

**STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING SESSION – CENTRAL COAST REGIONAL BOARD
JULY 2, 2014**

ITEM 7

SUBJECT

CONSIDERATION OF A PROPOSED RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE CENTRAL COASTAL BASIN TO ADOPT TOTAL MAXIMUM DAILY LOADS FOR TOXICITY AND PESTICIDES IN THE SANTA MARIA RIVER WATERSHED (RESOLUTION NO. R3-2014-0009).

DISCUSSION

On January 30, 2014, the Central Coast Regional Water Quality Control Board (Central Coast Water Board) adopted [Resolution No. R3-2014-0009](#) amending the Water Quality Control Plan for the Central Coastal Basin (Basin Plan) to establish total maximum daily loads (TMDLs) for toxicity and pesticides in the Santa Maria River watershed. The TMDLs address toxicity impairments to aquatic invertebrates in water and sediment and pesticide impairments from three classes of pesticides: organophosphate, pyrethroid and organochlorine.

The Santa Maria River watershed is located in northern Santa Barbara and southern San Luis Obispo Counties. It is an approximately 1.2 million-acre watershed that is comprised of three large hydrologic areas (HA): the Cuyama Valley, Sisquoc, and Guadalupe subwatersheds. The main focus of the TMDL is the Guadalupe HA, also referred to as the Santa Maria Valley. It is the lower subwatershed and is transected by the Santa Maria River, which flows east to west from the confluence of the Cuyama and Sisquoc Rivers to the Pacific Ocean. The toxicity and pesticide impaired waters are located in the Santa Maria valley and include: Blosser Channel, Bradley Canyon Creek, Bradley Channel, Greene Valley Creek, Little Oso Flaco Creek, Main Street Canal, Orcutt Creek, Oso Flaco Lake, and the Santa Maria River. The Santa Maria Valley is dominated by irrigated agricultural and urban land uses. It is a coastal valley with productive alluvial soils that support the intensive production of cool season vegetables such as lettuce and cole crops (broccoli, cabbages and cauliflower), as well as strawberries.

The TMDLs will result in meeting the Basin Plan narrative water quality objectives for toxicity and pesticides in the Santa Maria River watershed. Impairments were identified on the 2008-2010 Clean Water Act section 303(d) list for toxicity and the pesticides chlorpyrifos, diazinon, DDT, dieldrin, endrin, and toxaphene. Additional pesticide impairments, including impairments from pyrethroid pesticides, were identified during the TMDL development and are included in the TMDL. Adoption of the TMDLs includes establishment of pollutant numeric targets for surface waters and numeric allocations for toxicity and pesticides in the watershed.

The Basin Plan contains general water quality objectives for all inland surface waters, enclosed bays, and estuaries. The Basin Plan does not have numeric water quality objectives for individual pesticides, relying instead on narrative objectives. The narrative water quality objective for toxicity states, in part:

“All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or aquatic life.”

The narrative water quality objective for pesticides states, in part:

“No individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses.”

For the TMDLs, staff developed numeric targets, which are interpretations of these two narrative water quality objectives and are derived from several sources. For organophosphate pesticides and associated toxicity, staff selected criteria developed by the California Department of Fish and Wildlife (CDFW), formerly California Department of Fish and Game (CDFG), and University of California Davis (UC Davis) as numeric targets. CDFW published freshwater water quality criteria for diazinon and chlorpyrifos using USEPA methodologies. UC Davis developed freshwater invertebrate toxicity criteria for malathion through a contract with The Central Valley Regional Water Quality Control Board (CVRWQCB). UC Davis also developed the water column criteria for pyrethroid pesticides that are the basis of the water column numeric targets for the pyrethroids addressed in the TMDL. Along with specific pesticide criteria as numeric targets, the TMDL includes numeric targets for aquatic toxicity based on standard toxicity tests to invertebrates and analysis using the Test of Significant Toxicity t-test approach. For organochlorine pesticides, staff developed water, sediment, and fish tissue numeric targets.

The sources of toxicity and pesticide impairments were determined for the TMDLs. Several studies in the watershed indicate that the water toxicity and the sediment toxicity are associated with currently applied organophosphate and pyrethroid pesticides. The organochlorine pesticides included in the TMDL are no longer applied in the watershed but are persistent in the environment and sediment is a source.

Surface waters in the Santa Maria watershed are impaired by the organophosphate pesticides chlorpyrifos, diazinon, and malathion. Applications of these pesticides to agricultural crops results in a source of impairments in the watershed. Residential uses are not a source since non-agricultural uses of chlorpyrifos and diazinon were banned several years ago by U.S. EPA. Malathion has non-agricultural uses but the malathion impairments are in the Oso Flaco subwatershed, which has extensive agricultural land use, minimal non-agricultural areas, and significant applications of malathion to crops in proximity to monitoring sites.

Staff evaluated the specific types of pesticide applications associated with water quality impairments by querying agricultural pesticide use reports obtained from the California Department of Pesticide Regulations. For chlorpyrifos, the specific use causing impairments is identified as pre-plant granular applications to cole crops (broccoli, cauliflower, cabbage). Diazinon was primarily applied on lettuce and cole crops and malathion was applied on a wide range of crops (broccoli, celery, lettuce, and strawberries).

Agricultural and urban pesticide uses are identified as sources of the pyrethroid pollution in the watershed. Pyrethroids are commonly applied urban pesticides and the highest levels of pollution are in drainages with urban stormwater runoff. Pyrethroids are used by both residential consumers and for professional commercial and residential pest control applicators. Pyrethroids are commonly applied to agricultural crops such as lettuces, strawberries, celery, broccoli and cauliflower.

Surface waters were monitored throughout the Santa Maria Valley floor for DDTs, which were broadly detected. The detections were primarily DDT breakdown products DDD and DDE. Sediments from irrigated agricultural and urban lands are potential sources of DDTs in surface waters. Additionally, contaminated stream and channel sediments are stores of DDT and are sources of DDT to downstream fisheries such as Oso Flaco Lake, the Santa Maria Estuary, and the coastal confluences.

Impaired waters in the Santa Maria river watershed are assigned TMDLs for specific pesticides along with TMDLs for water and sediment toxicity to invertebrates. The TMDLs for organophosphate pesticides are based on water concentration criteria for chlorpyrifos, diazinon and malathion. In addition there is an additive toxicity TMDL for chlorpyrifos and diazinon. The pyrethroid TMDL is a pyrethroid pesticide additive toxicity equation that is based on concentrations of pyrethroids in sediment to establish sediment toxicity levels. The aquatic toxicity TMDLs are equal to the previously noted sediment and water toxicity targets.

The receiving waters, Oso Flaco Lake, Oso Flaco Creek, Orcutt Creek and Santa Maria River are impaired for organochlorine pesticides and have fish tissue TMDLs for DDTs, chlordane, dieldrin and toxaphene. Impaired surface waters throughout the watershed are also assigned TMDLs for concentrations of organochlorine pesticides in sediment.

The responsible parties identified as sources of pesticide discharge to impaired surface waters receive TMDL allocations. Urban stormwater sources such as the City of Santa Maria and the County of Santa Barbara are assigned allocations for pyrethroid pesticides, aquatic toxicity and organochlorine pesticides. The owners and operators of irrigated agricultural lands are also assigned allocations for pyrethroid pesticides, aquatic toxicity and organochlorine pesticides, as well as allocations for organophosphate pesticides. Agencies that manage roadside drainages and flood control channels and manage channel erosion and sedimentation are assigned allocations for organochlorine pesticides.

The TMDL outlines an implementation plan to achieve the TMDLs for currently applied pesticides utilizing an interagency approach between the Department of Pesticide Regulation (DPR) and the Water Boards to address impairments. The approach is described in the California Pesticide Management Plan for Water Quality (California Pesticide Plan), which is an implementation plan of the Management Agency Agreement (MAA) between DPR and the Water Boards that was signed in 1997. The agricultural commissioners of Santa Barbara and San Luis Obispo counties are also responsible for implementing the California Pesticide Plan.

The DPR, the county agricultural commissioners, and U.S. EPA are taking regulatory steps to address pesticide impairments. In accordance with the MAA, DPR has approved urban pesticide regulations to address pyrethroid pesticide water quality pollution. Also as part of the MAA, the Water Board, DPR, and the commissioners are coordinating on the development of county chlorpyrifos use permits and are planning a chlorpyrifos pilot program in Santa Barbara County. U.S. EPA has recently implemented label restrictions and requirements on agricultural uses of diazinon and pyrethroids to address water quality problems.

Owners and operators of irrigated operations in the Santa Maria River watershed implement TMDL allocations and monitoring under the Conditional Waiver of Waste Discharge Requirements for Irrigated Lands and the associated Monitoring and Reporting Programs. Municipalities will achieve TMDL allocations through municipal stormwater permits. The TMDL recognizes statewide implementation efforts by municipalities and encourages the

demonstration of compliance through statewide implementation and statewide monitoring programs in addition to local efforts.

The current regulatory programs in the watershed do not specifically address water quality impairments from organochlorine pesticides and the TMDL recommends that stakeholders develop a community-based watershed organochlorine pesticide implementation plan to meet TMDL goals.

POLICY ISSUE

Should State Water Board approve the amendment to the Basin Plan to establish TMDLs for toxicity and pesticides in the Santa Maria river watershed?

FISCAL IMPACT

Central Coast Water Board and State Board staff work associated with or resulting from this action will be addressed with existing and future budgeted resources.

REGIONAL BOARD IMPACT

Yes, approval of this resolution will amend the Water Quality Control Plan for the Central Coast Basin (Basin Plan).

STAFF RECOMMENDATION

That the State Water Board:

1. Approve the amendment to the Basin Plan adopted under Central Coast Water Board Resolution No. R3-2014-0009.
2. Authorize the Executive Director or designee to submit the amendment adopted under Central Coast Water Board Resolution No. R3-2014-0009 as approved and the administrative record for this action to the Office of Administrative Law and the TMDL to the U.S. Environmental Protection Agency for approval.

State Water Board action on this item will assist the Water Boards in reaching **Goal 1** of the Strategic Plan Update: 2008-2012 to ***implement strategies to fully support the beneficial uses for all 2006-listed water bodies by 2030.*** In particular, approval of this item will assist in fulfilling the following objectives/actions:

Objective 1.1. Implement a statewide strategy to efficiently prepare, adopt, and implement TMDLs, which result in water bodies meeting water quality standards, and adopt and begin implementation of TMDLs for all 2006-listed water bodies by 2019.

Objective 1.3 Take appropriate enforcement actions and innovative approaches as needed to protect and restore all surface waters.

Action 1.3.2. The Water Board will work collaboratively to pilot enforcement programs and other innovative approaches to protect and restore surface water quality, initially focusing on compliance with the regulatory program requirements for irrigated agriculture.

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STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2014-

APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE CENTRAL COASTAL BASIN TO ADOPT TOTAL MAXIMUM DAILY LOADS FOR TOXICITY AND PESTICIDES IN THE SANTA MARIA RIVER WATERSHED
(RESOLUTION NO. R3-2014-0009)

WHEREAS:

1. On January 30, 2014, the Central Coast Regional Water Quality Control Board (Central Coast Water Board) adopted [Resolution No. R3-2014-0009](#) amending the Water Quality Control Plan for the Central Coastal Basin (Basin Plan) to establish Total Maximum Daily Loads (TMDLs) and an associated implementation plan for toxicity and pesticides in the Santa Maria River watershed.
2. The Central Coast Water Board found the Basin Plan amendment was consistent with the provisions of the State Water Resources Control Board (State Water Board) [Resolution No. 68-16](#), "Statement of Policy with Respect to Maintaining High Quality of Waters in California" and 40 CFR section 131.12.
3. The elements of a TMDL are described in 40 CFR sections 130.2 and 130.7 and section 303(d) of the CWA and U.S. Environmental Protection Agency guidance documents. A TMDL is defined as "the sum of individual waste load allocations for point sources and load allocations for nonpoint sources and natural background" (40 CFR §130.2). The Central Coast Water Board has determined that the TMDLs for toxicity and pesticides in the Lower Santa Maria River Watershed are set at levels necessary to attain and maintain the applicable narrative water quality objectives, taking into account seasonal variations and any lack of knowledge concerning the relationship between effluent limitations and water quality (40 CFR §130.7(c)(1)). The regulations in 40 CFR section 130.7 also state that TMDLs shall take into account critical conditions for stream flow, loading, and water quality parameters. TMDLs are often expressed as a mass load of the pollutant but can be expressed as toxicity or another appropriate measure (40 CFR §130.2(i)). Expressing these TMDLs in terms of toxicity and concentration is appropriate in this case because these measures demonstrate attainment of applicable narrative water quality objectives for toxicity and pesticides.
4. The Central Coast Water Board concurred with the analyses contained in the Final Project Report, the California Environmental Quality Act "Substitute Environmental Document" for the Basin Plan amendments (including the CEQA Checklist), the staff report, and responses to comments, and found that these analyses comply with the requirements of the State Water Board's certified regulatory CEQA process, as set forth in California Code of Regulations, Title 23, section 3775 et seq. Furthermore, the Central Coast Water Board found that these analyses fulfill the Central Coast Water Board's obligations attendant with the adoption of regulations "requiring the installation of pollution control equipment, or a performance standard or treatment requirement," as set forth in section 21159 of the Public Resources Code. The Central Coast Water Board's environmental analysis has taken into account a reasonable range of environmental, economic, and technical factors.

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5. The State Water Board finds that the Basin Plan amendment is in conformance with Water Code section 13240, which specifies that regional water quality control boards may revise Basin Plans, section 13242, which requires a program of implementation to achieve water quality objectives, and section 13243, which authorizes regional water quality control boards to specify certain conditions or areas where the discharges of certain types of waste will not be permitted. The State Water Board also finds that the TMDLs, as reflected in the Basin Plan amendment, are consistent with the requirements of CWA section 303(d).
6. The regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code, section 11353, subd. (b). The necessity of developing the TMDL is established in the TMDL project report, the section 303(d) list, and the data contained in the administrative record documenting the toxicity and pesticide impairments of the Santa Maria River watershed.
7. A Basin Plan amendment does not become effective until approved by the State Water Board and until the regulatory provisions are approved by California Office of Administrative Law. The TMDL must also receive approval from the U.S. Environmental Protection Agency.

THEREFORE BE IT RESOLVED THAT:

The State Water Resources Control Board:

1. Approves the amendment to the Basin Plan adopted under Central Coast Water Board Resolution No. R3-2014-0009.
2. Authorizes and directs the Executive Director or designee to submit the amendment adopted under Central Coast Water Board Resolution No. R3-2014-0009 and the administrative record for this action to the California Office of Administrative Law and the TMDL to the U.S. Environmental Protection Agency for approval.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 2, 2014.

Jeanine Townsend
Clerk to the Board