



April 27, 2011

Ms. Erin Forseman
U.S. Environmental Protection Agency
75 Hawthorne Street, WTR-3
San Francisco, California 94105

Dear Ms. Foreman:

The U.S. Environmental Protection Agency (U.S. EPA) has published an advance notice of proposed rulemaking to seek comments from interested parties on possible U.S. EPA actions to address water quality conditions that affect aquatic resources in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay Delta Estuary) in California. U.S. EPA has asked the public to consider broadly whether U.S. EPA should be taking new or different actions under its programs to address recent significant declines in multiple aquatic species in the Bay-Delta Estuary, and to submit written comments (Docket Number EPA-R09-OW-2010-0976). Pesticides have been shown to affect aquatic resources in the estuary.

U.S. EPA issued various documents, including a press release, Federal Register text, and a document, "Unabridged Advanced Notice of Proposed Rulemaking for Water Quality Challenges in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary." Yet none of these documents refer to the laws, regulations, and programs carried out by U.S. EPA and the Department of Pesticide Regulation (DPR) to address potential adverse effects of pesticides on water quality. The "Advanced Notice" focuses only on litigation involving U.S. EPA and the Endangered Species Act regarding pesticides.

In particular, this omission ignores laws, regulations, and programs DPR carries out and can use to do the following:

- (1) Assess the potential of pesticides to contaminate the environment before registration
- (2) Continuously evaluate pesticides and place pesticides in formal reevaluation after they are registered to address environmental problems



- (3) License and require continuing education for pesticide applicators to ensure competency in protecting the environment
- (4) Enforce general standards of care that require applicators, among other measures, to exercise reasonable precautions to avoid contamination of the environment
- (5) Collect environmental data to determine if pesticides are causing water quality problems, to develop and test potential mitigation measures, and to assess the effectiveness of and compliance with regulations to protect surface water
- (6) Minimize drift as a source of contamination
- (7) Regulate rice, dormant spray, and other pesticides to protect water quality
- (8) Adopt regulations to protect surface water from the adverse effects of pesticides
- (9) Make pesticides restricted materials that require permits for use issued, conditioned, and enforced by county agricultural commissioners (CACs) to protect water quality

DPR believes U.S. EPA's efforts to address water quality in the Bay Delta Estuary should include a description of these various legal and program tools that DPR has successfully used in the past and can use in the future to address adverse impacts of pesticides on water quality.

U.S. EPA Pesticide Program

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) authorizes U.S. EPA to regulate the registration, distribution, sale, and use of pesticides. All pesticides distributed or sold in the U.S. must be registered (licensed) by U.S. EPA. Before U.S. EPA may register a pesticide under FIFRA, the applicant must show that using the pesticide according to specifications "will not generally cause unreasonable adverse effects on the environment." FIFRA defines the term "unreasonable adverse effects on the environment" to mean: "(1) any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide, or (2) a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the standard under section 408 of the Federal Food, Drug, and Cosmetic Act."

FIFRA gives U.S. EPA authority to register pesticides based on a risk/benefit standard; to require data from pesticide registrants, including data on the environmental fate of pesticides; to regulate pesticide use through labeling, packaging, composition, and disposal; and to suspend or cancel a product's registration if subsequent information shows that continued use would pose unreasonable risks.

DPR Pesticide Program

DPR's mission is to protect human health and the environment by regulating pesticide sales and use and by fostering reduced-risk pest management. In fiscal year 2000-11, DPR's budget was

\$82 million, funded by regulatory fees. DPR has about 375 employees, including more than 120 toxicologists, environmental and technical specialists, and other highly trained scientists.

About \$20 million of DPR's budget is designated to support local pesticide enforcement by the CACs. Under DPR oversight, CACs and the approximately 275 biologists that work for them serve as the local enforcement agents for pesticide laws and regulations in the state's 58 counties.

Among other duties, CACs are responsible for issuing the site-and time-specific permits required of those who wish to use restricted pesticides in agriculture. (Restricted materials are those pesticides that have a higher potential to have an adverse impact on health or the environment). No other state has a permitting system for use of highly hazardous pesticides, and few states have effective mechanisms for local enforcement of pesticide laws.

Registration

Before a pesticide may be marketed and used in California, DPR evaluates it thoroughly, under guidelines of the Food and Agricultural Code (FAC), to protect human health or the environment. Pesticides that pass this scientific, legal, and administrative process are granted a license that permits their sale and use according to requirements set by DPR. Once registered, a pesticide may not legally be used unless the use is consistent with the approved directions for use on the pesticide's label.

The law requires prospective registrants to send DPR data on a wide variety of potential human health and environmental effects associated with use of the product including:

- Acute and chronic toxicity, that is, the capacity of the chemical to harm humans either in limited exposures (acute) or over the long term (chronic)
- How the pesticide behaves in the environment
- Effectiveness against targeted pests ("efficacy")
- Hazards to nontarget organisms
- Effects on fish and wildlife
- Worker exposure
- Product composition and chemistry

DPR staff scientists with expertise in fish and wildlife biology and chemistry review required scientific data to determine the effects of pesticides on nontarget species, including fish and wildlife, and endangered species; and the effects on the environment, e.g., environmental fate, breakdown products, leachability, and persistence. Scientists also evaluate pesticide products for potential to contaminate ground or surface water.

DPR scientists review product labels to ensure:

- They comply with U.S. EPA labeling standards and clarity
- They accurately reflect human health hazards suggested by toxicology data
- They accurately reflect environmental hazards suggested by environmental data
- The label requirements are practical and can be enforced in the field
- Use instructions are adequate to protect pesticide users and others from overexposure

If any changes are necessary, DPR staff work with the registrant and U.S. EPA to recommend revisions that will satisfy health or environmental concerns. (According to federal law, pesticide label language is under the jurisdiction of U.S. EPA, which must approve any changes. A state cannot require manufacturers to make changes in labels. However, states can refuse to allow registration and therefore the possession, sale and use of any pesticide not meeting its own standards).

DPR may decide not to register a pesticide product, or cancel the registration of any product already registered. That action must be based on serious, uncontrollable adverse effects on the environment; greater detriment than benefit to the environment; harm to vegetation, domestic animals, or public health and safety; and uses deemed to hold little or no value.

A system of local use enforcement through the CACs allows DPR to put mitigation measures in place in certain areas, as opposed to a statewide ban. This may be accomplished by placing controls in regulation or by making a pesticide a restricted material. Restricted materials require a permit from the CAC, who has broad discretion to condition permits on the applicator using additional control measures. DPR has oversight of the permit process and recommends conditions to be included in the permits.

DPR also consults with other public agencies on proposed pesticide registrations and more broadly on regulatory policies through routine daily contacts and, more formally, through its Pesticide Registration and Evaluation Committee. This committee brings together all public agencies with legal jurisdiction on use of pesticides, or whose activities or resources may be affected by use of pesticides. Among others, the committee includes representatives of the State Department of Fish and Game (DFG), the State Water Resources Control Board (SWRCB), and U.S. EPA, Region 9.

Continuous Evaluation and Reevaluation

Under California law (FAC 12824, created by Statutes of 1969, Chapter 1169) DPR must “eliminate from use” any pesticide that “endangers the agricultural or nonagricultural

environment, is not beneficial for the purposes for which it is sold, or is misrepresented.” To do this, the law requires the department to have “an orderly program for the continuous evaluation” of registered pesticides.

The principle that chemical use should not cause unacceptable risks to human health or the environment guides all DPR decisions. Before DPR registers a pesticide, department scientists evaluate the pesticide’s toxic potential, its potential exposure to people and the relationship between toxic effects and that potential exposure, and the potential for a pesticide to cause environmental problems. After registration, several DPR programs evaluate use practices to detect possible problems. Through continuing monitoring and surveillance, DPR can determine the fate of pesticides in the environment and find ways to prevent pesticide contamination.

DPR monitoring and surveillance includes:

- Monitoring of air quality, and ground and surface water
- Investigation and evaluation of pesticide illnesses and incidents
- Sampling and testing of fresh produce
- Special monitoring, such as pest management and eradication projects
- Developing pesticide analytical methods
- Sampling and analyzing environmental samples
- Exposure monitoring, including exposure and residue studies to collect data on potential exposure patterns and to assess the effectiveness of existing controls
- Risk assessments completed on registered active ingredients

DPR uses the data collected to evaluate the effectiveness of DPR’s regulatory programs and to assess the need for changes. For example, scientists incorporate DPR air monitoring data into the exposure portion of a risk assessment, helping to develop measures to reduce risk or find out if existing rules are effective.

Registrants must also report to DPR any adverse effects (for example, harm to humans, animals or the environment) that occur after their products are registered.

The Reevaluation Process

DPR also has a formal Reevaluation Program. California regulations (Title 3 of the California Code of Regulations [3 CCR] section 6221) requires DPR to investigate all reports of actual or potentially significant adverse effects to people or the environment resulting from the use of pesticides. If DPR has reason to believe that a pesticide may cause unreasonable adverse effects to people or the environment, the regulations require DPR to reevaluate the pesticide to determine if it should remain registered.

The regulations specify factors that may initiate reevaluation, including fish or wildlife hazard, other information suggesting a significant adverse risk, environmental contamination, inadequate labeling, and availability of an effective and feasible alternative material or procedure which is demonstrably less destructive to the environment. Reevaluation is often triggered by ongoing departmental registration reviews, such as environmental monitoring activities. Information from other state or federal agencies, or other sources, may also trigger a reevaluation.

DPR concludes reevaluations in several ways. If the data show that use of the pesticide presents no significant adverse effects, DPR concludes the reevaluation without additional mitigation measures. If additional mitigation measures are necessary, DPR adopts regulations to mitigate the potential adverse effect. In applicable situations, DPR works with registrants and the U.S. EPA to revise labels to mitigate hazards. If the adverse impact cannot be mitigated, DPR cancels or suspends the registration of the pesticide product.

Licensing and Certification

One of the purposes of the pesticide law (FAC section 11501) is to permit agricultural pest control by competent and responsible licensees and permittees under strict control of DPR's director and CACs. The Pest Management and Licensing Branch administer the department's Licensing and Certification Program. This program examines and licenses commercial pest control applicators, aerial applicators, pesticide dealers and brokers, and pest control advisers; and certifies pesticide applicators that use or supervise the use of restricted pesticides. The purpose is to ensure that persons selling, possessing, storing, handling, applying, and recommending the use of pesticides are knowledgeable in their safe use. Such licenses and certificates cannot be renewed unless the holder has completed certain minimum continuing education hours related to pesticides or pest management within each two-year license or certificate period.

In addition, pest control businesses, agricultural pest control advisers, and pest control aircraft pilots must register with each county in which they operate. The law provides that the CAC may revoke for cause any registration to work in that county.

General Standards of Care

To the extent that surface water contamination may be caused by misapplication of pesticides, pesticide applicators are required to comply with general standards of care, which means they shall use only pest control equipment which is in good repair and safe to operate, perform all pest control in a careful and effective manner, use only methods and equipment suitable to insure proper application of pesticides, perform all pest control under climatic conditions suitable to insure proper application of pesticides, and exercise reasonable precautions to avoid contamination of the environment.

Collecting environmental data

The Environmental Monitoring Branch has the lead role in implementing the department's environmental protection programs. It designs and conducts studies to provide data that help assess ecological impacts of pesticide residues in water. Specific examples include monitoring to evaluate the effect of application methods on offsite movement of pesticides, and to characterize off-site movement after application that may contaminate surface water. The branch also conducts studies to evaluate measures designed to mitigate the adverse effects of pesticides, such as procedures involving the application of pesticides as well as managing pesticide residues after application.

Staff develops sampling methods for pesticide residues and provides funding to the California Department of Food and Agriculture Center for Analytical Chemistry for analytical method development. This ensures that the best procedures are available when they are needed.

These projects focus on monitoring under actual field conditions specific to California. Although other State agencies including SWRCB, Regional Water Quality Control Boards (RWQCBs), and DFG, may also sample for pesticides in the environment, the purpose of such sampling would be to meet their specific legal mandates or to sample for ingredients or in media not sampled by DPR. If pesticides are detected by these other agencies, DPR may conduct additional sampling to confirm the detections, characterize the nature and extent of the detections and, if necessary, determine how the off-site movement of pesticides may be mitigated.

Drift Mitigation

Drift is a potential source of surface water contamination. FAC section 12972 requires that the use of any pesticide by any person shall be in such a manner as to prevent substantial drift to nontarget areas. 3 CCR section 6000 defines substantial drift as quantity of pesticide outside of the area treated is greater than that which would have resulted had the applicator used due care. In a future rulemaking, DPR plans to adopt engineering controls (nozzle types, pressures, orientation, etc.) to help mitigate drift that can contaminate surface water.

Surface Water Program

DPR's programs to protect ground and surface water address both agricultural and nonagricultural sources of pesticide residues in water and include pollution prevention and response elements.

The goals of DPR's surface water program include:

- Characterizing pesticide residues in surface water bodies (including rivers, streams, and agricultural drains)
- Identifying sources of contamination
- Determining the mechanisms of off-site movement of pesticides to surface water
- Developing and promoting site-specific mitigation strategies
- When warranted, adopting restrictions to further protect surface water from contamination

Surface water scientists evaluate new active ingredients before registration for their potential to move offsite and impact aquatic environments. This may lead to additional controls being required before a product can be used in California. The surface water program also participates in formal reevaluation of already registered products that have caused adverse impacts to aquatic organisms and helps develop mitigation options to meet water quality goals.

DPR scientists evaluate and develop computer modeling tools to assess pesticide runoff potential, exposure and impact to aquatic organisms, efficacy of mitigation measures and to help prioritize pesticide candidates for monitoring and regulatory consideration.

In consultation with SWRCB and RWQCBs and other agencies, the surface water program designs and conducts monitoring to assess pesticide contamination of surface water in both agricultural and urban watersheds. This involves identifying and prioritizing active ingredients (through pesticide use report and environmental toxicity data) that warrant surface water monitoring.

DPR scientists conduct research to characterize the factors that lead to off-site movement and to develop use practices to prevent such movement. DPR also contracts with university researchers for studies related to the impacts of pesticides in agricultural and urban environments. Research topics include runoff source identification, mitigation measure identification and evaluation, and development of outreach materials.

DPR's surface water program maintains a comprehensive database of surface water monitoring results. The database is available to the public on DPR's Web site.

Under the terms of agreements between DPR and SWRCB DPR investigates pesticides of concern and helps develop recommended pesticide use practices designed to reduce or eliminate the impact of pesticides on surface water quality. Staff identify, develop, evaluate the efficacy of, and promote these mitigation measures. Management practices designed to reduce contamination are carried out initially through voluntary and cooperative efforts. Depending on the source of the problems, mitigation may include outreach to educate the public on ways to reduce pesticides

in urban waters and programs targeted at changing use practices among agricultural pesticide users.

If voluntary efforts do not adequately mitigate the impacts, DPR must use its regulatory authority to impose restrictions. DPR may modify the use of pesticides by regulation or permit conditions to prevent excessive residues from reaching surface water and to assure compliance with the water quality objectives of SWRCB and RWQCBs.

Dormant Spray Water Quality Program:

Spraying of Central Valley orchard crops during cold weather, when the trees are dormant, kills overwintering insects and diseases. However, the organophosphate insecticides used as dormant sprays cause problems when drift occurs or when storm runoff washes residues into rivers and streams. To deal with the problem, DPR established its Dormant Spray Water Quality Program in 1996. Rather than immediately move to mandatory restrictions, DPR and the CACs asked local resource conservation districts, farmers, and pesticide manufacturers to develop methods to control offsite movement of these chemicals. However, DPR monitoring conducted over five years determined that voluntary practices were not reducing sufficiently the movement of harmful pesticides to surface water. In 2007, DPR adopted regulations requiring the use of alternative pesticides, a buffer zone between the application and waterways, or other means to prevent potential contamination.

Rice Pesticides Monitoring Program:

In the early 1980s, SWRCB documented fish kills in Sacramento Valley agricultural drains caused by the rice herbicide molinate. At the same time, the herbicide thiobencarb caused a bitter taste in Sacramento city drinking water. Beginning in 1983, the California Department of Food and Agriculture (and later DPR), CACs, DFG, SWRCB and the Central Valley RWQCB, and the rice industry worked together to develop and put into place a plan to control discharges of pesticides from rice fields. Agencies agreed that by holding water in the rice fields, the pesticides could degrade enough to reduce toxicity to acceptable levels in receiving waters.

In 1990, the objectives of these control efforts were clarified with amendments to the Central Valley RWQCB's water quality control plan establishing performance goals and a conditional prohibition of discharge of five rice pesticides. (Performance goals are target concentrations designed to protect the beneficial uses of surface water from contamination and provide a level by which compliance with a monitoring program could be measured).

DPR and the CACs established restrictions on the use of rice herbicides to meet water quality standards. CACs continue to conduct water-hold and other inspections to enforce the limits. Through a combination of mandated restricted materials permits issued by CACs and management practices carried out by rice growers, this program has been successful in reducing pesticide loading in waterways receiving rice field runoff.

Until 2003, DPR monitored for rice pesticides each year in agricultural drains next to rice fields and in areas of the Sacramento River that receive rice field water. In 2003, the California Rice Commission, a commodity group representing California rice growers and handlers, took over responsibility for monitoring surface water and documenting grower compliance with the rice pesticides program. DPR provides oversight and continues to work with the Central Valley RWQCB and the rice industry to ensure continued protection of water quality.

Future Surface Water Protection Regulations

DPR is planning to expand upon the dormant spray regulations to regulate the use of pesticides found in surface water year-round, in two phases. The first phase will regulate the outdoor nonagricultural use of pyrethroid pesticides that have been found in, or have the potential to move offsite to, surface water. The regulations would prohibit applications during rainfall, to various drains and gutters, within certain distances of drains or aquatic habitats, and reduce the amount of pesticide that can be applied to soil and plants and particularly to impervious surfaces, where runoff potential is particularly high.

The second phase will regulate the outdoor agricultural use of pesticides that could include pyrethroids, chlorpyrifos and diazinon.

Restricted Materials and Permitting

FAC section 14004.5, et seq, requires DPR's director, by regulation, to designate and regulate pesticides as restricted materials based on, but not limited to, various criteria including hazard to the environment from drift onto streams, lakes, and wildlife sanctuaries, and hazards related to persistent residues in the soil resulting ultimately in contamination of the air, waterways, estuaries or lakes, with consequent damage to fish, wild birds, and other wildlife. 3 CCR section 6400 lists pesticides that are restricted materials. 3 CCR sections 6445-6489 specify the

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use restrictions for specified restricted materials These pesticides can only be applied by or under the supervision of a certified applicator, and with certain exceptions, require a permit for use issued by the CAC. The permit may include enforceable conditions for use to protect human health or the environment.

If you have any questions, please feel free contact Dr. John S. Sanders, of my staff, at 916-324-4155.

Sincerely,

Original signed by

Charles M. Andrews, Associate Director
Pesticide Programs Division
916-445-3984

cc: Ms. Pam Cooper, U.S. EPA Region 9

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