



California Regional Water Quality Control Board

Central Valley Region

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Sacramento and San Joaquin River Watersheds Pesticide Basin Plan Amendment Fact Sheet

1 Introduction

This fact sheet outlines an effort to develop a comprehensive pesticide Basin Plan Amendment for the Sacramento and San Joaquin River watersheds, including the Delta. The Amendment would be designed to establish water quality objectives and a program of implementation for pesticides that are impacting or could potentially impact aquatic life uses in surface waters. The focus of this Amendment will be on natural streams that have aquatic life uses.

This comprehensive Basin Plan Amendment is expected to be more cost effective and efficient than other Basin Planning options (e.g. water body by water body). In addition, focusing solely on pesticides on the current Section 303(d) impaired water body list could lead to increased use of other pesticides, which may then cause water quality problems leading to the potential need for further Basin Plan Amendments. Clearly identified numeric water quality objectives should also facilitate the implementation of any Regional Board regulatory programs governing the discharge of pesticides.

The following summarizes a work plan to address pesticide runoff in the Sacramento and San Joaquin River watersheds in a comprehensive manner. The geographic scope of this project and potential number of pesticides addressed may change pending further internal review.

2 Goals and Objectives

2.1 Goals of Pesticide Basin Plan Amendment

The primary goal of the Pesticide Basin Plan Amendment is to provide a clear regulatory framework for the protection of aquatic life from pesticide runoff in the Sacramento and San Joaquin River Watersheds, including the Delta. The Amendment will be focused on those pesticides that have the greatest potential to impact aquatic life. The regulatory framework under consideration will include beneficial uses, site-specific numeric water quality objectives, implementation policies, and monitoring requirements.

Regional Board staff will work closely with the Department of Pesticide Regulation, County Agricultural Commissioners, and U.S. EPA to ensure that efforts to regulate pesticide discharge and pesticide use are as mutually supportive as possible. Interaction with stakeholders will also be critical to ensuring the Basin Plan Amendment is clear, technically valid, and achievable.

A secondary goal is to establish clear procedures that can be used to develop numeric water quality objectives for pesticides that may be registered in the future. Such a procedure would facilitate development of numeric objectives, as well as assisting DPR in the evaluation of pesticides going through the registration process.

California Environmental Protection Agency

2.2 Objectives of Pesticide Basin Plan Amendment

To accomplish its goal, Regional Board staff has the following objectives:

- 1) Identify those streams in the Sacramento and San Joaquin River watersheds that should fully support aquatic life in the absence of elevated pollutant levels.
- 2) Identify those pesticides that pose the greatest potential threat to aquatic life, whether in the benthos or water column. At a minimum, diazinon and chlorpyrifos will be addressed.
- 3) Identify numeric metrics that, when attained, will protect aquatic life from the interactive or individual effects of those pesticides identified in #2.
- 4) Identify viable management measures to prevent pesticide impacts.
- 5) Determine the time frame necessary to develop and implement any necessary management measures.
- 6) Determine the available assimilative capacity for each pesticide or pesticide combination and allocate the assimilative capacity to known sources of those pesticides.
- 7) Establish a clear process for communicating with stakeholders during the development of the Basin Plan Amendment.
- 8) Ensure appropriate monitoring of pesticides is conducted

3 Scope of Work

The following technical reports will be produced as part of this Basin Plan Amendment process:

Aquatic Life Beneficial Use Assessment –most streams in the Sacramento and San Joaquin River watersheds are not specifically identified in the Basin Plan. This report will include a review of the aquatic life beneficial uses that apply to streams (not constructed conveyances) that may receive pesticide runoff.

Pesticide Risk Assessment – the number of pesticide active ingredients used on agricultural crops in the Sacramento and San Joaquin Valleys numbers in the hundreds. The risk that a pesticide poses to surface waters depends on a number of factors, including the amount of pesticide used, the timing of use, the physical-chemical properties of the pesticide, the sensitivity of aquatic organisms to the pesticide, whether it can act in an additive or synergistic manner with other contaminants, and the crops upon which it is applied. Pesticides currently on the Clean Water Act Section 303(d) list will be assumed to pose a risk. These factors, along with others, will be evaluated to determine which pesticides pose the greatest potential risk to aquatic organisms in stream sediment or the water column. This is a screening level assessment that will allow Central Valley Water Board staff to determine where to focus efforts for criteria development.

Water Quality Criteria – based on the pesticide risk assessment, water quality criteria will be developed for pesticides that pose a potential water column risk either individually or in combination with other pesticides, depending on availability of funding. At a minimum, criteria for diazinon and chlorpyrifos will be developed. The criteria document will include a summary of the available toxicity test results and a proposed methodology for establishing criteria when limited lab toxicity data is available.

Sediment Quality Criteria – it is anticipated that certain pesticides currently in wide use will not pose the greatest risk in the water column, but in the sediment. This report will summarize any available data on sediment toxicity for those pesticides. Both potential narrative and numeric sediment quality criteria will be considered.

Source Assessment and Loading Capacity Analysis – the sources of the pesticides posing a potential risk to surface water will be identified, and, where possible, the relative contribution of each source will be quantified. Water quality models or other methods will be used to estimate the loading capacity for the “high” risk pesticides and to identify potential urban and agricultural sources. Loading capacity estimates will consider additive or synergistic toxicity effects.

Management Practice Alternatives – for certain pesticides, reductions in pesticide discharge will be required in order to attain water quality objectives. The management practices available to reduce those discharges will be evaluated. Management practices considered may include alternate pest management strategies, practices that reduce runoff or off-site movement of pesticides, and irrigation or water management practices. Management practices will be evaluated by crop, where appropriate. An estimate of the effectiveness of the practice in reducing pesticide runoff will be made when such data is available.

4 Current Status (01/30/06) and Contacts

Project Contact – Joe Karkoski (916) 464-4668; jkarkoski@waterboards.ca.gov

Aquatic Life Use Assessment – Staff have completed an initial literature review of fish distribution in the Central Valley and results of bioassessments. Staff will also conduct a limited bioassessment monitoring effort in 2006 in some streams not currently identified in the Basin Plan. Contact – Petra Lee (916) 464-4603; plee@waterboards.ca.gov

Pesticide Risk Assessment – A draft pesticide risk assessment for the Sacramento Valley has been completed. Staff is working on similar assessments for the Delta and San Joaquin Valley. Contact – Zhimin (Jamie) Lu (916) 464-4830; zlu@waterboards.ca.gov

Water Quality Criteria – The Central Valley Water Board has entered into a contract with the Environmental Toxicology Department of the University of California, Davis to evaluate and develop an aquatic life criteria methodology. The contract has three primary tasks – 1) a review of existing criteria derivation methodologies; 2) identification of a viable existing method or development of a new method using the best available science; and 3) derivation of criteria for at least diazinon and chlorpyrifos – other pesticides will be addressed based on funding availability. Scientific peer review of each of the primary work products will take place. Contact – Paul Hann (916) 464-4628; phann@waterboards.ca.gov.

Sediment Quality Criteria – Staff has begun to review available sediment criteria methodologies. Contact – Paul Hann (916) 464-4628; phann@waterboards.ca.gov.

Source Assessment and Loading Capacity Analysis – This analysis will be conducted after completion of the pesticide risk assessment.

Management Practice Alternatives – A review of management practices has been conducted for management of pesticide runoff during the dormant and irrigation seasons (http://www.waterboards.ca.gov/centralvalley/programs/tmdl/sjrop/ag_practices_report.pdf). Based on the pesticide risk assessment, the report will be reviewed and potentially updated to reflect any new information on management practices. Contact – Joe Karkoski (916) 464-4668.

For more information, please see: <http://www.waterboards.ca.gov/centralvalley/programs/tmdl/pest-basinplan-amend/index.html>

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