CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

RESOLUTION NO. R9-2002-0123

CHOLLAS CREEK DIAZINON TOTAL MAXIMUM DAILY LOAD

AUGUST 14, 2002

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

RESOLUTION NO. R9-2002-0123

TOTAL MAXIMUM DAILY LOAD (TMDL) FOR DIAZINON IN CHOLLAS CREEK WATERSHED SAN DIEGO COUNTY

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

1. **BASIN PLAN AMENDMENT:** The proposed amendment of the Water Quality Control Plan for the San Diego Region (Basin Plan) described in the recitals below was developed in accordance with Water Code Section 13240 et seq.

2. **NECESSITY STANDARD:** [Government Code §11353(b)]: Amendment of the Basin Plan to establish and implement a total maximum daily load (TMDL) for Chollas Creek is necessary because water quality in Chollas Creek cannot satisfy applicable water quality objectives for toxicity and pesticides even with implementation of waste discharge requirements containing technology-based effluent limits or water quality-based effluent limits for discharges of pollutants to Chollas Creek and its tributaries. Clean Water Act Section 303(d) requires the Regional Board to develop and implement a TMDL under the conditions that exist in Chollas Creek. This TMDL for diazinon is necessary to ensure attainment of applicable water quality objectives and restoration of beneficial uses designated for Chollas Creek.

3. **CLEAN WATER ACT SECTION 303(d):** Chollas Creek is currently identified on the Clean Water Act Section 303(d) list of impaired waters due to toxicity during storm events. Results from toxicity identification evaluations (TIEs) indicate that the insecticide diazinon in Chollas Creek has in part caused the toxicity during storm events.

4. **BENEFICIAL USE IMPAIRMENTS:** Chollas Creek supports several beneficial uses. The most sensitive beneficial uses are those designated for protection of aquatic life and aquatic dependent wildlife as described in the Basin Plan definition of the warm freshwater habitat (WARM) and wildlife habitat (WILD) beneficial uses. The WARM and WILD beneficial uses of Chollas Creek are adversely affected by toxicity due to diazinon.

5. **WATER QUALITY OBJECTIVES:** Diazinon levels in Chollas Creek cause toxicity during storm events. The Basin Plan does not contain a specific water quality objective for diazinon. The Basin Plan establishes following the narrative water quality objectives for "toxicity" and "pesticides" to ensure the protection of the WARM and WILD beneficial uses.

Toxicity Objective: *All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board.*

The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water factors, shall not be less than that for the same water body in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with requirements specified in US EPA, State Water Resources Control Board or other protocol authorized by the Regional Board. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour acute bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.

Pesticide Objective: *No individual pesticide or combination of pesticides shall be present in the water column, sediments, or biota at concentration(s) that adversely affect beneficial uses. Pesticides shall not be present at levels which will bioaccumulate in aquatic organisms to levels which are harmful to human health, wildlife or aquatic organisms.*

6. **WATER QUALITY OBJECTIVE VIOLATIONS:** Toxicity tests using the water flea *Ceriodaphnia dubia* indicate that Chollas Creek storm water flows are toxic. Toxicity Identification Evaluations (TIEs) show that diazinon is responsible for the toxicity to the water flea. Accordingly, diazinon concentrations in Chollas Creek cause violations of the above "toxicity" and "pesticide" water quality objectives during storm events. The average concentration of diazinon in Chollas Creek during storm events is 0.46 μg/L. Chollas Creek waters also contain metals that are responsible for toxicity to a marine invertebrate. A separate TMDL is under development to address metals in Chollas Creek.

7. **SOURCES OF DIAZINON:** Urban storm water flows represent the most significant source of diazinon in the Chollas Creek watershed.

8. **CONCENTRATION-BASED TMDL:** Because aquatic toxicity is the most significant adverse effect of diazinon and because aquatic toxicity is a function of water column concentrations, this TMDL is a concentration-based, rather than mass emission-based TMDL. The Numeric Targets, TMDL (Loading Capacity), and Waste Load and Load Allocations are all defined in terms of concentrations.

9. **NUMERIC TARGETS:** The TMDL Numeric Targets, which are derived from the water quality objectives, identify the specific water column, sediment, or tissue concentrations (or other endpoints) which equate to attainment of the Basin Plan water quality objectives and the protection of designated beneficial uses. Therefore, if the numeric targets (for all causative pollutants) are appropriately selected, attainment of the Numeric Targets will result in attainment of the underlying water quality objectives and beneficial use protection.

   The Numeric Targets for diazinon in Chollas Creek are set equal to the California Department of Fish and Game freshwater Water Quality Criteria for diazinon. The acute Water Quality Criterion of 0.08 μg/L diazinon protects aquatic life from short-term exposure to diazinon, while the chronic criterion of 0.05 μg/L diazinon protects aquatic life from long-term diazinon exposure.

10. **TOTAL MAXIMUM DAILY LOAD:** The term Total Maximum Daily Load (TMDL), or Loading Capacity, is defined as the maximum amount of a pollutant that a waterbody can receive and still attain water quality objectives and protection of designated beneficial uses. The concentration-based Loading Capacity for diazinon in Chollas Creek is set at exactly the same concentrations as the numeric targets.

11. **LINKAGE ANALYSIS:** The purpose of the linkage analysis is to confirm that the TMDL will result in the attainment of applicable water quality objectives and beneficial use protection. With respect to diazinon, this TMDL will result in the attainment of the "toxicity" and "pesticide" water quality objectives and the restoration of the WARM and WILD beneficial uses in the Chollas Creek watershed[1]. This is because the Numeric Targets are set equal to the diazinon Water Quality Criteria which are based on toxicity testing and are specifically established at levels to ensure the protection of aquatic life from acute and chronic exposure to diazinon. The Water Quality Criteria protect all aquatic life stages including the most sensitive stages.

12. **WASTE LOAD AND LOAD ALLOCATIONS:** The concentration-based Waste Load and Load Allocations of this TMDL are applied equally to all diazinon discharge sources in the Chollas Creek watershed. All allocations are set at 90% of the numeric targets resulting in a diazinon allocation equal to 0.072 μg/L under acute exposure conditions and a diazinon allocation of 0.045 μg/L under chronic exposure conditions. These allocations include an explicit 10 % margin of safety to account for uncertainties in the TMDL analysis. This concentration-based TMDL and its allocations apply year-round and will be protective during all flow conditions and seasons.

---

[1] **MULTIPLE POLLUTANTS:** Finding 11 regarding attainment of water quality standards is qualified with the words "with respect to diazinon" because there are multiple pollutants causing toxicity. Toxicity conditions in Chollas Creek are caused by metals and diazinon. Successful implementation of both the Chollas Creek diazinon TMDL and the Chollas Creek metals TMDL is expected to result in full attainment of the "Toxicity" water quality objectives, and of the WARM and WILD beneficial uses.

13. **DIAZINON CONCENTRATION-BASED LOAD REDUCTIONS:** An 84% reduction of current diazinon concentration–based loads is needed to attain the acute diazinon allocations set forth in this TMDL. A 90% reduction of current diazinon concentration–based loads is needed to attain the chronic diazinon allocations set forth in this TMDL.

14. **RESPONSIBLE PARTIE(S):** As dischargers of diazinon in urban storm water flows to Chollas Creek, the City of San Diego, City of Lemon Grove, City of La Mesa, San Diego Unified Port District, County of San Diego and the California Department of Transportation (CalTrans) are responsible for implementation of this TMDL. These entities are regulated as municipal Copermittees under the San Diego MS4 Permit or the statewide CalTrans MS4 Permit.

15. **PRIMARY IMPLEMENTATION MECHANISMS:** The primary mechanisms to implement the diazinon waste load reductions required by this TMDL are:

    a. **USEPA's Diazinon Phase-Out and Elimination Program:** In January 2001, USEPA reached an agreement with registrants (manufacturers) of diazinon to phase-out most uses (USEPA 2002). Under the agreement, all indoor uses will be terminated, and all outdoor non-agricultural uses will be phased-out over the next few years. Retail sales of diazinon for home uses at indoor sites will be stopped after December 31, 2002. The USEPA's phase-out of diazinon is the single most significant mechanism to implement this TMDL. In the Chollas Creek watershed the phase-out actions are expected to significantly reduce the source loadings of diazinon, and resulting aquatic toxicity, to negligible levels over time.

    b. **Modification of Existing Waste Discharge Requirements / NPDES Permit** The Regional Board's San Diego Municipal Storm Water Permit, also known as the San Diego MS4 Permit is the primary broad-based NPDES permit which directly regulates most pollutant discharges, including diazinon, in the Chollas Creek watershed. Federal regulations require that NPDES permits contain effluent limitations that are consistent with waste load allocations developed under a TMDL (40CFR 122.44 (d)(vii)(B)). The Regional Board will revise the San Diego MS4 Permit as necessary to conform with this TMDL.

    Compliance with numeric limitations for diazinon will be required in accordance with a phased schedule of compliance. The compliance schedule will be jointly developed by the Regional Board and the Chollas Creek stakeholders and will be finalized no later than one year following adoption of this TMDL by the Regional Board. The phased compliance schedule will apply only to attainment of numeric limitations for diazinon. All other requirements of this TMDL will be immediately effective upon incorporation into applicable NPDES permits.

    c. **Activities By Municipal Copermittees Pursuant to MS4 Permit and CWC Section 13267** Pursuant to the MS4 Permit and under the authority of Water Code Section 13267, the Regional Board will direct the municipal Copermittees in the Chollas

Creek watershed to 1) enforce existing local ordinances and adopt new legal authority as needed; 2) implement a "Diazinon Toxicity Control Plan"; and 3) conduct a focused Public Outreach / Education program.

16. **SECONDARY IMPLEMENTATION MECHANISMS:** Secondary mechanisms to implement this TMDL include 1) compliance with MS4 Permit, 2) compliance with existing waste discharge prohibitions; 3) enforcement authority of Regional Board; 4) modification of other waste discharge requirements; 5) adoption of new waste discharge requirements/NPDES permits as needed for significant sources of diazinon in the Chollas Creek watershed, and additional investigations and reports as needed pursuant to Water Code Section 13225.

17. **MONITORING PLAN:** The Regional Board will direct the municipal Copermittees in the Chollas Creek watershed to develop and implement a Diazinon Monitoring Plan. The Plan shall be designed to assess the effectiveness of this TMDL, its implementation measures, and progress towards attainment of applicable water quality objectives and beneficial use protection in the Chollas Creek watershed.

18. **SCIENTIFIC PEER REVIEW:** The scientific basis of this TMDL has undergone external peer review pursuant to Health and Safety Code Section 57004. The Regional Board has considered and responded to all comments submitted by the peer review panel

19. **IMPLEMENTATION CHAPTER OF BASIN PLAN:** This Basin Plan amendment amends the Implementation Chapter of the Basin Plan (Chapter 4) to establish a TMDL for diazinon in the Chollas Creek Watershed and includes a program to implement the TMDL and monitor its effectiveness.

20. **ECONOMIC ANALYSIS:** The Regional Board has considered the costs of implementing this Basin Plan amendment, and finds these costs to be reasonable relative to the water quality benefits derived from implementing the amendment.

21. **DE MINIMUS ENVIRONMENTAL EFFECTS:** The Regional Board has prepared environmental documentation. This Basin Plan amendment results in no potential for adverse effect, either individually or cumulatively, on wildlife.

22. **PUBLIC NOTICE:** The Regional Board has notified all known interested parties and the public of its intent to consider adoption of this Basin Plan amendment.

23. **PUBLIC HEARING:** The Regional Board held a public hearing on June 12, 2002 and extended the written comment period by fifteen days. The Regional Board has heard and considered all comments pertaining to this Basin Plan amendment.

NOW, THEREFORE, BE IT RESOLVED that

1. **AMENDMENT ADOPTION:** The Regional Board hereby adopts this amendment to the Implementation Chapter of the Basin Plan (Chapter 4) to incorporate the Chollas Creek Diazinon TMDL as set forth in Attachment A hereto.

2. **CERTIFICATE OF FEE EXEMPTION:** The Executive Officer is authorized to sign a Certificate of Fee Exemption.

3. **AGENCY APPROVALS:** The Executive Officer is directed to submit this Basin Plan amendment to the State Water Resources Control Board (State Board) in accordance with California Water Code Section 13245. The Regional Board requests that the State Board approve the Basin Plan amendment and forward it to Office of Administrative Law (OAL) and the United States Environmental Protection Agency for approval.

4. **NON-SUBSTANTIVE CORRECTIONS:** If, during the approval process for this amendment, the State Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Regional Board of any such changes.

I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on August 14, 2002.

John H Robertus

JOHN H. ROBERTUS
Executive Officer