Region).

¹⁹¹ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68845. USEPA recommends such practices in the Phase II storm water regulations, promoting "inspections during construction to verify BMPs are built as designed."

In some cases SSMP projects may wish to allow occupancy and/or use of a portion of the site prior to full completion of the project. Section F.1.e is not intended to require a project to be fully (i.e. all phases and areas) completed before the occupancy and/or intended use of a portion of the site is allowed. A Copermittee, however, must verify that the BMPs designed to treat and control pollutants from the completed portion of the project are properly constructed before the occupancy and/or intended use of the completed portion is allowed. The BMPs must be specifically designed to control pollutants from the completed portion of the site that will be occupied and/or used prior to the full completion of the SSMP project.

Section F.1.f (BMP Maintenance Tracking) is included in the Order to ensure the continued effectiveness of the post-construction BMP requirements. BMPs need to be properly constructed and adequately maintained to ensure that they are operating correctly and remain effective in removing pollutants from a project site's runoff prior to discharging to receiving waters.

To facilitate the tracking of BMP maintenance, each Copermittee must develop and maintain a database of Priority Development Projects subject to SSMP requirements (SSMP projects) and the post-construction BMPs implemented for each SSMP project. The inventory is not expected or required to include LID BMPs that are implemented on a lot by lot basis at single family residential houses. The inventory, however, must include the post-construction BMPs for all other development or redevelopment SSMP project sites.

The Order requires BMPs at all high priority SSMP project sites as well as all Copermittee project sites with BMPs to be inspected by the Copermittees annually. Other measures, verification methods, and inspection frequencies may be used for BMPs at lower priority SSMP project sites. SSMP project sites with the highest potential for causing or contributing to a threat to water quality or an existing impairment of water quality are required to be inspected by the Copermittees on an annual basis.

The prioritization of the SSMP project sites requiring inspections by the Copermittees will be developed by the Copermittees and reported in the updated JRMP. The prioritization of SSMP project sites may be revised on an annual basis based on inspection findings, and the Copermittees must report changes in prioritization, and justification for each change, in the Annual Report.

The Order includes several criteria that must be considered by the Copermittees in determining the priority of a SSMP project site's threat to water quality. Receiving waters that are listed as impaired by pollutants and/or with discharges exceeding action levels are water bodies most at risk for impairment of beneficial uses. Thus, at a minimum, high priority SSMP projects must include sites that are known or suspected to generate pollutants in an area that is tributary (i.e. upstream within the same Hydrologic Subarea) to a receiving water body listed as impaired for those pollutants; and/or, a receiving water body where exceedances of action levels for

those pollutants are observed; and/or, a receiving water body where exceedances of NALs for those pollutants are observed and the Copermittee has not been able to identify the source.

Section F.1.h (Hydromodification) expands and clarifies current requirements for control of MS4 discharges to limit hydromodification effects caused by changes in runoff resulting from development and urbanization. The requirements are based on findings and recommendations of the Riverside County Storm Water Program,¹⁹² the Stormwater Monitoring Coalition (SMC),^{193,194} and the Storm Water Panel on Numeric Effluent Limits (Numeric Effluent Panel).¹⁹⁵ Added specificity is needed due to the current lack of a clear standard for controlling hydromodification resulting from development. More specific requirements are also warranted because hydromodification is increasingly recognized as a major factor affecting water quality and beneficial uses.

Hydromodification is the change in a watershed's runoff characteristics resulting from development, together with associated morphological changes to channels receiving the runoff. As the total area of impervious surfaces increases, infiltration of rainfall decreases, causing more water to run off the surface and at a higher velocity than natural conditions. While erosion in channels is a naturally occurring process, increased runoff rates, volumes, and velocities from developed areas can produce erosive flows in channels under rainfall conditions which are unnatural and were not previously problematic. Moreover, runoff from developed areas increases the duration of time that channels are exposed to erosive flows. The increase in the volume of runoff and the length of time that erosive flows occur ultimately intensify the amount and potential of channel erosion, subsequently causing changes in sediment transport characteristics and the hydraulic geometry (width, depth, and slope) of channels.¹⁹⁶

These types of changes have been documented in southern California. It has been reported that researchers studying flood frequencies in Riverside County have found that increases in watershed imperviousness of only 9-22 percent can result in increases in peak flow rates for the two-year storm event of up to 100 percent.¹⁹⁷ Such changes in runoff have significant impacts on channel morphology. It has recently been found that ephemeral/intermittent channels in southern California appear to be

¹⁹² Riverside County Copermittees. 2009. Report of Waste Discharge (San Diego Region).

¹⁹³ Coleman, Derrick, et al. 2005. *Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams*. Technical Report No. 450 of the Southern California Coastal Water Research Project.

¹⁹⁴ Stein, Eric and Susan Zaleski. 2005. Managing Runoff to Protect Natural Streams: The Latest Developments on Investigation and Management of Hydromodification in California. Proceedings of a special technical workshop co-sponsored by California Stormwater Quality Association (CASQA), Stormwater Monitoring Coalition (SMC), and University of Southern California Sea Grant (USC Sea Grant). Technical Report No. 475 of the Southern California Coastal Water Research Project.

¹⁹⁵ Storm Water Panel Recommendations to the California State Water Resources Control Board. 2006. The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial, and Construction Activities.

¹⁹⁶ Santa Clara Valley Urban Runoff Pollution Prevention Program, 2005. Hydromodification Management Plan. P. 1-1.

¹⁹⁷ Schueler and Holland, 2000. Storm Water Strategies for Arid and Semi-Arid Watersheds (Article 66). The Practice of Watershed Protection.

more sensitive to changes in imperviousness than channels in other areas. Morphology of small channels in southern California was found to change with only 2-3 percent watershed imperviousness, as opposed to 7-10 percent watershed imperviousness in other parts of the nation.¹⁹⁸

Sediment that would normally be eroded from the developed areas (i.e. naturally eroded if the area remained undeveloped) is typically coarser grained and deposited closer to the source. Coarser grained sediments that are deposited also provide or contribute to habitat that is more hospitable to aquatic flora and fauna.

Developed areas and increased impervious surface change the types and quality of sediment that are discharged in runoff to the channels under rainfall conditions, which can have an adverse impact on downstream habitats. Sediment in runoff from developed areas and impervious surfaces are typically finer grained, which remains suspended for longer periods of time and can affect aquatic flora (e.g., reduce photosynthesis by limiting transmittance of light) and fauna (e.g., interfere with respiration). Several types of pollutants generated on developed areas (e.g., pesticides, nutrients, bacteria, metals, hydrocarbons) also tend to adsorb on to finer grained sediments. In addition, finer grained sediments get deposited further away from the source or point of discharge. These changes in the characteristics and quality of the sediment in the runoff from developed areas also contribute to the hydromodification effects on downstream channels.

Effects of hydromodification are evident in Riverside County and recognized by the Copermittees. Analyses of bioassessment data within the San Diego Region has indicated that physical changes to stream channels caused by hydromodification are likely responsible, in part, for the low bioassessment scores in urbanized settings.¹⁹⁹ This pattern is consistent under Order No. R9-2004-001, although non-reference bioassessment monitoring was limited to two sites located at mass loading stations. These sites consistently exhibited poor or very poor IBI scores and sub-optimal or marginal habitat. In addition to poor habitat, water chemistry and toxicity impacts were documented at mass and tributary loading stations, likely exacerbating the observed low IBI scores.²⁰⁰ It is important to recognize that the physical changes in stream channels are a direct result of MS4 discharges, but that two separate mechanisms are involved in bringing about those changes. First, is a change in the flow regime caused by the increase in impervious surfaces and loss of natural conveyance systems. Discharges to receiving waters from the MS4 outfalls do not mimic the natural discharges from former tributaries to that receiving water, and the change results in erosion. Second, the physical stream habitat in many places has been severely modified in order to efficiently convey those increased storm water discharges to the ocean. Where streams are hardened and/or buried to convey storm water, they

¹⁹⁸ Coleman, et. al., 2005. Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams. P. iv.

¹⁹⁹ See San Diego Water Board Order No. R9-2009-002 Fact Sheet.

²⁰⁰ Riverside County Copermittees Fiscal Year 2008-2009 Santa Margarita Watershed Annual Progress Report.

cannot provide adequate water quality and other necessary conditions to support beneficial uses. Both of these issues are addressed in the Order.

The Copermittees' recognize the need to improve management of hydromodification. The ROWD proposes to revise the SSMP to incorporate additional information from ongoing hydromodification studies conducted by the SMC. The Order allows the Copermittees to adopt criteria consistent with future SMC findings in the development of their Hydromodification Management Plan.

Section F.1.h. requires the Copermittees to submit a draft Hydromodification Management Plan (HMP) on or before June 30, 2013. This will provide the Copermittees over 2 years to develop the draft HMP.

Section F.1.h (1) describes several elements that must be included in the HMP. For example, the HMP must identify a method for assessing susceptibility of channel segments which receive runoff discharges from Priority Development Projects, and include a channel standard to ensure that the stability of the channel is not compromised as a result of discharges from the Priority Development Projects. The HMP must also identify a range of flows where Priority Development Projects could cause hydromodification effects and subsequent stream instability.

Maintaining the pre-development flows and durations from a Priority Development Project will significantly reduce the potential for increased erosion caused by development. Loss of natural sediment that will be removed because of otherwise pervious areas covered by the impervious development and removal of pollutants in runoff from Priority Development Projects, however, can still increase the potential for increased erosion. Runoff that is discharged from a project that lacks sediment becomes "sediment hungry" and can result in increased erosion upstream and downstream from the point of discharge. Thus, the HMP must also identify a method and compensate for the loss of sediment supply that is expected due to development and include a performance and/or design standard that will be able to mitigate for that expected loss of sediment supply.

The HMP must require Priority Development Projects to implement control measures (such as LID or detention basins) to prevent hydromodification and resultant degradation of stream conditions upstream and/or downstream of project sites. To compare post-project flow rates and durations to pre-project flow rates and durations, the HMP must specify that the pre-development (naturally occurring) flow rates and durations shall be used when assessing pre-project conditions, so that the naturally occurring hydrology throughout the watershed is eventually restored.

In cases where a stream has been armored with concrete, rip rap, or other man-made materials, the HMP shall require the assessment of a comparable soft-bottom channel as the channel standard, as opposed to using the characteristics of the hardened channel as the channel standard. This is to ensure that hydromodification management measures are already in place should any portion of the hardened

channel be returned to its natural state, thereby restoring the physical integrity of the creek and its Beneficial Uses. The only exceptions are for projects that discharge storm water runoff into underground storm drains or conveyance channels with bed and banks that have been concrete lined all the way to water storage reservoirs or lakes, where effects from hydromodification are not expected. Other exceptions that are acceptable to the San Diego Water Board may be identified in the final HMP.

The HMP must also include metrics for assessing impacts to downstream watercourses from Priority Development Projects, as well as assessing improvements to these watercourses. The metrics must be able to assess changes to the channels as Priority Development Projects are developed and constructed in the watershed. Monitoring and evaluating changes to the physical conditions of the channels receiving runoff discharges from Priority Development Projects will provide the Copermittees data that can be used to determine whether or not the HMP is effective at reducing the increased erosive forces caused by development and impervious surfaces over time.

In addition to metrics to assess changes to the physical conditions of the channels, the Copermittees must monitor and evaluate the biological conditions (e.g., habitat quality, benthic flora and fauna, IBI scores) of the channels. This is because historic hydromodification impacts, such as concrete lining and channelization, are suspected to have impacted the natural physical habitat of urban streams resulting in low IBI scores. The Copermittee's 2008-2009 monitoring report indicated decreased IBI scores at mass loading stations below urbanized watersheds, in part due to marginal or suboptimal habitat. The Monitoring and Reporting Program in the Order includes new requirements for monitoring of habitat for bioassessment, with the "Full" suite of physical/habitat characterization measurements found in the SWAMP Bioassessment Standard Operating Procedures being required with each bioassessment sample. Additional bioassessment sites are also required at locations higher in the watershed, which is expected to more closely reflect localized impacts. Therefore, the IBI scores required by the Monitoring and Reporting Program will be a useful metric in terms of assessing both impacts to streams from Priority Development Projects and improvements due to implementation of the HMP management measures. The Copermittees may also develop or utilize other metrics and identify other monitoring locations that can be used to assess the effectiveness of the HMP on the physical and biological conditions of the channels.

In addition to the control measures that must be included in the HMP to prevent or minimize hydromodification effects from Priority Development Projects, section F.1.h.(2) requires the HMP to include additional management measures that can be used on Priority Development Projects based on a prioritized consideration of the following elements in this order: 1) site-design control measures, 2) on-site management measures, 3) the use of regional control measures upstream of receiving waters, and lastly, 4) in-stream management and control measures (not to include reinforcement with non-naturally occurring materials). The suite of management measures must also include stream restoration as a viable option to achieve the channel standard and subsequently restore Beneficial Uses. In-stream controls are

expected to be in the form of stream restoration or rehabilitation. The use of stream restoration is expected to be an option that is used in conjunction with other on site management measures and not by itself as the only management measure. Stream restoration or rehabilitation projects that are considered in-stream controls for the purpose of preventing or minimizing hydromodification effects do not include projects that use non-naturally occurring materials (e.g., concrete, rip-rap, or gabions, etc.), but may include projects that use natural materials and/or create stable and sustainable channel configurations.

The San Diego Water Board recognizes that fully achieving post-project runoff flow rates and durations that do not exceed pre-development (naturally occurring) runoff flow rates and durations on redevelopment projects with existing impervious surfaces may be challenging. Thus, section F.1.h.(3) has been included to allow the Copermittees to propose, as part of the HMP, a waiver program specifically for Priority Development Projects that are redevelopment projects, as defined by section F.1.d.(1)(b). Because redevelopment projects may not be able to achieve post-project runoff flow rates and durations that do not exceed pre-development (naturally occurring) runoff flow rates and durations through onsite management and control measures, offsite mitigation measures may be required. Redevelopment projects must achieve post-project runoff flow rates and durations that are less than or equal to pre-project and down to pre-development runoff flow rates and durations to be eligible to receive a waiver under the program. For a redevelopment project, the pre-project runoff flow rates and durations are those currently being discharged by the existing development prior to the redevelopment project being built. Meeting pre-project runoff flow rates and durations is usually a less stringent performance criteria than meeting the pre-development runoff flow rates and durations. Implementing BMPs to meet the pre-project flow rates and durations is significantly easier and cheaper for a redevelopment project compared to meeting pre-development flow rates and durations. If a project is granted a waiver, the estimated incremental hydromodification impacts from not achieving the pre-development (naturally occurring) runoff flow rates and durations for the project site must be fully mitigated with offsite mitigation. Offsite mitigation measures may include utilizing regional hydrologic control measures (e.g., regional detention or infiltration basins) or rehabilitation of stream channels to achieve sustainable channel configurations.

Section F.1.h (6) describes interim hydromodification criteria that must be implemented by the Copermittees until the final HMP is found to be adequate by the San Diego Water Board Executive Officer. The Copermittees currently have hydromodification requirements in the SSMP (section 4.4 of the Riverside County WQMP). Until the final HMP is required to be implemented, the Copermittees must continue implementing their existing hydromodification requirements. The existing hydromodification requirements²⁰¹ allow exemptions for Priority Development Projects if they meet one of three conditions. One of those conditions is if a project discharges directly to a publicly-owned, operated and maintained MS4. This condition has been

²⁰¹ Riverside County Copermittees, 2006 (updated in 2009). Riverside County Water Quality Management Plan (WQMP), Section 4.4.

too broadly applied and has resulted in many projects being exempt from the hydromodification requirements in the past.

Therefore, the Order modifies the conditions that may exempt Priority Development Projects from implementing the interim hydromodification criteria. The modifications to the conditions are minor and can be implemented in the interim until the final HMP is approved. This allows the Copermittees to focus their resources on development of the final HMP.

Finally, the requirements included in section F.1.h do not supersede the LID BMP requirements in section F.1.d. (4). In certain situations, the requirements to incorporate LID BMPs will satisfy the requirements for hydromodification management. Using LID is a viable option for both accomplishing hydromodification management and pollutant load reductions.

Section F.1.i (Unpaved Roads Development) specifically requires the Copermittees to implement or require implementation of BMPs for erosion and sediment control after construction of all new unpaved roads. As discussed for Finding D.1c, design and source control BMPs for unpaved roads are needed to minimize the discharge of sediment to the MS4s and receiving waters, especially during storm events. There are several guidance documents available (see Discussion for Finding D.1.c) that include design and source control BMPs that can be readily implemented by the Copermittees for the development of new unpaved roads.

F.2. Construction Component

The following legal authority applies to section F.2:

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 122.26(d)(2)(iv)(D) provides that the proposed management program 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.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(1) provides that the proposed management program include “A description of procedures for site planning which incorporate consideration of potential water quality impacts.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(2) provides that the proposed management program include “A description of requirements for nonstructural and structural best management practices.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(3) provides that the proposed management program include “A description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(4) provides that the proposed management program include “A description of appropriate educational and training measures for construction site operators.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Copermittee must demonstrate that it can control “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.”

Federal NPDES regulation 40 CFR 122.26(b)(14) provides that “The following categories of facilities are considered to be engaging in ‘industrial activity’ for the purposes of this subsection: [...] (x) Construction activity including cleaning, grading and excavation activities [...].”

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 the Director determines 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.”

Section F.2 has additions to ensure the protection of threatened and endangered species and requires the consideration of potential impacts from the use of Active/Passive Sediment Treatment (AST) at sites determined by the Copermittees to be exceptional threats to water quality. These requirements were added to ensure additional protection of the Beneficial Uses of waters of the State.

Section F.2.a (Ordinance Update) requires each Copermittee to review and update its grading and storm water ordinances as necessary to comply with the MS4 permit. By updating the grading and storm water ordinances, the Copermittees will have the necessary legal authority to require construction sites to implement effective BMPs that will reduce pollutant discharges to the maximum extent practicable. The Order allows the Copermittees 365 days to review and update their ordinances. The 365 days should be adequate to allow for the relatively minor changes that might be needed since their ordinances were last updated under Order No. R9-2004-001.

Section F.2.b (Source Identification) requires the Copermittees to develop and update a watershed based inventory of all construction sites regardless of size or ownership. This section has been modified to require the inventory be updated regularly, rather than annually because constructions sites tend to change often within the course of a year. More frequent updates will ensure the Copermittees have a more accurate inventory of construction sites within their jurisdiction. A regularly updated inventory of active construction sites will assist the Copermittees in ensuring that all sites are inspected per Order requirements. The Order does not specify the frequency of updates, and instead relies on each Copermittee to develop updates appropriate to local construction activity. Failure to maintain a useful inventory would be a violation of the Order.

Section F.2.c (Site Planning and Project Approval Process) requires Copermittees to incorporate consideration of potential water quality impacts prior to approval and issuance of construction and grading permits.

This section now requires the Copermittees to review project proponents' runoff management plans for compliance with local regulations, policies, and procedures. USEPA recommends that it is often easier and more effective to incorporate storm water quality controls during the site plan review process or earlier.²⁰² In the Phase I storm water regulations, USEPA states that a primary control technique is good site planning.²⁰³ USEPA goes on to say that the most efficient controls result when a comprehensive storm water management system is in place.²⁰⁴ To determine if a construction site is in compliance with construction and grading ordinances and permits, USEPA states that the "MS4 operator should review the site plans submitted by the construction site operator before ground is broken."²⁰⁵ Site plan review aids in compliance and enforcement efforts since it alerts the "MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities."²⁰⁶

The Copermittees have the discretion to determine the depth and detail of the review, as well as the method by which the review will be conducted. The Copermittees review must at least verify that the project proponent's runoff management plan complies with the Copermittee's construction, storm water, and grading ordinances and permits prior to issuing the permit.

Section F.2.d (BMP Implementation) includes modifications to the requirements for each Copermittee to designate and ensure implementation of a set of minimum BMPs at construction sites. These modifications are based on San Diego Water Board findings and experience during implementation of Order No. R9-2004-001.

²⁰² USEPA, 1992. Guidance 833-8-92-002. Section 6.3.2.1.

²⁰³ Federal Register / Vol. 55, No. 222 / Friday, November 16, 1990 / Rules and Regulations. P. 48034.

²⁰⁴ Ibid.

²⁰⁵ USEPA, 2000. Guidance 833-R-00-002. Section 4.6.2.4, P. 4-30.

²⁰⁶ Ibid., P. 4-31.

As a result, the Order requires a minimum set of BMPs to be designated for all sites. In addition to the minimum set of BMPs, enhanced BMPs must be designated and implemented for sites tributary to (i.e. upstream within the same Hydrologic Subarea of) a 303(d) listed water body, or within, directly adjacent to, or discharging directly to ESAs. Enhanced BMPs are control actions and measures specifically targeted to the pollutant or condition of concern and of higher quality and effectiveness than the minimum control measures otherwise required. Enhanced BMPs are expected to be better and more effective for pollutant removal than the minimum set of BMPs.

For sites that are identified as exceptional threat to water quality, active/passive sediment treatment (AST) is required to be implemented in addition to the minimum set and/or enhanced sediment control BMPs. AST is required at construction sites that are identified by the Copermittee as an exceptional threat to water quality due to high turbidity or suspended sediment levels in the site's effluent even when other sediment control BMPs have been implemented. In cases where the Copermittee's designated minimum set of BMPs and/or enhanced BMPs are not able or expected to be able to reduce turbidity or suspended sediment levels to a level that will be protective of water quality, AST is necessary and is considered MEP for the discharges from these sites.

AST has been effectively implemented extensively in the other states and in the Central Valley Region of California.²⁰⁷ In addition, the San Diego Water Board's inspectors have observed AST being effectively implemented at large sites greater than 100 acres and at small, less than 5 acre, in-fill sites. AST is often necessary for Copermittees to ensure that discharges from construction sites are not causing or contributing to a violation of water quality standards. For example, the Basin Plan lists the water quality objective for turbidity as 20 NTU for all hydrologic areas and subareas except for the Coronado HA (10.10) and the Tijuana Valley (11.10). For certain construction sites with high clay content soils, large slopes and exposed areas, the only technology that is likely to meet 20 NTU is AST combined with erosion and sediment controls. To ensure the MEP standard and water quality standards are met, the requirement for implementation of AST at exceptional threat construction sites has been added to the Order, while still providing sufficient flexibility for each Copermittee's unique program.

The Copermittees may define types of construction sites, and/or at any time identify any construction sites after inspections, that are considered exceptional threats to water quality warranting AST. AST may include any sediment control technologies that are capable of reducing turbidity or suspended sediment levels in a construction site's discharge to meet water quality standards in receiving waters.

The Order does not include seasonal restrictions on grading. Seasonal restrictions on grading for storm water are difficult to implement due to the conflict between seasonal grading restrictions, avian breeding and nesting seasons and the seasonal passage of

²⁰⁷ State Water Board, 2004. Conference on Advanced Treatment at Construction Sites.

endangered salmonids; therefore the seasonal grading restrictions have not been included with the other BMPs in the Order. For example, the Least Bell's Vireo and the Coastal California Gnatcatcher, found in southern California, are listed as federally endangered and threatened, respectively.²⁰⁸ Permits issued by the California Department of Fish and Game (CDFG) restrict grading during these birds' breeding seasons, which is from April 10 to August 31 for the Least Bell's Vireo²⁰⁹ and from February 15 to August 31 for the Coastal California Gnatcatcher.²¹⁰ Ideally storm water restrictions on grading would be during the rainy season from October 1 through April 30.²¹¹ Combined, these restrictions would limit construction grading to be during the month of September, which is infeasible. Section D.2.d of the Order still requires project proponents to minimize grading during the rainy season and coincide grading with seasonal dry weather periods to the extent feasible.

Section F.2.e (Inspections) establishes criteria for inspections based on risk factors including size, season, and location of the construction site. Modifications have been made to requirements of Order No. R9-2004-001 based on the experience of the Copermitees and San Diego Water Board construction programs.

The types of construction sites that must be inspected every two weeks during the rainy season have been changed from Order No. R9-2004-001. In general, because large construction sites (i.e. greater than 50 acres) have been closely scrutinized during the last permit period, they tend to be adequately implementing BMPs. Smaller construction sites (i.e. site with less than 50 acres), however, were not inspected as frequently and can pose a significant threat to water quality. The final rule recently promulgated by USEPA for construction sites²¹² identified construction sites with 20 or more acres of land disturbed at one time as posing a significant threat to water quality during the rainy season. Thus, the San Diego Water Board recognized that smaller construction sites needed to be inspected more frequently. As with the construction inspection requirements that were recently adopted for the Orange County Phase I MS4s, this Order requires sites in active grading during the rainy season that are over 30 acres, rather than sites over 50 acres, be inspected every two weeks.

The Order also lowers the size of construction sites adjacent to or discharging directly to ESAs that receive scrutiny. Order No. R9-2004-001 requires such sites five acres and more to be inspected every two weeks during the rainy season. This Order requires such sites one acre and above and tributary to (i.e. with the same Hydrologic Subarea of) a CWA section 303(d) water body segment impaired for sediment; or within, directly adjacent to, or discharging directly to a receiving water within an ESA to be inspected every two weeks during the rainy season and once during August or

²⁰⁸ State of California, Department of Fish and Game, 2010. State and Federally Listed Endangered and Threatened Animals of California.

²⁰⁹ United States Department of the Interior, Fish and Wildlife Service, 2001. Least Bell's Vireo Survey Guidelines.

²¹⁰ United States Department of the Interior, Fish and Wildlife Service, 1997. Coastal California Gnatcatcher (*Poliophtila californica californica*) Presence/Absence Survey Guidelines.

²¹¹ San Diego Water Board, 2001. Order No. 2001-01, San Diego County MS4 Permit. Directive F.2.g.(2).

September. The lower size threshold is consistent with Phase II storm water permits and the Construction General Permit, State Water Board Order No. 2009-0009-DWQ.

The Copermittees also have the discretion to define or identify other construction sites that are significant threats to water quality that must be inspected every two weeks. Several factors are provided that must be considered by each Copermittee in evaluating threat to water quality.

Finally, types of construction sites that must be inspected at least monthly during the rainy season have been changed from Order No. R9-2004-001. All construction sites with one acre or more of soil disturbance must be inspected monthly during the rainy season instead of just 3 times during the rainy season. This level of inspection is necessary by the Copermittees to ensure adequate compliance with their grading, building, storm water or other water quality related orders and provisions.

This section also requires the Copermittees to track the number of inspections for each inventoried construction site. This requirement has been added to ensure that the Copermittees can demonstrate that construction sites are inspected at the minimum frequencies.

Section F.2.g requires the Copermittees to notify the San Diego Water Board when high level enforcement has been issued to a construction site as a result of storm water violations. The Copermittees will define the types of high level enforcement that will warrant a notification of the San Diego Water Board in their JRMPs. Copermittees are also required to annually notify the San Diego Water Board of construction sites that have alleged violations. This section was added to enhance San Diego Water Board and Copermittee communication and coordination in regulating construction sites.

F.3 Existing Development Component

F.3.a. Municipal

The following legal authority applies to section D.3.a:

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 122.26(d)(2)(iv)(A)(1) provides that the proposed management program include "A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(3) provides that the proposed management program include "A description for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving

waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of de-icing activities.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(4) provides that the proposed management program include “A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(5) provides that the proposed management program include “A description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) provides that the proposed management program 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.”

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 the Director determines 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.”

Section F.3.a.(2) (General BMP Implementation) requires the Copermittees to designate minimum BMPs for general municipal areas and activities, regardless of their threat to water quality. BMPs must also be designated for special events. The designated minimum BMPs required to be implemented at a site can be based on the sources or activities present at the site. Threat to water quality is used to determine inspection frequencies in section F.3.a.(8).

Section F.3.a.(3), F.3.a.(4), and F.3.a.(5) (BMP Implementation for Specific Categories) establishes requirements for specific categories of activities and areas. These are selected based on the CWA and findings of the Copermittees in annual reports and ROWD that identify these activities as warranting special attention.

Pesticides, Herbicides, and Fertilizers. 40 CFR 122.26(d)(2)(iv)(A)(6) requires a description of a storm water program for pesticides, herbicides, and fertilizers. In addition, water quality data demonstrates widespread presence of such pollutants in

receiving waters and MS4 discharges. In response to similar requirements of Order No. R9-2004-001, the Copermittees have developed a specific Integrated Pest Management, Pesticides, and Fertilizer guidelines.

Flood Control Structures. In order to more closely meet the intent of the federal regulations and guidance, the requirement has been modified. 40 CFR 122.26(d)(2)(iv)(A)(4) requires "A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible." Retrofitting flood control devices can reduce storm water pollutants and improve water quality.

USEPA expands on the federal provision with the following information: "Storm water management devices and structures that focus solely on water quantity are usually not designed to remove pollutants, and may sometimes harm aquatic habitat and aesthetic values".²¹³ As flood control structures and other elements of the MS4 age and retrofitting becomes necessary, opportunities for water quality improvements arise.

Conveyance systems which take water quality consideration into account (such as grassed swales, vegetated detention ponds, etc.) can often cost less to construct than traditional concrete systems. Evaluation of the applicability of such systems during retrofitting must occur to ensure that pollutants in storm water runoff are reduced to the maximum extent practicable. USEPA supports utilizing BMPs for pollution reduction in flood management projects, stating that "The proposed management program must demonstrate that flood management projects take into account the effects on the water quality of receiving water bodies. [...] Opportunities for pollutant reduction should be considered".²¹⁴

There are generally two types of retrofits for flood control structures. The first type involves adding an engineered device to an existing structure in order to treat or divert runoff. Examples include catch basin inlet filters/screens, ultraviolet disinfection facilities, hydrodynamic separators, and diversions to the sanitary sewer. The second type involves re-installing pervious or natural treatment features to facilities. Examples include removing concrete portions of conveyances to create pervious conveyances; and creating treatment wetlands within flood detention facilities. The later type of retrofit is preferred by the San Diego Water Board. They are likely more sustainable over the long-term because they may require less rigorous operation and maintenance than the former. They may also provide the additional benefit of providing significant

²¹³ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. Washington D.C. EPA/833-B-92-002.

²¹⁴ Ibid.

or incidental opportunities for beneficial uses (e.g., recreation, wildlife, water supply).^{215,216}

Sweeping of Municipal Areas. Sweeping municipal areas would likely be done in the absence of the Order. However, in certain cases it is an important component of a jurisdictional runoff management program. The Order contains requirements to ensure that the use of street sweeping is optimized for runoff applications if it is to be used and reported as a BMP.

Section F.3.a.(6) (Operation and Maintenance of MS4 and Treatment Controls) requires the Copermittees to inspect and remove waste from their MS4s prior to the rainy season.

Maintenance is critical to the successful implementation of every storm water runoff management program. USEPA finds that “Lack of maintenance often limits the effectiveness of storm water structural controls such as detention/retention basins and infiltration devices. [...] The proposed program should provide for maintenance logs of, and identify specific maintenance activities for, each class of control, such as removing sediment from retention ponds every five years, cleaning catch basins annually, and removing litter from channels twice a year.

If maintenance activities are scheduled infrequently, inspections must be scheduled to ensure that the control is operating adequately. In cases where scheduled maintenance is not appropriate, maintenance should be based on inspections of the control structure or frequency of storm events. If maintenance depends on the results of inspections or if it occurs infrequently, the applicant must provide an inspection schedule. The applicant should also identify the municipal department(s) responsible for the maintenance program”.²¹⁷ The MS4 maintenance requirements are based on the above USEPA recommendations. This maintenance will help ensure that structural controls are in adequate condition to be effective year round, but especially at the beginning of and throughout the rainy season.

Two requirements have been added to the Order that were not within Order No. R9-2004-001. Subsection (iii) allows a decreased inspection frequency for facilities that are routinely clean, and subsection (iv) requires trash to be removed from open channels and detention basins in a timely manner. Typically, Copermittees have reported annual or semi-annual creek cleanups as significant BMPs. The large volumes of trash reported to be removed during these events demonstrates the significant amount of trash that accumulates in the channels. In order to reduce the effect of the trash, the Order requires that trash be removed more frequently.

²¹⁵ Burton, Carmen et al. 2005. Assessing Water Source and Channel Type as Factors Affecting Benthic Macroinvertebrate and Periphyton Assemblages in the Highly Urbanized Santa Ana River Basin, California. American Fisheries Society Symposium. Vol.47 pp.239-262.

²¹⁶ Stromberg, Juliet C. 2001. Restoration of Riparian Vegetation in the South-Western United States: the importance of flow regimes and fluvial dynamism. Journal of Arid Environments. Vol.49, pp.17-34.

²¹⁷ USEPA, 1992. Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems. Washington D.C. EPA/833-B-92-002.

Section F.3.a.(7) (Infiltration from Sanitary Sewer to MS4) requires the Copermittees to implement controls and measures to prevent and eliminate sewage infiltration or seepage from municipal sanitary sewers to MS4s through thorough, routine preventive maintenance of the MS4.

Sections F.3.a.(8) and F.3.a.(9) (Inspections and Enforcement) establishes a minimum set of municipal areas and activities for oversight and inspection by the Copermittees and requires that Copermittees properly enforce runoff requirements at municipal areas and activities.

Section F.3.a.(10) (Copermittee Maintained Unpaved Roads Maintenance) requires the Copermittees to implement or require implementation of BMPs for erosion and sediment control during and after maintenance activities on the unpaved roads that the Copermittees are responsible for maintaining, particularly in or adjacent to stream channels or wetlands. As discussed for Finding D.1c, source control BMPs for unpaved roads are needed to minimize the discharge of sediment to the MS4s and receiving waters. There are several guidance documents available (see Discussion for Finding D.1.c) that include BMPs that can be readily implemented by the Copermittees for the development of new unpaved roads. This requirement is necessary to ensure the Copermittees minimize the discharge of sediment from their unpaved roads used for their maintenance activities.

F.3.b. Commercial / Industrial

The following legal authority applies to section F.3.b:

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 122.26(d)(2)(iv)(C) provides that the proposed management program 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.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C)(1) provides that the Copermittee must “identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C)(2) provides that the proposed management program shall “Describe a monitoring program for storm water discharges associated with the industrial facilities identified in paragraph (d)(2)(iv)(C)

of this section, to be implemented during the term of the permit, including the submission of quantitative data on the following constituents: any pollutants limited in effluent guidelines subcategories, where applicable; any pollutant listed in an existing NPDES permit for a facility; oil and grease, COD, pH, BOD₅, TSS, total phosphorus, total Kjeldhal nitrogen, nitrate plus nitrite nitrogen, and any information on discharges required under 40 CFR 122.21(g)(7)(iii) and (iv)."

Federal NPDES regulation 40 CFR 122.26(d)(2)(ii) provides that the Copermittee "Provide an inventory, organized by watershed of the name and address, and a description (such as Standard Industrial Classification [SIC] codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity."

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 the Director determines 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 122.26(d)(2)(i)(A) provides that each Copermittee must demonstrate that it can control "through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A) provides that the Copermittee develop a proposed management program which includes "A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls."

Section F.3.b.(1) (Source Identification) requires that botanical and zoological gardens and exhibits, building material retailers and storage, animal boarding facilities and kennels, mobile pet services, plumbing services, and power washing services be included in the Copermittees' inventory of commercial sites/sources. These commercial or industrial sites and sources have been identified by the Copermittees and/or the San Diego Water Board as facilities that may contribute a significant pollutant load to the MS4. In cases where a particular type of facility is not present or known to operate within a Copermittee's jurisdiction, there is no expectation that there would be any such facilities included in the inventory. If, however, that type of facility does become established or begins operating within a Copermittee's jurisdiction during the period of this Order, the Copermittees are expected to identify those sites or sources and include them in their inventory of commercial or industrial facilities. This

is not a significant change because Order No. R9-2004-001 requires that any commercial or industrial site or source determined by a Copermittee to contribute a significant pollutant load to the MS4 be added to its inventory of commercial or industrial sites.

The inventory of commercial and industrial facilities is expected to be reviewed and, if necessary, updated at least annually and included in the Annual Report. The inventory is expected to include the prioritization of each facility to ensure the facility is inspected at the correct frequency. If changes are made to the prioritization for any facilities, justification for the changes is expected to be reported in the Annual Report. The inventory is the foundation for the tracking of BMP implementation, number and date(s) of inspections performed, inspection findings, violations, and enforcement actions for each commercial or industrial facility, all of which are expected to be included in the Annual Report.

Section F.3.b.(3) (Mobile Businesses Program) requires each Copermittee to develop and implement a program to reduce the discharge of storm water pollutants from mobile businesses to the MEP and to prevent the discharge of non-storm water. Mobile businesses are service industries that travel to the customer to perform the service rather than the customer traveling to the business to receive the service. Examples of mobile businesses are power washing, mobile vehicle washers, carpet cleaners, port-a-potty servicing, pool and fountain cleaning, mobile pet groomers, plumbers, and landscapers. These mobile services produce waste streams that could potentially impact water quality if appropriate BMPs are not implemented.

Order No. R9-2004-001 also requires BMP implementation for certain mobile businesses (e.g., mobile vehicle washing and mobile carpet cleaning). These storm water requirements of Order No. R9-2004-001 are not significantly different from the existing requirements. The Order specifies the Copermittees must prevent non storm water dry weather flows from entering the MS4 (see section C.2.b). Special attention is required for mobile businesses because of the difficulty of controlling discharges from mobile businesses with existing programs.

Mobile businesses present a unique difficulty in storm water regulation. Due to the transient nature of the business, the regular, effective practice of unannounced inspections is difficult to implement. Also, tracking these mobile businesses is difficult because they are often not permitted or licensed and their services cross Copermittee jurisdictions. Mobile businesses that operate within a municipality may be based in another municipality or even outside the Region.

The Order takes into account the difficulties in regulating mobile businesses. The Copermittees may choose to cooperate in developing and implementing their programs for mobile businesses, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education. Sharing information will allow the Copermittees to better identify and track mobile businesses operating in their jurisdictions.

Because BMPs have been developed already, but communication with mobile businesses may be difficult, the Order provides broad flexibility to the Copermittees for developing a targeted program within the Commercial portion of each JRMP.

Section F.3.b.(4) (Inspection of Industrial and Commercial Sites/Sources) includes requirements for inspections of industrial and commercial sites/sources. The Order is similar to the Order No. R9-2004-001 in requiring that inspections check for coverage under the General Industrial Permit; assessment of compliance with Copermittee ordinances and permits related to storm water and non-storm water runoff; assessment of BMP implementation, maintenance, and effectiveness; visual observations for non-storm water discharges, potential illicit connections, and potential discharge of pollutants in storm water runoff; and education and outreach on storm water pollution prevention.

The Order also requires that inspections include review of BMP implementation plans if the site uses or is required to use such a plan, and the review of facility monitoring data if the site monitors its runoff. BMP implementation plans do not include SSMPs required pursuant to section F.1.d. If a facility is not required to have a BMP implementation plan or required to collect monitoring data, the inspection does not need to include a review of this information. BMP implementation plans and monitoring data are expected to be available for any facility that is covered under the General Industrial Permit. The BMP implementation plans and monitoring data can provide the inspector pertinent information that can be used during the visual inspection of the facility (e.g., BMPs implemented, maintenance records for BMPs, pollutants in storm water runoff). The Copermittees' inspectors have the discretion to determine the depth and detail of the review and use of the information in conducting the inspection.

Changes in the Order's requirements for inspection procedures mimic USEPA's guidance: "Site inspections should include (1) an evaluation of the pollution prevention plan and any other pertinent documents, and (2) an onsite visual inspection of the facility to evaluate the potential for discharges of contaminated storm water from the site and to assess the effectiveness of the pollution prevention plan."²¹⁸ In 1999, USEPA "recognized visual inspection as a baseline BMP for over 10 years," and "visual inspections are an effective way to identify a variety of problems. Correcting these problems can improve the water quality of the receiving water."²¹⁹

Inspection frequencies in the Order have been modified from Order No. R9-2004-001. Order No. R9-2004-001 specifies frequencies for inspecting commercial/industrial sites based on threat to water quality and requires high priority sites to be inspected annually. For sites not identified as high priority, each site must be inspected at least once within a 5 year period.

²¹⁸ USEPA, 1992. Guidance 833-8-92-002, section 6.3.3.4 "Inspection and Monitoring".

²¹⁹ USEPA, 1999. 832-F-99-046, "Storm Water Management Fact Sheet – Visual Inspection".

Also, the option for implementing a third party certification program is included. To the extent that third party certifications are conducted to fulfill the inspection requirements for this section of this Order, the Copermittee will be responsible for conducting and documenting quality assurance and quality control of the third-party certifications. The Copermittees may propose a third party certification program that must receive approval from the San Diego Water Board Executive Officer prior to implementation. The Order includes several requirements that must be included in the third party certification program in order for it to be considered for approval by the San Diego Water Board.

Section F.3.b.(6) (Reporting of Non-Compliant Sites) has been added as additional notification to the San Diego Water Board regarding commercial and industrial sites. Copermittees are required to annually notify, prior to the rainy season, the San Diego Water Board of commercial and industrial sites that have any unresolved high level enforcement actions. This was added to enhance San Diego Water Board and Copermittee communication. Information may be provided as part of the JRMP annual report if submitted prior to the rainy season.

F.3.c. Residential

The following legal authority applies to section F.3.c:

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 122.26(d)(2)(iv)(A) provides that the Copermittee develop a proposed management program which includes "A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls."

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 the Director determines 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."

Section F.3.c.(4) (Common Interest Areas / Home Owner Association Areas / Mobile Home Parks) includes requirements for common interest areas / homeowners' associations and mobile home parks. Many residential neighborhoods and some commercial areas within the jurisdiction of the Copermittees are within common interest developments and are, therefore, subject to management of common areas by associations. The Declaration of the Covenants, Conditions and Restrictions (CC&Rs)

contains the ground rules for the operation of such an association. CC&Rs are an appropriate method for protecting the common plan of developments and to provide for a mechanism for financial support for the upkeep of common areas including roads, storm drains, and other components of storm water conveyance systems.

This Order interprets common interest areas as property subject to the codes and ordinance and enforcement mechanisms of the city or county in which it resides and, therefore, holds the local government responsible for the discharge of wastes from storm water conveyance systems located within these areas.

Section F.3.d. Retrofitting Existing Development

The following legal authority applies to section F.3.d:

Legal Authority: The legal authority for retrofitting existing development is the same legal authority as that identified for municipal, industrial, commercial and residential development sections (See fact sheet discussion on those sections, F.3.a – c). In particular, CWA sections 402(p)(3)(B)(ii-iii), and CWC section 13377 give the Regional Water Board the legal authority to require retrofitting of existing development.

Section F.3.d has been added to require a plan for the retrofit of existing development (see Finding D.3.h and Discussion). This section contains specific requirements for a program to retrofit existing development. When appropriately applied as in this Order, retrofitting existing development meets MEP standards.

Existing BMPs are not sufficient, as evidenced by 303(d) listings and exceedances of Water Quality Objectives from the Copermittees monitoring reports. More advanced BMPs, including the retrofitting of existing development with LID, are part of the iterative process. Previous permits limited the requirement of treatment control BMPs to new development and redevelopment. Based on the current rate of redevelopment compared to existing BMPs, the use of LID only on new and redevelopment will not adequately address current water quality pollution and problems, including downstream hydromodification. Retrofitting existing development is practicable for a municipality through a systematic evaluation, prioritization and implementation plan focused on impaired water bodies, pollutants of concern, areas of downstream hydromodification, feasibility and effective communication and cooperation with private property owners. The retrofitting requirements are based largely on guidance from the USEPA²²⁰ and the Center for Watershed Protection.²²¹

Section F.3.d.(1) requires the Copermittees to identify and inventory areas of existing development within their jurisdiction as candidates for retrofitting projects. The Copermittees are expected to examine the inventories that they are maintaining as required under sections F.3.a-c, inspection findings, and any other forms of data and information to identify the candidates for retrofitting projects. Several areas of existing

²²⁰ USEPA, MS4 Permit Improvement Guide, EPA 833-R-10-001, April, 2010.

²²¹ Center for Watershed Protection, Urban Subwatershed Restoration Manual No. 3, Urban Stormwater Retrofit Practices Manual, Version 1.0, July/August 2007.

development that must be identified as candidates for retrofitting projects are listed. Based in part on guidance developed by the Center for Watershed Protection, these areas of existing development are expected to provide the most immediate improvements for water quality through retrofitting. This list of areas that must be considered does not limit the Copermittees from identifying other areas within their jurisdiction that may be evaluated for retrofitting projects.

Section F.3.d.(2) requires each Copermittee to evaluate the candidates identified under section F.3.d.(1) and rank them based on several criteria. One or more types of retrofit source control or treatment control BMPs may be evaluated for each candidate. Landowner cooperation is among the criteria to evaluate and prioritize retrofitting. For example, retrofitting projects on publicly owned properties are likely and expected to be feasible with sufficient funding secured.

Section F.3.d.(4) requires each Copermittee to cooperate with private property owners to encourage the implementation of site specific retrofitting projects. Because the Copermittees have limited authority to directly require retrofitting projects on private property, the Copermittees must encourage private property owners to implement retrofitting projects through indirect programs and incentives. Several programs and incentives that have been successful in other areas are provided in the Order for the Copermittees consideration in developing their practices to encourage private property owners to retrofit their sites. This list, however, does not limit the Copermittees from identifying and considering other practices that may be effective in encouraging private property owners to implement retrofitting projects on their sites.

Section F.3.d.(5) requires retrofit BMPs that are implemented to be tracked in accordance with section F.1.f. The retrofit BMPs must also be inspected. Retrofit BMPs on publicly owned properties must be inspected per section F.1.f. Privately owned retrofit BMPs must be inspected as needed to ensure proper operation and maintenance. Tracking and inspecting retrofit BMPs is necessary for the Copermittee to ensure that the retrofit BMPs are not removed and are maintained to remain effective. Inspections can also provide the Copermittee useful information on the effectiveness of individual retrofit BMPs. For retrofit BMPs on publicly owned properties, tracking and inspection will correct any problems with the BMPs as soon as a problem arises and will ensure proper maintenance.

For retrofit BMPs on privately owned properties, retrofit BMPs are expected to be implemented and maintained by the property owner on a voluntary basis. The retrofit BMPs must be tracked by the Copermittees, but their inspections are required less frequently due to access issues (i.e. on an as-needed basis). Voluntary retrofitting projects do not warrant frequent Copermittee inspections due to the property owner's willingness to retrofit. Periodic inspections may be performed to ensure the site owner has not removed the retrofit BMPs. Periodic inspections would also ensure that the retrofit BMPs remain effective by providing an opportunity for the inspector to educate the original and subsequent site owner(s) if the retrofit BMP is not operating effectively and requires some maintenance.

F.4. Illicit Discharge Detection and Elimination

The following legal authority applies to section F.4:

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 regulations 40 CFR 122.26(d)(2)(iv)(B) provides that the 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.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Copermittee include in its proposed management program “a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) provides that the Copermittee include in its proposed management program “a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) provides that the Copermittee include in its proposed management program “procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) provides that the Copermittee include in its proposed management program “a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(5) provides that the Copermittee include in its proposed management program “a description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(6) provides that the Copermittee include in its proposed management program “a description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(7) provides that the Copermittee include in its proposed management program “a description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary.”

Section F.4.a (Prevent and Detect Illicit Discharges and Connections) requires the Copermittees to implement a program to actively seek and eliminate IC/IDs. Additional wording has been added to this section to clarify and ensure that all appropriate municipal personnel (i.e. field personnel) are utilized in the program to observe and report these illicit discharges and connections.

Section F.4.b (Maintain MS4 Map) requires each Copermittee to maintain an updated map of its entire MS4 and the corresponding drainage areas within its jurisdiction. The Order specifies that the map must include the segments of the storm sewer system owned, operated, and maintained by the Copermittee, and include locations of all known inlets, connections with other MS4s, and outfalls to the Copermittee's MS4. Knowing where their inlets, access points, connections with other MS4s, and outfalls are located will allow the Copermittees to better track, identify, and eliminate IC/IDs. The use of a geographic information system (GIS) by the Copermittees is strongly encouraged for the MS4 map. The Riverside County Flood Control and Water Conservation District (RCFCD) currently maintains a GIS layer that is a compilation of all the Copermittee MS4 maps. Although an individual Copermittee may not have GIS capabilities, each Copermittee has agreements with RCFCD for providing updated MS4 maps to the RCFCD to update this GIS layer and subsequent submittal to the San Diego Water Board.

Section F.4.e (Investigation / Inspection and Follow-Up) requires the Copermittees to conduct follow up investigations and inspect portions of the MS4 for illicit discharges and connections, based on dry weather effluent analytical monitoring results. The section also requires the Copermittees to establish criteria for triggering follow up investigations. Additional language has been added to this section to clarify the minimum level of effort and timeframes for follow up investigations when dry weather limitations are exceeded. This section requires the Copermittees to include and evaluate the specified action levels in their response criteria and to develop response criteria for pollutants without action levels.

Timely investigation and follow up of exceedances is necessary to identify sources of illicit discharges, especially since many of the discharges are transitory. The requirements for immediate response to obvious illicit discharges and a 2 business day minimum response time when field screening action levels are exceeded is necessary to ensure timely response by the Copermittees. When analytical data indicate an exceedance of action levels, the Copermittee(s) have 5 business days to confirm the need to initiate an investigation to identify the source of the exceedance. The Copermittees are expected to investigate for potential sources of the pollutant(s) that may have caused the exceedance of action levels upstream of the collection point and collect additional analytical and field data as necessary. If the quality of the data

is confirmed to be unreliable or inaccurate and the investigation indicates there were no sources of the pollutant that could have caused an exceedance of the applicable action level, then further investigation is no longer warranted and should be documented in the Annual Report.

Section F.4.f (Elimination of Illicit Discharges and Connections) requires the Copermittee(s) to take immediate action to initiate steps necessary to eliminate illicit discharges, illicit discharge sources, and illicit connections that have been detected as a result of the investigations required under section F.4.e. The steps necessary to eliminate the illicit discharge or connection are typically initiated with identifying and contacting the person responsible for the illicit discharge or connection. The Copermittee(s) are expected to eliminate the detected illicit discharges and connections as soon as possible after they are able to contact the person responsible for the illicit discharge or connection. The steps expected and/or necessary to eliminate illicit discharges and connections under different scenarios and for different sources should be developed and implemented by the Copermittee(s). These steps may be outlined by the Copermittee(s) in their JRMPs.

In some cases, the Copermittee(s) may determine that one of the necessary steps is to contact the San Diego Water Board to assist in resolving and eliminating illicit discharges and connections. The Copermittee(s), however, are expected to exhaust all of their available administrative and enforcement authorities and mechanisms for addressing and eliminating illicit discharges and connections before contacting the San Diego Water Board for assistance.

Section F.4.h (Prevent and Response to Sewage Spills and Other Spills) requires each Copermittee to implement measures to prevent and respond to spills into its MS4. These requirements are consistent with Order No. R9-2004-001 and based on federal regulations at 40 CFR 122.26(d)(2)(iv)(B)(4). Those federal NPDES regulations clearly require that owners and operators of MS4s have procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.

The Order includes sewage and non-sewage spills in the requirement for spill prevention and response. Federal regulations clearly define sewage as an illicit discharge that must be addressed by municipalities (see Phase II Final Rule, p.68758). Sewage is an illicit discharge to the MS4 that threatens public health. As such, the Copermittees must implement measures to prevent sewage from entering the MS4 system and must respond to illicit discharges that have entered the system. This section has been revised to clarify that management measures and procedures must be implemented to prevent, respond to, and cleanup spills. In addition to the management measures and procedures, a mechanism for the Copermittees to be notified of spills is necessary in order for those management measures and procedures to be implemented as soon as possible after a spill has occurred. The facilitation of public reporting of illicit discharges required by section F.4.c, in addition to regular and open communication with other agencies (e.g., sanitary sewer districts),

may also serve as a mechanism for notifying the Copermittees of spills within their jurisdiction.

Section F.3.a.(7) of the Order includes requirements for measures that must be taken to prevent sewage spills. Examples of measures being implemented by Copermittees include inspections of fats, oils, and grease management at restaurants. Other preventative measures can be implemented during routine planning efforts for new development and redevelopment projects. Similarly, building permit inspections should be used to verify the integrity of the sanitary and storm sewer infrastructure and ensure that cross-connections between the two are avoided.

F.5. Public Participation Component

The following legal authority applies to section F.5:

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).

No significant changes from Order No. R9-2004-001 have been made to this section of the Order.

F.6. Education Component

The following legal authority applies to section F.6:

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 122.26(d)(2)(iv)(A)(6) provides that the proposed management program 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."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) provides that the proposed management program include "A description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(4) provides that the proposed management program include "A description of appropriate educational and training measures for construction site operators."

Section F.6 (Education Component) includes an introductory paragraph that is the same as in Order No. R9-2004-001, except for the addition of New Development / Redevelopment Project Applicants, Developers, Contractors, Property Owners, and other Responsible Parties to the list of target communities.

Section F.6.a (General Requirements) includes education topics that are required for the education programs developed and implemented for the target communities. The Copermittees can choose how and to what degree to address these topics. Some topics may be more important for certain target communities.

The requirement for educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials has been moved to this section from the Illicit Discharge Detection and Elimination section.

Section F.6.b (Specific Requirements) includes requirements for specific target communities, which are in addition to the general requirements. The education and training requirements previously included in other sections of Order No. R9-2004-001 (i.e. Development Planning, Construction, Existing Development) have been removed and consolidated under this section. Specific education requirements are included for: 1) the Copermittees' departments and personnel (i.e. staff and contractors, and Planning Boards and Elected Officials, if applicable), 2) new development / redevelopment and construction sites, 3) commercial and industrial sites/sources, and 4) residential and general public communities.

Section F.6.b.(1) (Copermittee Departments and Personnel) requires the Copermittees to implement an education program for their staff and contractors. Education is required at all levels of municipal staff and contractors. Education is especially important for the staff responsible for planning and development review, oversight, inspection and enforcement of construction activities, selecting and implementing BMPs for Copermittee areas, inspection and enforcement of industrial and commercial facilities, and other Copermittee activities which might result in discharges of pollutants if proper BMPs are not used.

Education of Copermittee departments and personnel may be conducted with joint and/or individual training programs (i.e. on a regional and/or jurisdictional scale), and may include both formal and informal training. The Copermittees may choose the scale and methods for educating their departments and personnel.

The annual training required for construction, building, code enforcement, grading review staffs, inspectors, and other responsible construction staff requires the training to occur annually, prior to the rainy season.

Section F.6.b.(2) (New Development / Redevelopment and Construction Sites) requires the Copermittees to educate parties responsible for a project (i.e. project applicants, developers, contractors, property owners, community planning groups, and other responsible parties) about storm water issues and BMPs. Different levels of training will be needed for planning groups, owners, developers, contractors, and construction workers, but all should get a general education of storm water requirements. Education of all construction workers can prevent unintentional discharges, such as discharges by workers who are not aware that they are not allowed to wash things down the storm drains. Training for BMP installation workers is imperative because the BMPs will fail if not properly installed and maintained. Training for field level workers can be formal or informal tail-gate format.

Section F.6.b.(3) (Commercial and Industrial Sites / Sources) requires the Copermittees to notify the owner/operator of each of their inventoried commercial and industrial sites/sources of the BMP requirements applicable to the site/source at least twice during the five-year period of the Order. Notification of BMP requirements may be fulfilled during the business license application/renewal process and/or during site inspections. Notifying commercial and industrial sites/sources of the BMP requirements will ensure the business owners are aware of the appropriate BMPs to implement that prevent discharges of pollutants from these sites/sources.

Section F.6.b.(4) (Residential and General Public) requires the target audiences for residential and general public communities to include underserved target audiences (e.g., disadvantaged communities), residents and managers of Common Interest Areas / Homeowner Associations, and owners and residents of mobile home parks. These communities are frequently neglected or underserved by most water quality education programs, but can be significant sources of pollutants. Thus, it is important for the residential and general public education programs to reach out to and educate these communities on their potential impacts to water quality.

G. Watershed Water Quality Workplan

The following legal authority applies to section G:

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 122.26(a)(3)(ii) states: "The Director may [...] issue distinct permits for appropriate categories of discharges [...] including, but not limited to [...] all discharges within a system that discharge to the same watershed [...]"

Federal NPDES regulations 40 CFR 122.26(a)(3)(v) states: "Permits for all or a portion of all discharges from large or medium municipal separate storm sewer systems that are issued on a system-wide, jurisdiction-wide, watershed, or other basis may specify different conditions relating to different discharges covered by the permit, including different management programs for different drainage areas [watersheds] which contribute storm water to the system."

Federal NPDES regulation 40 CFR 122.26(a)(5) states: "The Director may issue permits for municipal separate storm sewers that are designated under paragraph (a)91(v) of this section on a system-wide basis, a jurisdiction-wide basis, watershed basis, or other appropriate basis."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv) states: "Proposed programs may impose controls on a system-wide basis, a watershed basis, a jurisdiction basis, or on individual outfalls."

Section G requires Copermittees to continue implementation of their watershed runoff management program (WRMP), however the implementation approach has changed. Order No. R9-2004-001 required a Watershed SWMP that included a collaborative strategy to abate the sources and reduce the discharges causing high priority water quality problems. This strategy was to guide each watershed Copermittee's selection and implementation of Watershed Activities, so that the activities selected and implemented would remove that pollutant contribution responsible for the identified high priority water quality problem. Outcomes of these requirements were not able to demonstrate improvements to water quality.

Revised language in Order No. R9-2010-0016 attempts to focus each watershed Copermittee's efforts and resources on addressing the highest water quality problems in the watershed by focusing attention on the health of the receiving water body and the most efficient use of the watershed Copermittee's time and resources. Order No. R9-2010-0016 requires the watershed Copermittees to develop and follow a workplan approach towards assessing receiving water body conditions, prioritizing the highest

priority water quality problems, implementing effective BMPs, and measuring water quality improvement in the receiving water.

Section G.1. (Watershed Workplan Components) requires the watershed Copermittees to develop a workplan that will implement a collective watershed strategy to assess and prioritize the water quality problems, and identify, address, and mitigate the highest priority water quality issues/pollutants within the Upper Santa Margarita watershed's receiving waters. This section specifies the minimum components that must be included in the Watershed Workplan. Development of a workplan rather than watershed activities will allow the Copermittees flexibility to iteratively modify their watershed strategy over the course of future planning years as priorities change.

Section G.2 (Watershed Workplan Implementation) requires the Copermittee's to begin implementing the Watershed Workplan within 90 days of submittal unless otherwise directed by the San Diego Water Board. The Watershed Workplan must meet the requirements of the Order. The San Diego Water Board expects that implementing the Watershed Workplan, which will coordinate the Copermittees' efforts in the watershed, will result in water quality improvements sooner than later. If there are deficiencies in the Watershed Workplan, the San Diego Water Board will provide guidance to remedy those deficiencies as appropriate.

Section G.3 (Copermittee Collaboration) requires the Copermittees to collaborate to develop and implement the Watershed Workplan. Watershed Copermittee collaboration must include frequent regularly scheduled meetings. Because there are several other agencies with MS4s in the Upper Santa Margarita watershed that the Copermittees have indicated in the ROWD are a source of pollutants that may discharge into the MS4 systems of the Copermittees, the Copermittees are also required to pursue interagency agreements, or similar cooperative efforts, with non-Copermittee owners of the MS4 (such as Caltrans, Native American tribes, and school districts) to control the contribution of pollutants from one portion of the shared MS4 to another portion of the shared MS4. In addition, the Copermittees are required, as appropriate, to participate in watershed management efforts to address water quality issues within the entire Santa Margarita Watershed (such as the County of San Diego and United States Marine Corps Camp Pendleton).

Section G.4 (Public Participation) requires the Copermittees to implement a watershed-specific public participation mechanism within each watershed. A required component of the watershed-specific public participation mechanism must be a minimum 30-day public review of the Watershed Workplan. Opportunity for the public to review and comment on the Watershed Workplan must occur before the workplan is implemented.

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 168 of 199

Section G.5 (Watershed Workplan Review and Updates) requires the Copermittees to review and update the Watershed Workplan annually to identify needed changes to the prioritized water quality problem(s) listed in the workplan. This section requires the Copermittees to review and update their workplan each year to incorporate changing priorities and evolving watershed strategies.

Section G.6 (Pyrethroid Toxicity Reduction Evaluation) requires the Copermittees to incorporate the pyrethroid pollutant reduction program into the Watershed Workplan, as described in the ROWD.

H. Fiscal Analysis

The following legal authority applies to section H:

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 122.26(d)(2)(vi) provides that “[The Copermittee must submit] for each fiscal year to be covered by the permit, a fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the programs under paragraphs (d)(2)(iii) and (iv) of this section. Such analysis shall include a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.”

Section H has been expanded in order to develop more useful and meaningful fiscal reporting. A revamped fiscal reporting strategy will provide the San Diego Water Board and the Copermittees with better capability to manage performance of the programs.

The Copermittees’ effort is expected to provide standardization of reporting so that figures between Copermittees are comparable, which is one of many types of information which can be used by the San Diego Water Board to better understand Copermittee program implementation. Standardization and comparison of fiscal analysis reporting is supported by the State Water Board funded NPDES Stormwater Cost Survey, which finds that “standards for reporting costs and storm water activities are needed to allow accurate cost comparisons to be made between storm water activities.”²²² This document also provides guidance regarding categorization of expenditures for tracking and reporting.

The Order establishes a criterion for when Copermittees must add narrative evaluations to the tables. This will address some of the variability in reporting and will provide the public and San Diego Water Board with improved understanding of how resources are shifted in response to annual assessments. This will also help ensure that projected annual costs adequately reflect planned program modifications described in the annual reports.

The San Diego Water Board has chosen not to require a description of fiscal benefits realized from implementation of the storm water protection program. This is a recommendation from the National Association of Flood and Stormwater Management

²²² Currier, et al., 2005. *NPDES Storm Water Cost Survey Final Report*. Prepared for California State Water Resources Control Board by Office of Water Programs, California State University, Sacramento. P. 63.

Agencies.²²³ For instance, the current fiscal assessment does not address city-wide fiscal benefits of protection (e.g., public health, tourism, property values, economic activity, beneficial uses, etc.), even though many costs currently reported to the San Diego Water Board are for related activities. This type of assessment may help Copermittees improve the allocation of resources and it may help the Copermittees secure adequate funding for the program. Finally, it will provide a clearer picture of the storm water and non-storm water runoff program to the public and San Diego Water Board. However, qualitative assessments could be overly subjective and most Copermittees likely lack the ability to provide accurate quantitative assessments. The San Diego Water Board encourages Copermittees to consider means for conducting assessments of fiscal benefits derived from the programs. Such assessments could be conducted on a regional scale similar to studies of program costs conducted by the State Water Board.²²⁴

Currently, each Riverside County municipality's annual report includes a table based on a template developed by the principal Copermittee. The template was meant to facilitate reporting consistency among the Copermittees. The annual report table contains estimates of spending during the reported period and estimates of the next year's spending.

Review of the fiscal analysis tables included in the annual reports has not been as straightforward as expected, and the value of the information is moderate. The reviews indicate that cities do not use consistent methods to fill in the tables because they use different accounting and budgeting processes, and certain storm water program expenditures are not easily categorized into the table formats. Furthermore, storm water permit-related activities involve several departments, which makes it difficult for the storm water manager to gather and decipher actual costs.

These issues also make it difficult for the Copermittees to accurately compartmentalize expenditures within the format. As a result, the current financial reporting provides estimates at best and cannot be reliably used to compare program implementation among most municipalities.

²²³ National Association of Flood and Stormwater Management Agencies. 2006. *Guidance for Municipal Stormwater Funding*. Prepared under a grant provided by the USEPA.

²²⁴ State Water Board, 2005. NPDES Stormwater Cost Survey.

I. Total Maximum Daily Loads

The following legal authority applies to section I:

Broad Legal Authority: CWA section 303(d)(1)(A) and (C), and Federal regulations 40 CFR 130.2(i), 40 CFR 130.7(b)(1) and 40 CFR 122.44(d)(1)(vii)(B).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.44(d)(1)(vii)(B) requires that NPDES permit requirements incorporate water quality based effluent limitations that must be consistent with the requirements and assumptions of wasteload allocations (WLAs) assigned to the MS4 as part of the calculated TMDLs.

Section I.1. is a placeholder for the requirements and WLAs assigned to the Copermittees' MS4 discharges of any future TMDLs that are adopted by the San Diego Water Board.

Section I.2 includes, by reference to Santa Ana Water Board Order No. R8-2010-0033, including the relevant sections of the fact sheet and findings (and subsequent revisions), the requirements and WLAs assigned to the MS4s for the Lake Elsinore/Canyon Lake (San Jacinto Watershed) Nutrient TMDLs that are being implemented for the Santa Ana Water Board. Because the San Jacinto Watershed is within the boundaries of the Santa Ana Water Board's region, the Lake Elsinore/Canyon Lake Nutrient TMDLs and its requirements must be implemented by the Cities of Murrieta and Wildomar for the areas within their jurisdictions located in the Santa Ana Region (Region 8).

J. Program Effectiveness Component

The following legal authority applies to section J:

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 122.26(d)(2)(v) provides that the Copermittees must include “Estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of the municipal storm water quality management program. The assessment shall also identify known impacts of storm water controls on ground water.” Under Federal NPDES regulation 40 CFR 122.42(c) applicants must provide annual reports on the progress of their storm water management programs.

Section J.1 (Program Effectiveness Assessments) of the Order requires the Copermittees to assess the effectiveness of the implementation of their jurisdictional, watershed, and monitoring programs and activities. The Riverside County Storm Water Program is supportive of the CASQA effort, and use of CASQA assessment techniques is consistent with the methodology proposed in the ROWD.^{225,226}

This section requires the Copermittees to establish assessment measures or methods for each of the six outcome levels described by CASQA that will be used to assess the effectiveness of the Jurisdictional Runoff Management Program (JRMP) and Watershed Workplan implementation at (1) reducing the discharge of storm water pollutants from its MS4 to the MEP; (2) prohibit non-storm water discharges; and (3) preventing runoff discharges from the MS4 from causing or contributing to a violation of water quality standards.

The effectiveness assessment measures or methods must be established and included as part of the updated JRMPs and Watershed Workplan that are due on or before June 30, 2012. Beginning with the Annual Report due in 2013, the Copermittees are required to annually perform the assessments using the established assessment measures or methods.

Section J.2 (Respond to Assessments) of the Order requires the Copermittees to improve jurisdictional and watershed activities or BMPs when they are found to be ineffective or when water quality impairments are continuing. This requirement fulfills the purpose of conducting effectiveness assessments – to improve and refine the Copermittees’ programs. The requirement is consistent with USEPA’s Phase II

²²⁵ The Riverside County Copermittees proposed an assessment strategy based on the CASQA Municipal Stormwater Program Effectiveness Assessment Guidance in section 6.1.2.1 of the ROWD.

²²⁶ CASQA 2007. Municipal Stormwater Program Effectiveness Assessment Guidance.

regulations, which state: "If the permittee determines that its original combination of BMPs are not adequate to achieve the objectives of the municipal program, the MS4 should revise its program to implement BMPs that are adequate [...]."²²⁷

Each Copermittee must update the effectiveness assessment work plan and schedule to address any program modifications and improvements in response to the findings of their assessment. The updates to the work plan and schedule must be incorporated into the applicable Annual Report.

Section J.3 (Assessment and Response Reporting) of the Order describes the information required to be submitted in the Annual Report pertaining to program effectiveness assessments, review, and response. A summary of the effectiveness assessments, responses to the effectiveness assessments, and any steps implemented to improve the Copermittee's ability to assess program effectiveness must be included with the Annual Report. The reporting will demonstrate whether Copermittees have appropriately responded to the effectiveness assessments.

²²⁷ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68762.

K. Reporting

The following legal authority applies to section K:

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 122.42(c) requires that “The operator of a large or medium municipal separate storm sewer system or a municipal separate storm sewer system that has been designated by the director under § 122.26(a)(1)(v) of this part must submit an annual report by the anniversary of the date of the issuance of the permit for such system. The report shall include: (1) The status of implementing the components of the storm water management program that are established as permit conditions; (2) Proposed changes to the storm water management program that are established as permit condition. Such proposed changes shall be consistent with § 122.26(d)(2)(iii) of this part; (3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under § 122.26(d)(2)(iv) and (d)(2)(v) of this part; (4) A summary of data, including monitoring data, that is accumulated throughout the reporting year; (5) Annual expenditures and budget for year following each annual report; (6) A summary describing the number and nature of enforcement actions, inspections, and public education programs; (7) Identification of water quality improvements or degradation.”

CWC section 13267 provides that “the Regional Board may require than any person who has discharged [...] shall furnish, under penalty of perjury, technical or monitoring reports which the regional board requires.”

Section K.1 (Runoff Management Plans) outlines the process and due dates for submitting JRMPs and Watershed Workplan. The information to be included in the Jurisdictional and Watershed plans must be sufficient to demonstrate the capacity to implement the requirements of section F and G, respectively, of the Order.

In many cases, the requirements of the Order should not necessitate a complete rewrite of the plans, as was basically done in 2005. Only sections of the Order which are new or have been significantly changed should warrant rewriting of plans' sections. The San Diego Water Board plans to work with the Copermitees and provide guidance regarding where JRMPs and Watershed Workplan must be updated in accordance with the Order. This will help ensure that rewriting, reporting, and review efforts are minimized.

Section K.2 (Other Required Reports and Plans) include requirements for information to be included in the SSMP update, the HMP, and the Report of Waste Discharge (ROWD) for the next permit reissuance. The Order requires submittal of an updated SSMP on or before June 30, 2012; a draft HMP on or before June 30, 2013; and a

ROWD 180 days in advance of the expiration of this Order. The section also identifies the minimum information to be included in the ROWD, based on USEPA's May 17, 1996 guidance "Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems."

Section K.3 (Annual Reports) outlines the process and roles of the Copermittees for developing and submitting the JRMP Annual Report. Information to be included in the Annual Reports is described in section K.3.a.(3).

Each Copermittee is required to maintain records demonstrating that Permit activity requirements have been met, which allows the San Diego Water Board to confirm compliance as needed, such as via inspections, program audits, or requests for information per CWC sections 13225 and 13267.

Reporting requirements in the Order focus on results and responses to the effectiveness assessments conducted by the Copermittees. This will allow the San Diego Water Board to determine how appropriately municipalities adapt and tailor their programs to findings from activities and monitoring results. Assessment of progress toward meeting the objectives is possible because the data collected by the Copermittees under Order No. R9-2004-001 can be used to establish baseline conditions. Compared to activity-based reporting, this will greatly enhance the ability of the San Diego Water Board, Copermittees, and the public to determine whether the programs are successful.

The Order reduces the amount of program activity-based reporting from Order No. R9-2004-001. Under the CASQA assessment model, activity-based reporting includes primarily outcomes that document compliance with permit requirements (Level 1 outcomes), rather than being indicators of the impact of activity implementation.²²⁸ This approach is consistent with guidance from the USEPA, which notes that annual reports should highlight program effectiveness as well as describing activities.²²⁹ This emphasis is also consistent with recommendations from the National Academy of Public Administration in its report to USEPA on Evaluating Environmental Progress, which suggest that reviewing activities data provides limited value when evaluating the effectiveness of programs and resulting environmental conditions.²³⁰

The Order maintains some reporting requirements for certain activity-based outcomes. These are mostly focused on activities that establish or revise municipal processes related to storm water runoff and management. The processes required by the Order are especially important in situations where sustaining water quality improvements may require activities that extend beyond the five-year period of the NPDES permit.

²²⁸ Level 1 outcomes under the CASQA guidance include documentation that required activities have been implemented.

²²⁹ USEPA 2007. *MS4 Program Evaluation Guidance*. USEPA Office of Wastewater Management EPA-833-R-07-003. January 2007 field test version.

²³⁰ National Academy of Public Administration 2001. *Evaluating Environmental Progress: How EPA and the States Can Improve the Quality of Enforcement and Compliance Information* (June 2001). <http://www.napawash.org>

In addition, the Order maintains many activity-based reporting requirements related to enforcement of local requirements, with an emphasis on the results from such activities. This is intended to facilitate review of the contributions that inspection and enforcement activities have made toward meeting the goals of the Order. Reporting of these types of activities is supported by recommendations from the National Academy of Public Administration in its report to the USEPA: *Evaluating Environmental Progress: How EPA and the States Can Improve the Quality of Enforcement and Compliance Information* (June 2001).²³¹ Other activity-based reporting has been reduced to selected items based on consideration of program priorities.

Another source of prioritization for activity-based reporting is the *Storm Water Panel Recommendations to the California State Water Resources Control Board The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities* (June 19, 2006). In particular, the panel highlighted needs to improve the design, maintenance, and inspections of best management practices.

Section K.4 (Interim Reporting Requirements) specifies that the JRMP Annual Reports must be submitted in accordance with the requirements of Order No. R9-2004-001 prior to submittal of the JRMPs required under section K.1a.

²³¹ The National Academy of Public Administration report is available on-line at <http://www.napawash.org>

L. Modification of Programs

The following legal authority applies to section L:

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).

Section L of the Order provides a process for the Copermittees to modify their runoff management programs. This process will be useful so that the Copermittees can continue to refine and improve their programs based on the findings of their annual program effectiveness assessments. The process allows for minor modifications to the Copermittees' programs where the Copermittees can exhibit that the modifications meet or exceed existing legal requirements under the Order. Such a process avoids lengthy and time consuming formal approvals of proposed modifications before the San Diego Water Board, while still ensuring compliance with applicable legal standards and the Order. The process included in the Order is based on a process utilized by the California Regional Water Quality Control Board, San Francisco Bay Region (San Francisco Bay Water Board) in their MS4 permit for Alameda County.²³²

²³² San Francisco Bay Water Board, 2003. Order No. R2-2003-0021. P. 45.

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 178 of 199

M. Principal Permittee Responsibilities

The following legal authority applies to section M:

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 122.26(a)(3)(iii)(C) provides that "A regional authority may be responsible for submitting a permit application."

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(D) provides that "[The Copermitttee must demonstrate that it can control] through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system."

No significant changes were made to this section.

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 179 of 199

N. Receiving Waters and MS4 Discharge Monitoring and Reporting Program

The following legal authority applies to section N:

Broad Legal Authority: CWA sections 402, 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 regulations 40 CFR 122.26(d)(2)(iii) and 122.44 require the Copermitees to conduct a comprehensive monitoring program.

See section T of this Fact Sheet/Technical Report for a discussion of changes to the Receiving Waters Monitoring and Reporting Program.

O. Standard Provisions, Reporting Requirements, And Notifications

The following legal authority applies to section O:

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: Standard provisions, reporting requirements, and notifications are consistent to all NPDES permits and are generally found in Federal NPDES regulation 40 CFR 122.41.

Section O.2 of the Order has been changed to remove the statement that all plans and reports submitted in compliance with the Order are an enforceable part of the Order. This statement has been removed because it is unnecessary. The Order itself contains sufficient detailed requirements to ensure that compliance with discharge prohibitions, receiving water limitations, non-storm water action levels and the narrative standard of MEP for storm water are achieved. Implementation by the Copermittees of programs in compliance with the Order's requirements, prohibitions, and receiving water limitations is the pertinent compliance standard to be used under the Order, as opposed to assessing compliance by reviewing the Copermittees' implementation of their plans alone.

Rather than being substantive components of the Order itself, the Copermittees' management plans are simply descriptions of their runoff management programs required under the Order. These plans serve as procedural correspondence which guides program implementation and aids the Copermittees and San Diego Water Board in tracking implementation of the programs. In this manner, the plans are not functional equivalents of the Order. For these reasons, the Copermittees' runoff management plans need not be an enforceable part of the Order.

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 181 of 199

P. Attachment A – Basin Plan Prohibitions

The following legal authority applies to Attachment A:

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: CWC section 13243 provides that “A regional board, in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.”

CWC section 13263(a) provides that waste discharge requirements prescribed by the San Diego Water Board implement the Basin Plan.

No significant changes were made to this attachment.

Q. Attachment B – Standard Provisions

The following legal authority applies to Attachment B:

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: Standard provisions, reporting requirements, and notifications are consistent to all NPDES permits and are generally found in Federal NPDES regulation 40 CFR 122.41.

Attachment B includes Standard Provisions which have been developed by the State Water Board. These Standard Provisions ensure that NPDES permits are consistent and compatible with USEPA's federal regulations. Some Standard Provisions sections specific to publicly owned sewage treatment works are not included in Attachment B.

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 183 of 199

R. Attachment C – Definitions

The following legal authority applies to Attachment C:

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).

Attachment C contains definitions for terms found in the Order. In addition, definitions for terms previously defined in Order No. R9-2004-001 Attachment C, but which are not found in the current Order, have been deleted.

An additional section which includes acronyms and abbreviations has been added. This is to ensure clarity and prevent confusion of terms. Definitions have been added for new terms used in the permit to provide a clear understanding of their meaning and use.

S. Attachment D – Summary of Submittals

The following legal authority applies to Attachment D:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, 13383, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv) and 122.44(i).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.42(c) requires that “The operator of a large or medium municipal separate storm sewer system or a municipal separate storm sewer system that has been designated by the director under § 122.26(a)(1)(v) of this part must submit an annual report by the anniversary of the date of the issuance of the permit for such system. The report shall include: (1) The status of implementing the components of the storm water management program that are established as permit conditions; (2) Proposed changes to the storm water management program that are established as permit condition. Such proposed changes shall be consistent with § 122.26(d)(2)(iii) of this part; (3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under § 122.26(d)(2)(iv) and (d)(2)(v) of this part; (4) A summary of data, including monitoring data, that is accumulated throughout the reporting year; (5) Annual expenditures and budget for year following each annual report; (6) A summary describing the number and nature of enforcement actions, inspections, and public education programs; (7) Identification of water quality improvements or degradation.”

CWC section 13267 provides that “the regional board may require than any person who has discharged [...] shall furnish, under penalty of perjury, technical or monitoring reports which the regional board requires.”

Attachment D to the Order provides a table summary of scheduled submittals required by the Order. Unscheduled submittals are no longer added to the table, since there is no proper due date for such submittals. A task summary has not been created for the Order, since the previous task summary was found to be redundant, repeating information found in the submittal summary and elsewhere in the Order.

A Jurisdictional Runoff Management Program (JRMP) Annual Report Checklist has been added to the reporting requirements. This addition is to determine and ensure that all requirements of the permit are being met. A Jurisdictional Runoff Management Program (JRMP) Annual Report Checklist has been added to the reporting requirements. This addition is to determine and ensure that all requirements of the permit are being met.

T. Attachment E - Receiving Waters and MS4 Discharge Monitoring and Reporting Program

The following legal authority applies to the Receiving Waters and MS4 Discharge Monitoring and Reporting Program:

Broad Legal Authority: CWA sections 402, 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), 122.44 and 122.45.

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(2)(iii) requires the Copermittees to conduct a comprehensive monitoring program.

Federal NPDES regulation 40 CFR 122.42(c) requires that "The operator of a large or medium municipal separate storm sewer system or a municipal separate storm sewer system that has been designated by the director under § 122.26(a)(1)(v) of this part must submit an annual report by the anniversary of the date of the issuance of the permit for such system. The report shall include: (1) The status of implementing the components of the storm water management program that are established as permit conditions; (2) Proposed changes to the storm water management program that are established as permit condition. Such proposed changes shall be consistent with § 122.26(d)(2)(iii) of this part; (3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under § 122.26(d)(2)(iv) and (d)(2)(v) of this part; (4) A summary of data, including monitoring data, that is accumulated throughout the reporting year; (5) Annual expenditures and budget for year following each annual report; (6) A summary describing the number and nature of enforcement actions, inspections, and public education programs; (7) Identification of water quality improvements or degradation."

CWC section 13267 provides that "the regional board may require than any person who has discharged [...] shall furnish, under penalty of perjury, technical or monitoring reports which the regional board requires."

I. Purpose

According to USEPA, the benefits of sampling data include, but are not limited to:

1. Providing a means for evaluating the environmental risk of storm water discharges by identifying types and amounts of pollutants present;
2. Determining the relative potential for storm water discharges to contribute to water quality impacts or water quality standard violations;
3. Identifying potential sources of pollutants; and

4. Eliminating or controlling identified sources more specifically through permit conditions.²³³

Equally important, monitoring programs are an essential link in the improvement of storm water management efforts. Data collected from monitoring programs can be assessed to determine the effectiveness of management programs and practices, which is vital for the success of the iterative approach used to meet the MEP standard for storm water. When water quality data indicate that water quality standards or objectives are being exceeded, particular pollutants, sources, and drainage areas can be identified and targeted for specific management efforts. When data indicate that a particular BMP or program component is not effective, improved efforts can be selected and implemented.

Considering the benefits described above, the Receiving Waters Monitoring and Reporting Program (MRP) has been designed to determine impacts to receiving water quality and beneficial uses from storm water runoff and to use the results to refine the Copermittees' storm water runoff management programs for the reduction of storm water pollutant loadings to the MEP. For non-storm water discharges, monitoring has been designed to identify and eliminate prohibited illicit discharges and to determine appropriate actions to take in response to dry weather non-storm water action levels. Additionally, the results from dry weather non-storm water monitoring can be used to evaluate exempted non-storm water discharges as a source or conveyance of pollutants. The primary goals of the MRP include:

1. Assess compliance with Order No. R9-2010-0016;
2. Measure and improve the effectiveness of the Copermittees' runoff management programs;
3. Assess the chemical, physical, and biological impacts of receiving waters from MS4 discharges;
4. Characterize storm water runoff discharges;
5. Identify sources of specific pollutants;
6. Prioritize drainage and sub-drainage areas that need management actions;
7. Detect and eliminate illicit discharges and illicit connections to the MS4;
8. Assess the overall health of receiving waters; and
9. Provide information to implement required BMP improvements

Each of the components of the MRP is necessary to meet the objectives listed above. In addition, the MRP has been designed in accordance with the guidance provided by the Southern California Stormwater Monitoring Coalition's Model Monitoring Technical Committee in its August 2004 "Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California." This guidance document was developed in response to Senate Bill 72 (Kuehl), which addressed the standardization of sampling and analysis protocols in municipal storm water monitoring programs. The technical committee which developed the guidance included representatives from

²³³ USEPA, 1992. NPDES Storm Water Sampling Guidance Document. EPA/833-B-92-001.

Southern California Regional Water Boards (including the San Diego Water Board), municipal storm water Copermittees (including Riverside County Flood Control District), Heal the Bay, and the Southern California Coastal Water Research Project.

As its title suggests, the guidance essentially developed a model municipal storm water monitoring program for use in Southern California. The model program is structured around five fundamental management questions, outlined below. The MRP is designed as an iterative step towards ensuring that the Copermittees' monitoring program can fully answer each of the five management questions.

1. Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
2. What is the extent and magnitude of the current or potential receiving water problems?
3. What is the relative storm water runoff contribution to the receiving water problem(s)?
4. What are the sources of storm water runoff that contribute to receiving water problem(s)?
5. Are conditions in receiving waters getting better or worse?

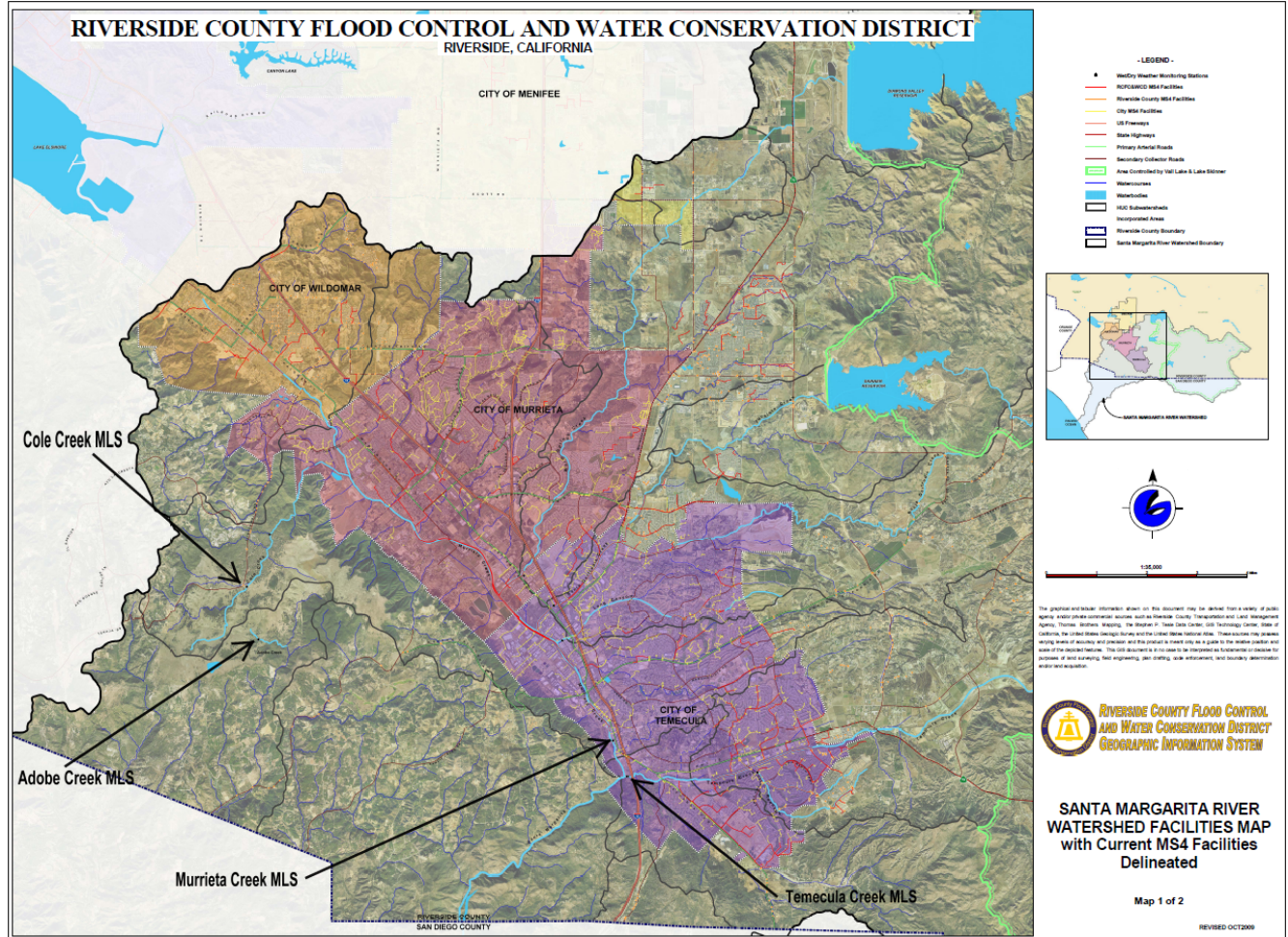
The three MS4 NPDES permits within San Diego Water Board jurisdiction each have very similar core monitoring requirements that include receiving water monitoring, effluent monitoring, and special studies (see Finding E.12 and Discussion). The justifications for each component of the monitoring program are discussed below.

II. Monitoring Program

The Monitoring Program has been organized into distinct sections and includes receiving water monitoring, MS4 effluent monitoring, a monitoring program in high priority inland aquatic habitat, and special studies. Each monitoring program is expected to answer specific questions and achieve goals outlined in section I. Some of these questions require the linkage of both receiving water monitoring and MS4 discharge monitoring that is required in the Order. As such, the Monitoring Program has been written to allow the Copermittees to utilize the same data and/or sampling effort where monitoring requirements overlap. For example, the Copermittees may elect to develop a Trash Special Study where the sampling is done at the same location and time as stream assessment monitoring. The Copermittees may evaluate the goals and questions of the Monitoring Program when evaluating how required monitoring programs may overlap.

Section II.A.1 (Mass Loading Station Monitoring) of the MRP requires mass loading and toxicity monitoring at monitoring stations located at the bottom of the Riverside County portion of the Santa Margarita watershed (see figure below).

Locations of Mass Loading Stations (MLS) under Order No. R9-2004-0001



The intent of current mass loading monitoring as conducted by the Copermittees under Order No. R9-2004-001 is to use water chemistry data from storm events and dry weather flows to calculate pollutant loads and to assess water quality with respect to applicable acute and chronic toxicity criteria from the California Toxics Rule (CTR) and bioassessment as part of the triad monitoring approach.²³⁴ The mass loading monitoring that is required by the Order will provide data representing event mean concentrations of pollutants, total pollutant loadings, and toxicity conditions from specific drainage areas. Mass loading monitoring stations are recommended by the Model Monitoring Technical Committee in order to answer management questions 1, 2, and 5.²³⁵ The stations are also expected to contribute towards meeting MRP goals

²³⁴ Riverside County Copermittees. 2009. Report of Waste Discharge, section 6.4 .

²³⁵ Model Monitoring Technical Committee, 2004. Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California. Chapter 5.

1, 2, 3, 4, 6, and 8. The locations of the mass loading monitoring stations are not changed from Order No. R9-2004-001. The MRP, however, retains flexibility to allow the Copermittees to propose changing the location of a mass loading station. The Copermittees may also propose additional mass loading stations should they determine more are needed. The Copermittees will identify a permanent mass loading reference station for the permit term.

Some revisions to the required list of constituents to be monitored at mass loading stations have been made. The changes are made to be compatible with the federal NPDES regulations and in response to data collected during the current permit term. Audits of the Copermittees' monitoring program and reviews of annual reports during the last permit term have found consistent shortcomings in the Copermittees' monitoring programs. As a result, some changes have been made to the monitoring requirements. The changes include:

1. All events must now include: Biological Oxygen Demand, 5-day Chemical Oxygen Demand, Total Organic Carbon, Dissolved Organic Carbon. These are specifically required by 40 CFR 122.26(d)(2)(iii)(A) and (B), but were omitted from collection and reporting required by Order No. R9-2004-001.
2. Carbamate and Pyrethroid pesticides must be monitored. Pyrethroid pesticides were identified from TIEs conducted in response to toxicity observed during sampling as part of the triad approach at Temecula and Murrieta Creek. Long term monitoring of pesticide presence is critical to evaluate Copermittees BMP efforts and program effectiveness. Carbamate pesticides are utilized in residential, agricultural and commercial applications, and have been shown to have negative direct and indirect impacts on aquatic invertebrates and vertebrates, as well as associated riparian species.²³⁶ In addition, the National Marine Fisheries Service (NMFS) issued a Biological Opinion in 2009 that concluded pesticide products containing carbaryl and carbofuran are likely to jeopardize 22 listed salmonids, including Southern California Steelhead.²³⁷
3. Impaired water body pollutants. Specific pollutants have been added in response to the U.S. Environmental Protection Agency approval of California's 2004-2006 and the San Diego Water Board approval of the 2008 303(d) List.

²³⁶ See:

Boone and James. 2003. Interactions of an insecticide, herbicide, and natural stressors in amphibian community mesocosms. *Ecological Applications*: 13(3) pp. 829-841.

Hanazato. 2001. Pesticide effects on freshwater zooplankton: an ecological perspective. *Environmental Pollution*: 112 pp. 1-10.

USGS. 1999. Field Manual of Wildlife Diseases: General Field Procedures and Diseases of Birds. Chapter 39.

California Department of Pesticide Regulation. 2010. Urban Pesticide Monitoring in Northern and Southern California. <http://www.cdpr.ca.gov/docs/emon/surfwtr/presentations.htm>

²³⁷ NMFS. 2009. Endangered Species Act Section 7 Consultation Biological Opinion: Environmental Protection Agency Registration of Pesticides Containing Carbaryl, Carbofuran, and Methomyl.

4. A requirement to collect a grab sample for total petroleum hydrocarbons whenever a sheen is observed has been added based upon results from IC/ID programs in existing southern California NPDES MS4 permits.
5. The required organisms for toxicity testing have changed from the previous order to be consistent with USEPA guidance.²³⁸ *Ceriodaphnia dubia* (water flea) has been replaced with *Pimephales promelas* (fathead minnow) to provide at least three test species from different phyla. *Hyalella azteca* has been retained as a test organism due to sensitivity to pyrethroid pesticides.
6. A constituent-specific table has been added to provide clarity to the list of pollutants that are required to be monitored as part of the triad approach.
7. More prescriptive reporting requirements have been added in the event the Copermittees fail to monitor the required number of mass loading events.

Section II.A.2 (Stream Assessment Monitoring) of the MRP requires the Copermittees to conduct bioassessment monitoring using a multiple lines of evidence approach which includes collection of benthic macroinvertebrates and algae, a full physical habitat assessment, water chemistry sampling, and toxicity testing. Bioassessment monitoring is a cost-effective tool that measures the effects of water quality over time.²³⁹ It is an important indicator of stream health and impacts from storm water and non-storm water runoff. It can detect impacts that chemical and toxicity monitoring alone cannot. USEPA encourages permitting authorities to consider requiring biological monitoring methods in conjunction with chemical and toxicity testing to fully characterize the nature and extent of impacts from runoff.²⁴⁰ Therefore, the San Diego Water Board commonly requires bioassessment monitoring in MS4 and other types of discharge permits.

Bioassessment is the direct measurement of the biological, chemical, and physical condition, and attainment of beneficial uses of receiving waters (typically using benthic macroinvertebrates, periphyton, and fish). Bioassessment monitoring integrates the effects of both water chemistry (including toxicity) and physical habitat impacts (e.g., sedimentation or erosion) of various discharges on the biological community native to the receiving waters. Moreover, bioassessment is a direct measurement of the impact of cumulative, sub-lethal doses of pollutants that may be below reasonable water chemistry detection limits, but that still have biological affects.

Because bioassessment focuses on communities of living organisms as integrators of cumulative impacts resulting from water quality or habitat degradation, it defines the ecological risks resulting from storm water and non-storm water MS4 runoff.

²³⁸ USEPA, 1991. Technical Support Document for Water Quality Based Toxics Control. EPA 505-2-90-001.

²³⁹ California Department of Fish and Game, 2002. California Regional Water Quality Control Board, San Diego Region 2002 Biological Assessment Report: Results of May 2001 Reference Site Study and Preliminary Index of Biotic Integrity.

²⁴⁰ USEPA, 1999. Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers. EPA 841-B-99-002. P. 2-5.

Bioassessment not only identifies that an impact has occurred, but also measures the effect of the impact and tracks recovery when control or restoration measures have been taken. These features make bioassessment a powerful tool to assess compliance, evaluate the effectiveness of BMPs, and to track both short and long-term trends (MRP goals 1, 2, 3, and 8). Bioassessment can also help answer management questions 1, 2, and 5.

The Order also identifies the most current established protocol to be used in identifying bioassessment reference stations. The protocol referenced in the Order is specified because it provides a qualitative and repeatable method for identifying reference sites. Moreover, the protocol is well established, since it has been peer reviewed and published.

The Order includes four significant modifications to the bioassessment monitoring required under Order No. R9-2004-001. These changes include:

1. Bioassessment monitoring must be consistent with the State Water Board's Surface Water Ambient Monitoring Program (SWAMP) Standard Operating Procedures (SOP) as amended.²⁴¹
2. Bioassessment monitoring is to include an assessment of periphyton (algae).²⁴² Advantages of bioassessment using periphyton include: (1) they have rapid reproduction rates and very short life cycles, making them valuable indicators of short-term impacts; (2) as primary producers, they are most directly affected by physical and chemical factors; (3) sampling is easy and inexpensive; and (4) algal assemblages are sensitive to some pollutants which may not visibly affect other aquatic assemblages.²⁴³ Future bioassessment must use algal IBI scores, when developed.
3. The number of bioassessment stations has been increased from three to six. The Copermittees currently conduct bioassessment monitoring at one reference station and at the two mass loading stations at Temecula and Murrieta Creek. The increase in required sampling is needed to evaluate more localized impacts higher in the Santa Margarita Hydrologic Unit (HU) in conjunction with SAL and NAL monitoring, as well as to evaluate any impacts that occur from hydromodification. The additional required reference station will aid in detecting any differences in bioassessment scores over time that may be independent of MS4 discharges.
4. The bioassessment section title has been changed to Stream Assessment Monitoring. This was done to prevent confusion by the Copermittees in

²⁴¹ SWAMP February 2007 (amended September 2008). Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California

²⁴² SWAMP June 2009. Standard Operating Procedures for Collecting Stream Algae Samples and Associated Physical Habitat and Chemical Data for Ambient Bioassessments in California.

²⁴³ USEPA, 1999. Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers. EPA 841-B-99-002. P. 3-3.

understanding sampling differences between mass loading stations and bioassessment sites. Under Order No. 2004-0001 all bioassessment sites were co-located with mass loading stations. Thus, the collection of water chemistry and toxicity data was done simultaneously for mass loading and bioassessment purposes, which prevented duplicative water chemistry and toxicity testing. For new "Stream Assessment Monitoring" sites not located at mass loading stations, the nomenclature for monitoring has been changed to prevent possible misinterpretation of the term "bioassessment" to mean only the collection of benthic macroinvertebrates and physical habitat data.

Section II.A.3 (Follow-up Analysis and Actions) of the MRP requires the Copermittees to use the results of the receiving water monitoring to determine if impacts from MS4 discharges are occurring and when follow-up actions are necessary. The triad approach allows a wide range of measurements to be combined to more efficiently identify pollutants, their sources, and appropriate follow-up actions. Results from the three types of monitoring must be assessed to evaluate the extent and causes of pollution in receiving waters and to prioritize management actions to eliminate or reduce the sources. The framework provided is to be used to determine conclusions from the data and appropriate follow-up actions. The framework is proposed by the Copermittees and derived from the Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California.²⁴⁴ These follow-up actions are expected to primarily help answer management questions 2 and 4, as well as address MRP goals 2, 4, 5, 6 and 7.

When, based on the framework in Table 3 of the MRP, data indicates the presence of toxic pollutants in runoff, the Copermittees are required to conduct a Toxicity Identification Evaluation (TIE). A TIE is a set of procedures used to identify the specific chemical(s) responsible for toxicity to aquatic organisms. When discharges are toxic to a test organism, a TIE must be conducted to confirm potential constituents of concern and rule out others, therefore allowing Copermittees to determine and prioritize appropriate management actions. If a sample is toxic to more than one species, it is necessary to determine the toxicant(s) affecting each species. If the type and source of pollutants can be identified based on the data alone and an analysis of potential sources in the drainage area, a TIE is not necessary.

When a TIE identifies a pollutant associated with MS4 discharge as a cause of toxicity, it is then necessary to conduct follow-up actions to identify the causative agents of toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. Follow-up actions should analyze all potential source(s) causing toxicity, potential BMPs to eliminate or reduce the pollutants causing toxicity, and suggested monitoring to demonstrate that toxicity has been removed.

²⁴⁴ Model Monitoring Technical Committee, 2004. Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California. P. 5-61.

Section II.A.4 (Regional Monitoring Programs) of the MRP identifies that the San Diego Water Board recognizes the importance of regional monitoring efforts to answer monitoring questions and/or address problems that may not be specific to only the Santa Margarita hydrologic unit (see Finding E.12 and Discussion). Additionally, the Copermittees' jurisdiction does not encompass the entire Santa Margarita hydrologic unit, as portions of the hydrologic unit include, but are not limited to, San Diego County, tribal lands, the Cleveland National Forest, and Marine Corps Base at Camp Pendleton.

Section II.B (Wet Weather MS4 Discharge Monitoring) of the MRP requires the Copermittees to develop and implement a program, in accordance with 40 CFR 122.26(d)(2)(iii), to monitor and characterize pollutants in discharges of storm water effluent from major MS4 outfalls. Currently the Copermittees do not monitor the discharge of storm water from the MS4 outfalls. As a result, a substantial amount of information regarding the quality of MS4 effluent is unknown, and in-stream stations monitored under R9-2004-001 have not accurately characterized MS4 effluent data during the permit term.²⁴⁵ The collection of wet-weather MS4 effluent data will enable the Copermittees to assess the effectiveness of existing storm water BMP measures, estimate cumulative annual pollutant loads from MS4 storm water discharges, and estimate seasonal pollutant loads from individual major outfalls. This data can be used to more effectively target storm water management program efforts. The MRP also requires compliance with section D of the Order for Storm Water Action Levels.

The monitoring of outfalls is expected to be used to identify storm drains that are discharging pollutants in concentrations that may pose a threat to receiving waters. Source investigations are expected to be conducted as a response to the data. The Copermittees are required to monitor for those pollutants in 40CFR 122.26(d)(2)(iii)(B); for 303(d) listed pollutants for the Santa Margarita Hydrologic Unit; and for pollutants with Storm Water Action Levels.

The MRP provides the Copermittees great flexibility in assigning stations and sampling frequency for wet-weather monitoring. Copermittees are to propose the number and frequency of monitoring stations, thus proposing the overall cost of their program. The San Diego Water Board will review the proposed program to ensure it will comply with Federal regulations and section D of the Order for Storm Water Action Levels.

The monitoring requirements also include a requirement to measure receiving water hardness when comparing storm water MS4 discharge data to Storm Water Action Levels for priority pollutants (e.g. metals). The effect of these constituents upon receiving waters will vary depending upon the hardness of receiving waters.

Section II.B.2 (Source Identification Monitoring) requires the Copermittees to develop and implement a program to identify sources of discharges of pollutants causing the high priority water quality problems within each hydrologic subarea. The current

²⁴⁵ Riverside County Copermittees. 2009. Report of Waste Discharge, section 5.1.

source identification monitoring program conducted by the Copermittees has not been demonstrated to be effective due to the continued receiving water monitoring that documents persistent exceedances of water quality objectives for 303(d) listed pollutants, as well as the listing of new water bodies and pollutants (see Finding C.7). Furthermore, all monitoring conducted under Order R9-2004-001 focused on receiving water conditions rather than MS4 effluent discharges. Outside of required toxicity identification and reduction evaluations, little to no source identification was conducted for observed exceedances of water quality standards in receiving waters.

Identification of sources causing high priority water quality problems is a central purpose of storm water runoff management programs. Monitoring which enables the Copermittees to identify sources of water quality problems aids the Copermittees in focusing their management efforts, improving their programs and choosing additional and/or better BMPs. In turn, the Copermittees' programs can abate identified sources, which will improve the quality of storm water runoff discharges and receiving waters. This monitoring is needed to address management questions 3 and 4, in addition to ensuring that pollutants in storm water discharges from the MS4 are reduced to the MEP. Moreover, in its review of the San Diego County Copermittees' monitoring proposal, Tetra Tech, Inc. finds that "after some years of assessment monitoring, it is time to look more systematically at determining the relative urban contributions and the sources of urban runoff that contribute to identified receiving water problems."²⁴⁶

Section II.C (Non-Storm Water Dry Weather Action Levels) of the MRP describes the monitoring to be conducted by the Copermittees to determine compliance with dry weather, non-storm water action levels.

The section for Dry Weather Non-Storm Water Action Level Monitoring has taken the place of Illicit Discharge Detection and Elimination Monitoring under the previous Order. This change is required to assess compliance with action levels for non-storm water discharges from the MS4 into receiving waters while the Copermittees simultaneously conduct Illicit Discharge Detection and Elimination activities. The prior Order did not require the testing of non-storm water MS4 effluent prior to discharge into receiving waters, and thus Illicit Discharge Detection and Elimination Monitoring was conducted in receiving waters that were technically considered part of the MS4 but did not necessarily contain solely MS4 effluent. Discussions between the San Diego Water Board and Copermittees identified this shortcoming, which is reflected in the Copermittees Annual Reports (2007-08 and 2008-09), and the Copermittees have requested the point of monitoring for non-storm water be changed to sample MS4 effluent.²⁴⁷ The required sampling frequency has great flexibility and allows Copermittees to sample a representative number of discharge points while the sampling methodology continues to be grab sampling. Additionally, the selection of representative outfalls or other identified stations has been clarified to ensure that those selected are consistent with federal requirements under 40 CFR 122.26(d) and section C of the Order.

²⁴⁶ Tetra Tech Inc., 2006. Review of San Diego County MS4 Monitoring Program.

²⁴⁷ Riverside County Copermittees ROWD, January 2009. Section 7.8.2.

Section II.C.2 (Source Identification Monitoring) requires the Copermittees to develop and implement a program to identify the sources of pollutants in non-storm water discharges. The section provides clarification that the program must utilize action levels pursuant to section C of the Order as a source identification response criteria. The source identification monitoring program is required under sections C, F.4.d, and F.4.e of the Order and to comply with 40 CFR 122.26(d)(2)(iv)(B), which requires the Copermittees have a program to detect and remove illicit discharges into the MS4.

Section II.D (High Priority Inland Aquatic Habitat) of the MRP describes required monitoring to be done in order to assess if MS4 storm water and/or non-storm water discharges are affecting high priority aquatic and/or riparian species. The existing monitoring program does almost all monitoring at or near mass loading stations, which are located at and below the confluence of multiple major hydrologic subareas. While this approach may estimate cumulative loadings and impacts from entire hydrologic areas, it provides little information regarding localized impacts to receiving waters subject to MS4 discharges, especially for high priority habitats. This approach is also recommended by the Southern California Stormwater Monitoring Coalition's Model Monitoring Technical Committee as an integral part of a storm water monitoring program. The Model Monitoring Technical Committee, which includes a member from RCFCD, recommends the use of "site-specific stations focused on the status of high-priority inland habitats of concern, with monitoring based primarily on the Triad approach for dry weather sampling and on chemistry and toxicity for wet weather."²⁴⁸

The monitoring of MS4 discharges into high-priority inland habitats is of special importance to the species which rely on the habitat subject to the discharge. The Santa Margarita River, and its tributaries, has been designated with BIOL, WARM, COLD, RARE and WILD beneficial uses, in part due to the presence of threatened and endangered species.²⁴⁹ Portions of the Santa Margarita HU also include areas designated as critical habitat by state and Federal agencies. Federal and State threatened and endangered species are particularly susceptible to negative direct and indirect effects of MS4 discharges because the habitat available to them has already been reduced, restricted, and/or degraded, and their populations have already been reduced to low levels.²⁵⁰ Therefore, short-term or chronic degradation of habitat or exposure to pollutants caused by MS4 discharges results in a proportionally high level of negative impact to already impacted beneficial uses. Threatened or endangered species with reduced habitat availability may be restricted from avoiding pollutants associated with MS4 discharges,²⁵¹ and any reproductive impacts from pollutants would likely have significant negative effects on already low population sizes.

²⁴⁸ Model Monitoring Technical Committee, 2004. Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California.

²⁴⁹ See Federal Register 50 CFR 71.11 and the California Code of Regulations, Title 14 Section 670.5.

²⁵⁰ Carroll, R., Augspurger, C., Dobson, A., Franklin, J., Orians, G., Reid, W., Tracy, R., Wilcove, D. and J. Wilson. 1996. Strengthening the use of science in achieving the goals of the Endangered Species Act: An Assessment by the Ecological Society of America. *Ecological Applications*. 6(1) pp. 1-11.

²⁵¹ For example, see National Marine Fisheries Service Draft Southern Steelhead Recovery Plan, July 2009.

Information regarding the extent of environmentally-sensitive habitats is available from sources familiar to the Copermittees.²⁵² Examples include the Western Riverside Multiple Species Habitat Conservation Plan, Santa Margarita HU assessments conducted by the U.S. Army Corps of Engineers, and California Department of Fish and Game Ecological Reserves. Therefore, a relatively small level of effort will be required to collect information to determine high priority inland aquatic habitats. In addition, the Copermittees already are required to have updated inventories of inland MS4 outfall locations. As a result, a monitoring plan can be developed within 36 months to address the new requirement.

Section II.E.2 (Sediment Toxicity Study) includes a requirement that the Copermittees conduct a sediment toxicity special study. This study has been added to the Monitoring and Reporting requirements to assess the quality of stream sediments and possible contamination due to runoff from the MS4. Toxicity tests focusing on aqueous toxicity may not account for the full toxicity of receiving waters if constituents, such as heavy metals or pesticides, are bound to sediments. Southern California studies have shown that stream sediments can exhibit significant levels of toxic metals and pesticides, including pyrethroids.^{253,254} Additionally, the Copermittees have identified the presence of aqueous toxicity at both mass loading stations due to pyrethroid pesticides, but their presence in sediments is unknown.

Section II.E.3 (Trash and Litter Investigation) includes a requirement that the Copermittees conduct a Trash and Litter Investigation (see Finding C.8 and Discussion). The objective of the study is to evaluate the quantity, type, and source(s) of trash and litter in receiving waters (see Finding E.12 and Discussion regarding regional efforts). Although trash can impair beneficial uses, the amount and type of trash discharged into receiving waters from the Copermittee(s) MS4 is unknown. Thus, the Copermittees have largely been unable to assess the effectiveness of their BMPs that target trash as a pollutant. The special study requires the Copermittees to utilize previously developed protocols to determine the source of trash and litter in receiving waters, assess BMP effectiveness, and implement additional BMPs if needed according to the requirements of the Order. Qualitative and quantitative protocols for trash assessment have already been developed for San Diego County and the San Francisco Bay Region. These protocols are required to be used in the development of the special study, are expected to reduce Copermittee costs, and promote regional consistency in trash and litter assessments.

Section II.E.4 (Agricultural, Federal and Tribal Input Study) includes a requirement for the Copermittees to draft and subsequently conduct a special study to determine the water quality of storm water flows which are entering their MS4 from agricultural,

²⁵² See Riverside County Copermittees ROWD, January 2009. Section 4.3.3.

²⁵³ Holmes, R.W., Anderson, B.S., Phillips, B.M., Hunt, J.W., Crane, D.B., Mekebri, A. and V. Connor. 2008. Statewide Investigation of the Role of Pyrethroid Pesticides in Sediment Toxicity in California's Urban Waterways. *Environmental Science Technology* 42: 7003-7009.

²⁵⁴ Crane, D.B. and C. Younghans-Haug. 1992. Oxadiazon residue concentrations in sediment, fish, and shellfish from a combined residential/agricultural area in Southern California. *Bulletin of Environmental Contamination and Toxicology*. Volume 48, no. 4.

federal and tribal areas. The objective of the study is to determine the type, quantity and estimated loading of pollutants in these discharges. In the ROWD, the Copermittees specifically state their concern regarding the quality of storm water which is discharged into their MS4 from such areas, and state that these discharges may affect overall water quality, primarily in the Murrieta and Temecula Creek watersheds.²⁵⁵ However, no data, information, or analyses were presented or identified on the level of pollutants in such flows into their MS4. The special study has been designed with sampling frequency and parameter requirements that lend flexibility to the Copermittees. The minimum requirements are limited to grab samples for pollutants expected to be present in storm water discharges and at a number of representative sites chosen by the Copermittees. The special study requires testing to be source specific (e.g. only sampling discharge into from one of the three sources) and does not allow for sampling to be done on co-mingled flows within the MS4. Additionally, the Copermittees may elect to conduct composite sampling, toxicity testing, more targeted sites, or a combination thereof.

Section II.E.5 (MS4 and Receiving Water Maintenance Study) includes a requirement that the Copermittees investigate impacts to Beneficial Uses from routine removal of vegetation from portions of the MS4 that are also receiving waters (see Finding D.3.c and Discussion). The objective of the study is to determine if there are short-term or long-term in-stream water quality impacts from maintenance activities and to assess if the activities exacerbate the impairment of receiving waters 303(d) listed as impaired wholly or partially from MS4 discharges. Receiving waters within the Copermittees jurisdiction have been routinely cleared of vegetation by the Copermittees as part of their MS4 maintenance programs without mitigation efforts. The in-stream modification of vegetation may result in changes in water quality and Beneficial Uses from changes in nutrient cycling, the storage of organic matter, infiltration, flow attenuation, temperature and erosion potential.^{256,257,258} The relative contribution, if any, of maintenance activities to CWA 303(d) water quality impairments is unknown. The program is also expected to work in conjunction with other permit requirements of the Order. For example, the Copermittees may choose to utilize study results when implementing the HMP, LID, and retrofitting programs.

Section II.E.6 (Intermittent and Ephemeral Stream Perennial Conversion Study) includes a study to assess specifically exempted non-storm water discharges²⁵⁹ into surface waters and discharges into MS4s covered under a separate NPDES permit in order to determine if the exempted discharges and/or separate NPDES discharges to the MS4 are causing or contributing to a condition of pollution, contamination or nuisance. For ephemeral and intermittent inland surface waters, modification of flows

²⁵⁵ Riverside County Copermittees ROWD, January 2009. Sections 3.2 and 3.3.

²⁵⁶ Fischenich, J.C. and R.R. Copeland. 2001. Environmental Considerations for Vegetation in Flood Control Channels. US Army Corps of Engineers.

²⁵⁷ Shade et al. 2005. Hydrologic exchange and N uptake by riparian vegetation in an arid-land stream. *Journal of North American Benthological Society*. 24(1):19–28.

²⁵⁸ Warner, R.E. and K.M. Hendrix. 1984. California Riparian Systems: Ecology, Conservation, and Productive Management. pp. 160-189. University of California Press.

²⁵⁹ See Finding C.15 of the Order for discussion of exempted non-storm water discharges.

may impact beneficial uses through modification of in-stream ecology including, but not limited to, sediment transport, biogeochemical functioning, water temperature, non-native species presence and exclusion of native species.^{260,261} The objective of the study is to determine if the alteration of natural in-stream hydrologic regimes from intermittent or ephemeral to perennial due to exempted non-storm water discharges has modified the beneficial uses of the receiving water. The evaluation includes both qualitative and quantitative measurements of parameters which will help the Copermittees determine if exempted discharges and/or separate NPDES discharges into the MS4 are causing a condition of pollution, contamination, or nuisance. Such a determination would potentially require an action to be taken by the Copermittee(s) (i.e. prohibition of an exempted discharge), permit modification for a separate NPDES permit, and/or an action by the San Diego Water Board.

Section II.F (Monitoring Provisions) of the MRP includes monitoring provisions which are standard requirements for all municipal storm water permits.

III. Reporting Program

Section III of the MRP discusses submittal of the Planned Monitoring Program, the Receiving Waters and MS4 Discharge Monitoring Annual Reports, and Interim Reporting Requirements. For the purposes of Receiving Waters and MS4 Discharge Monitoring and Reporting Program, required reviews and approvals by the San Diego Water Board of draft monitoring plans, proposals or protocols shall be conducted by the San Diego Water Board Executive Officer.

Section III.C (Table of Reporting Requirements) has been added to the MRP to provide a quick reference for all required reporting dates found in the MRP

²⁶⁰ Naiman, R.J., Bunn, S.E., Nilsson, C., Petts, G.E., Pinay, G., and L.C. Thompson. 2002. Legitimizing Fluvial Ecosystems as Users of Water: An Overview. *Environmental Management*: 30(4) pp. 455-467.

²⁶¹ Marchetti, M.P., Light, T., Moyle, P.B. and J.H. Viers. 2004. Fish Invasions in California Watersheds: Testing Hypotheses Using Landscape Patterns. *Ecological Applications*. 14(5) pp. 1507-1525.

Fact Sheet/Technical Report for
Order No. R9-2010-0016

November 10, 2010
Page 199 of 199

U. Attachment F - Source Data

Attachment F contains data utilized for the development of Storm Water Action Levels and Non-storm Water Action Levels.