tdc environmental

MEMO

TO:	Bill Johnson	**DATE:**	April 23, 2003
FROM:	Kelly D. Moran	**PROJECT:**	16
SUBJECT:	Evaluation of Regional Efforts to Improve Existing Federal Regulatory Processes to Prevent Water Quality Impairment from Pesticides		

Since late 1999, California water quality agencies have participated in selected U.S. Environmental Protection Agency (U.S. EPA) pesticide regulatory processes to prevent surface water impairment and to avoid wastewater and stormwater National Pollutant Discharge Elimination System (NPDES) permit violations. This memorandum summarizes California water quality agency input into U.S. EPA urban water quality-related pesticide regulatory actions since late 1999, evaluates the outcomes of the California water quality agencies' efforts to date to improve pesticide regulatory processes, and provides a schedule of anticipated future actions. This memorandum is one of the final products of a project funded by the San Francisco Bay Regional Water Quality Control Board (RWQCB) to monitor U.S. EPA pesticide regulatory activities that may affect surface water quality in urban areas.

Background

Federal law provides U.S. EPA with the ability to protect surface water from pesticides, but—as demonstrated by U.S. EPA determining that registered pesticide use is a source of water quality impairment[1]—current U.S. EPA procedures are insufficient to ensure that pesticide use does not cause violations of the Clean Water Act. When urban runoff agency managers met with U.S. EPA pesticide registration staff in 1998 and 1999, they learned that U.S. EPA's Office of Pesticide Programs (OPP) lacks the information and tools necessary to provide adequate water quality protection. Moreover, the different procedures used by OPP and U.S. EPA's Office of Water (OW) to manage pesticides create regulatory problems that could be rectified through cooperation and some targeted revisions of regulations and procedures.

Formal participation in U.S. EPA pesticide regulatory processes began in late 1999 when the California Stormwater Quality Task Force (SWQTF)[2] recognized the importance of the U.S. EPA chlorpyrifos and diazinon re-registration processes to NPDES permit compliance for urban runoff management agencies. In 2002, the San Francisco Bay RWQCB assumed the leading role among California water quality agencies participating in U.S. EPA pesticide reviews. Following the lead of the SWQTF and San Francisco Bay RWQCB, several other state, regional, and local government agencies, including the State Water Resources Control Board, San Diego RWQCB, Central Valley RWQCB, City and County of San Francisco, Los Angeles County Sanitation Districts (LACSD), and Central Contra Costa Sanitary District (CCCSD), also provided information to U.S. EPA regarding one or more pesticide re-registration reviews.

[1] Strauss, Alexis, Acting Director, Water Division, U.S. EPA Region 9, letter to the California State Water Resources Control Board modifying California's list of impaired water bodies (303[d] list), May 12, 1999.
[2] Now the California Stormwater Quality Association (CASQA).

Scope of Activities

Together, California water quality agencies have participated in six U.S. EPA re-registration processes (diazinon, chlorpyrifos, lindane, atrazine, malathion, and carbaryl). In addition, agencies have provided information to U.S. EPA regarding five other decisions. The level of effort has depended on available funds, but has generally consisted of the following tasks:

- Identify and track U.S. EPA regulatory processes with implications for urban surface water quality.
- Assemble information to assist U.S. EPA in ensuring that environmental risk assessments rely on complete and accurate data (such as California monitoring data), include appropriate environmental concentration estimates, and use methods that fully reflect water quality regulatory program needs.
- Since data gaps are common, encourage U.S. EPA to obtain data from pesticide manufacturers needed to evaluate water quality impacts.
- Identify risk mitigation options for U.S. EPA consideration.
- Write up the key points for correspondence to U.S. EPA (usually one agency prepares a letter and shares it with other agencies).

Together, the SWQTF and the San Francisco Bay RWQCB have expended less than $50,000 to conduct these activities.

Effectiveness Evaluation

This evaluation of the outcomes of the California water quality agencies' efforts to improve pesticide regulatory processes involved review of U.S. EPA documents and interviews with U.S. EPA staff. U.S. EPA prepared written responses to California water quality agency comments on lindane and carbaryl. Informal discussions[3] and evaluation of revisions to risk assessments provided the remaining information in this section.

U.S. EPA staff believe that California water quality agency efforts are, in the words of one staffer, "definitely effective." Staff from OPP, OW, and Region 9 stated that they believe that the comments are valuable and recommend that water quality agencies continue to communicate information and recommendations to U.S. EPA.

Staff comments, agency actions, and U.S. EPA written materials show that the efforts of California water quality agencies have already begun to change the way U.S. EPA handles its pesticide registration process:

- OPP has an increased awareness of surface water quality issues. Both headquarters and Region 9 staff indicate that OPP is more willing to consider and address water quality issues. Written documents and responses to comments have changed in their tone—staff cite strong comments on a direct conflict presented in a lindane-related document as an important element of this change. In two re-registration processes (diazinon and carbaryl), OPP summaries and presentations directly reflect California water quality agencies' comments.[4]

[3] Comments are not attributed to specific individuals so as to avoid any awkwardness resulting from their frank comments.
[4] The wording of water quality agency comments was incorporated into the OPP documents.

- OPP has made some changes in the content of its pesticide environmental risk assessments. For example, the most recent draft risk assessment for a pesticide with significant urban uses (carbaryl) reported U.S. Geological Survey National Water Quality Assessment (NAWQA) and California surface water data and included a section on urban runoff. In the revised carbaryl risk assessment, U.S. EPA highlighted the data gaps and risk assessment shortcomings regarding water quality that California water quality agencies identified in their comments. None of these elements were present in the first risk assessment (for chlorpyrifos) that California water quality agencies commented on (the first draft of which ignored urban surface waters).

- OPP has begun to develop new methods to address water quality comments. For example, in the lindane re-registration documents, OPP conducted its first ever sewage discharge analysis for a pesticide. Although OPP believes that currently available models are incapable of estimating surface water pesticide concentrations from urban uses,[5] OPP staff and contractors have informally noted that their model development plan list includes urban runoff modeling, but this has not yet become a top priority.

- OPP and OW have initiated senior-level coordination meetings to work on pesticides and water quality. Prior to receiving California water quality agency comments, U.S. EPA senior managers had not been aware of the discrepancies between OPP procedures and OW water quality criteria. In response to California water quality agency comments, they have directed staff to flesh out major issues—for example, how OPP risk assessments impact U.S. EPA responsibilities under the Clean Water Act.[6] The Atrazine Registration Eligibility Decision (RED) included an appendix listing differences between OW and OPP risk assessment methods.

- U.S. EPA Region 9 has enhanced coordination between its Water Division and Pesticides Section. This includes the hiring of a regional Pesticides Program Manager for water.

- California water quality agencies have made significant progress toward making water agencies partners in the pesticide regulatory process. For years, state pesticide and agriculture agencies have been viewed as regulatory partners by OPP. Recently, U.S. EPA staff have indicated informally that the view of state water agencies is starting to change into that of another regulatory partner.

The ability to evaluate re-registration process outcomes is limited at this time, because California water quality agencies have only participated in two complete pesticide re-registration processes (and outcomes are affected by many scientific and political factors unrelated to water quality). The outcomes may eventually reveal the U.S. EPA reaction to water quality agency comments. Table 1 summarizes the outcomes of the relevant pesticide re-registration processes. Some favorable outcomes, like the termination of most urban uses of diazinon and chlorpyrifos, were probably not a direct result of California water quality agency comments. However, other outcomes were. Notable among the positive outcomes directly resulting from water quality agency comments are the prohibition of chlorpyrifos applications in storm drain manholes, modification of the national lindane water quality criterion, and the commitment to determine how OPP risk assessments impact U.S. EPA responsibilities under the Clean Water Act.

[5] U.S. EPA OPP, Memorandum: Response to Comments on the EFED Risk Assessment Chapter in Support of the Registration Eligibility Decision (RED) on Carbaryl, March 21, 2003.
[6] *Ibid*.

In a typical U.S. EPA regulatory process, the agency receives many comments from industry, a few comments from environmental groups, and an occasional agency comment. When the process is controversial (like for diazinon and chlorpyrifos), U.S. EPA receives numerous comments from the general public. In many of the regulatory processes, California water quality agencies were the only government agencies that submitted comments. Table 2 summarizes the comments received in the relevant U.S. EPA processes. The only other state or local agencies that submitted comments in any of the processes were state agricultural agencies or agricultural cooperative extensions.

Since OPP spends several years preparing each risk assessment and procedures are complex, changes in risk assessment procedures occur very slowly. In this context, it is fair to say that significant progress has been made in the last three years. Many important changes are still needed—for example:

- OPP and OW still do not use the same values to define allowable pesticide levels in surface waters.
- OPP has acknowledged the need to conduct urban runoff modeling of pesticides, but has not yet developed tools to conduct such modeling.
- OPP does not address the environmental effects of inert ingredients in individual pesticide products as those products are registered.
- OPP does not obtain from all pesticide manufacturers all the chemical analysis methods and data needed to evaluate water quality impacts, including the minimum aquatic toxicity data necessary to develop acute and chronic water quality criteria following U.S. EPA guidelines.[7]
- OPP could more thoroughly consider alternatives and other risk mitigation options when registering pesticides.

Comments from U.S. EPA staff indicated that U.S. EPA is unlikely to make meaningful changes to address these problems without continued pressure from entities like California water quality agencies.

Planned U.S. EPA Pesticide Re-Registration Schedule

A schedule of upcoming activities relevant to urban surface water quality is attached. U.S. EPA will be reviewing the registrations of most common diazinon and chlorpyrifos replacement products by August 2006. These re-registrations are critically important to water quality, as insecticides entering the market to replace urban uses of diazinon and chlorpyrifos may cause surface water toxicity.[8] The most important pesticides planned for review during the remainder of 2003 and early 2004 are carbaryl, malathion, and cypermethrin. Cypermethrin is notable because U.S. EPA is treating it as the model for all pyrethroids.

Recommendations

The most cost-effective approach to protecting surface water from pesticide-related toxicity is to prevent pesticide uses that have significant potential to cause water quality impairment. The most significant opportunity to prevent problem pesticide uses is the U.S. EPA pesticide re-registration

[7] U.S. EPA, Office of Research and Development, *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses*, 1985.
[8] TDC Environmental, *Insecticide Market Trends and Water Quality Implications*, report prepared for the San Francisco Estuary Project and the San Francisco Bay RWQCB, April 2003.

process; it is the only ongoing process that combines an evaluation of the water quality impacts of pesticides with the regulatory authority to terminate any use that causes significant impacts.[9] Integrating water quality into U.S. EPA pesticide re-registration reviews will be efficient and effective for both California water quality agencies and U.S. EPA—and will protect water quality in all California urban areas. Specific recommendations include the following:

- Continue to provide U.S. EPA with information to prevent potential water quality problems associated with urban pesticide use. Insecticides entering the market to replace urban uses of diazinon and chlorpyrifos may cause surface water toxicity.[10] Most of these insecticides will be reviewed by U.S. EPA by 2006.
- Facilitate involvement of other California water quality agencies in Federal urban pesticide regulatory processes that may affect water quality. In particular, an opportunity exists to enhance the value of the program by improving teamwork with entities with similar interest (particularly CASQA, Tri-TAC,[11] and individual storm water programs, sewer agencies, and municipalities).
- Consider participating in public forums (such as national advisory committees, and national conferences) to enhance nationwide understanding of managing urban pesticides to prevent surface water quality programs.
- Identify practical methods to address the environmental effects of all ingredients in individual pesticide products as those products are registered. U.S. EPA particularly needs methods to model runoff of pesticides from urban areas; such models can probably be developed on the basis of existing urban runoff modeling tools.

[9] California's Department of Pesticide Regulation has the authority to terminate any pesticide use that impairs water quality, but must initiate a special re-evaluation process to obtain data and evaluate water quality impacts.
[10] TDC Environmental, *op cit.*
[11] Tri-TAC is a technical advisory committee on state and Federal regulatory issues affecting publicly owned treatment words that is jointly sponsored by the League of California Cities, the California Association of Sanitation Agencies, and the California Water Environment Association.

Table 1. Summary of Outcomes of California Water Quality Agency Participation in U.S. EPA Pesticide Re-Registrations

Topic	Stage	Primary Comments	Outcome
Chlorpyrifos	Draft Risk Assessment	SF Bay RWQCB 1. Did not evaluate ecological significance of pesticide in urban discharges (particularly residential lawn, ornamental, and structural uses) 2. Incomplete data set for ecological risk assessment 3. Data exists for streams in Alameda County SWQTF 1. A comprehensive analysis of surface water impacts is needed 2. The risk assessment needs to be expanded to include all urban uses 3. Structural pest control uses, including termiticide uses, need to be assessed for surface water impacts 4. Formulations need to be analyzed for potential to cause surface water problems 5. Surface water concentrations need to be estimated appropriately 6. The level of concern should be defined by comparing estimated environmental concentrations to water quality criteria 7. For surface waters, the appropriate toxicity characterization involves use of office of water standard methods and policies 8. Cumulative impact analysis is needed 9. The risk assessment needs to recognize the potential environmental importance of dissolved chlorpyrifos in storm water runoff 10. More information is needed to evaluate the environmental significance of the degradate TCP in surface water 11. Many analyses important to the re-registration process are not included in the risk assessment CCCSD 1. No evaluation of sewer discharges 2. Appropriate toxicity characterization involves use of office of water standard methods and policies City & County of San Francisco 1. Concerned about indoor and institutional uses	Most urban uses of chlorpyrifos to be phased out (primarily for human health reasons); significantly expanded recognition of surface water quality issues in subsequent risk assessments (notably diazinon and carbaryl)

Table 1. Summary of Outcomes of California Water Quality Agency Participation in U.S. EPA Pesticide Re-Registrations (Continued)

Topic	Stage	Primary Comments	Outcome
Chlorpyrifos (continued)	Revised Risk Assessment & Risk Mitigation	SF Bay RWQCB 1. Phase out schedule too long 2. Concern about potential surface water toxicity from remaining urban and agricultural uses 3. Request cumulative ecological risk assessment for organophosphorous pesticides 4. Alternative pest control methods could cause surface water toxicity 5. Identify and more vigorously publicize less-toxic or reduced-risk pest prevention and control methods 6. Require registrants to measure discharges from application sites 7. Revise the pesticide registration/re-registration process to foster and require product stewardship	Chlorpyrifos phase-out information listed only traditional chemical alternatives, but diazinon phase-out information promoted botanicals and reduced-risk pesticides
	FR Notice changing manufacturer agreement	SF Bay RWQCB 1. Request to terminate all manhole uses	Label language was added prohibiting use in storm drain systems (manhole applications) (sewer manhole uses retained in response to manufacturer and sewer agency requests)
	Interim RED	SF Bay RWQCB 1. Potential impacts from continued urban uses of chlorpyrifos (particularly sewer manhole uses) 2. Unresolved impacts to endangered species 3. Potential request for continuation of termiticide uses	No response to date (uncertain whether further changes will occur)

Table 1. Summary of Outcomes of California Water Quality Agency Participation in U.S. EPA Pesticide Re-Registrations (Continued)

Topic	Stage	Primary Comments	Outcome
Diazinon	Draft Risk Assessment	SWQTF 1. The major findings of the risk assessment with regard to surface waters are correct and are strongly supported by available data 2. A comprehensive analysis of surface water release sources would strengthen the risk assessment and provide information for risk management 3. A comprehensive analysis of diazinon formulations for potential to cause surface water problems would strengthen the risk assessment and provide information for risk management 4. The risk assessment should be expanded to include all urban uses that may be re-registered 5. Quantitative use estimates should be updated to reflect doubling of sales since estimates were made 6. More information is needed to evaluate the environmental significance of diazinon degradates in surface waters 7. The level of concern should be defined by comparing estimated environmental concentrations to water quality criteria 8. For surface waters, the appropriate toxicity characterization involves use of office of water standard methods and policies 9. A cumulative risk analysis is needed 10. An analysis of alternatives is needed 11. Many analyses important to the re-registration process are not yet complete	Phase-out of most urban uses (primarily based on human health concerns)

Table 1. Summary of Outcomes of California Water Quality Agency Participation in U.S. EPA Pesticide Re-Registrations (Continued)

Topic	Stage	Primary Comments	Outcome
Diazinon (continued)	Revised Risk Assessment & Risk Mitigation	SF Bay RWQCB 1. Restrict agricultural diazinon applications in a manner sufficient to reduce ecological risks to acceptable levels 2. Require registrants to demonstrate with certainty that adopted measures will effectively minimize all ecological risks 3. Consider ecological risks when undertaking the planned cumulative risk assessment for pesticides with similar modes of action 4. Commit substantial resources to promote effective less-toxic strategies for agricultural pest management 5. Accelerate the phase out of diazinon in urban areas 6. Widely publicize less-toxic pest management strategies for urban areas	Phase-out of aerial spraying, granules, reduce application frequency and rates for many crops (including dormant spray applications linked to impacts on Bay and Delta); cumulative risk assessment only considered human health (all that is required under the law)—apparently no plan to evaluate cumulative environmental risks
	Interim RED	SF Bay RWQCB 1. Certain agricultural uses may continue to impair water quality 2. Nurseries and cut flowers may not need diazinon 3. Economic analysis of agricultural uses is incomplete 4. Trunk wrap uses may occur in urban areas 5. Effects of diazinon use on endangered species are unresolved 6. Stakeholders need to be involved in next steps 7. New problems may arise from diazinon use changes	No specific responses to date, but U.S. EPA staff have indicated that revisions to the Interim RED are possible.

Table 1. Summary of Outcomes of California Water Quality Agency Participation in U.S. EPA Pesticide Re-Registrations (Continued)

Topic	Stage	Primary Comments	Outcome
Lindane	Draft Risk Assessment	Did not comment	N/A
	Revised Risk Assessment & Risk Mitigation	SF Bay RWQCB 1. U.S. EPA rejects its own water quality criteria 2. Risk assessment neglects major sources (head lice and scabies treatments) LACSD 1. U.S. EPA rejects its own water quality criteria 2. Risk assessment neglects major sources (head lice and scabies treatments) 3. Many other comments (too many to list individually)	Conducted first ever analysis of surface water quality impacts from sewer discharge of a pesticide (in response to LACSD comments) Revised approach to include pharmaceutical uses of lindane
	RED	SF Bay RWQCB 1. U.S. EPA proposes to reject its own adopted surface water quality standards—this precedent threatens future compliance for all surface water dischargers 2. U.S. EPA offices must cooperate to enforce water quality standards 3. The methodology used by U.S. EPA OPP to estimate wastewater treatment plant effluent lindane concentrations and to evaluate the environmental importance of those discharges is not appropriate for an assessment of the environmental risks of lindane use (an alternative approach was recommended)	National Water Quality Criterion revised (unclear if U.S. EPA plans to amend California Toxics Rule)

Table 1. Summary of Outcomes of California Water Quality Agency Participation in U.S. EPA Pesticide Re-Registrations (Continued)

Topic	Stage	Primary Comments	Outcome
Malathion	Draft Risk Assessment	Did not comment	N/A
	Revised Risk Assessment & Risk Mitigation	SF Bay RWQCB 1. Eliminate residential turf use 2. Eliminate malathion use on buildings and pavement 3. Establish storage limits for malathion products 4. Require buffer zones to reduce off-target drift to aquatic habitats 5. Eliminate over-the-counter uses 6. Require registrants to measure discharges from application sites 7. Require registrants to demonstrate that no malathion product will cause receiving water quality to exceed aquatic life criteria 8. Require registrants to demonstrate with certainty that any adopted mitigation measures will reliably reduce risks to acceptable levels 9. Greatly expand efforts to identify and publicize less toxic and reduced-risk pest management methods	Responses and Interim RED are not yet available.
Atrazine	Draft Risk Assessment	Did not comment	N/A
	Revised Risk Assessment & Risk Mitigation	SF Bay RWQCB 1. Effect level is above proposed water quality criteria 2. Risk mitigation needs to address endangered species (recent research identifies potentially significant issues) 3. No water resource modeling for urban pesticide uses 4. Cooperation needed between U.S. EPA offices	OPP and OW may coordinate re-registration and water quality criteria finalization. Registrant is required to conduct an ecological monitoring program and to make changes to mitigate water quality impacts. U.S. EPA Science Advisory Board is holding a special meeting to evaluate recent research identified in comments.

Table 1. Summary of Outcomes of California Water Quality Agency Participation in U.S. EPA Pesticide Re-Registrations (Continued)

Topic	Stage	Primary Comments	Outcome
Carbaryl	Draft Risk Assessment	SF Bay RWQCB 1. Exposure assessment needs to consider urban surface waters 2. Analysis does not reflect anticipated increase in use 3. Risk assessment underestimates aquatic risks 4. Evaluation of risks to endangered species is incomplete 5. Risks from degradates needs evaluation 6. Data gaps need to be filled 7. Cooperation needed between U.S. EPA offices SWQTF comments 1. Unnecessary expenditure of significant amounts of public funds needs to be avoided 2. Identify and more vigorously publicize less-toxic or reduced-risk pest prevention and control methods 3. Modify the data requirements for registration to require registrants to measure discharges from application sites 4. Revise the pesticide registration/re-registration process to foster and require product stewardship	Interim RED not yet available. Revised risk assessment summary and response to comments directly addressed California water quality agency comments. Acknowledged importance of urban runoff modeling. Reviewed models for pesticides in urban runoff and determined that no existing model is capable of estimating pesticide concentrations in surface waters from urban use. Promised to determine how OPP risk assessments impact U.S. EPA responsibilities under the Clean Water Act. Explained method differences between OPP and OW relevant to comments. Identified additional uncertainties and data needs based on comments.

Table 2. Number of Comments on U.S. EPA Water Quality Regulatory Actions

Topic	Stage	Comments Received	CA WQ Agency commenters	Notes
Chlorpyrifos	Draft Risk Assessment	More than 4,000	SWQTF* CCSF SFBRWQCB CCCSD	U.S. EPA comment summary does not mention any public agency comments
	Revised Risk Assessment & Risk Mitigation	No data	SWQTF*	
	FR Notice changing manufacturer agreement	No data	SWQTF* SBRWQCB Tri-TAC	
	Interim RED	No data	SWQTF* SFBRWQCB	
Diazinon	Draft Risk Assessment	More than 500	SWQTF* ACCWP CCCSD	U.S. EPA comment summary specifically lists CA water quality agencies.
	Revised Risk Assessment & Risk Mitigation	About 900 About 700 expressed concern about bird kills About 200 from growers/lawn care operators/homeowners said diazinon is essential	SWQTF* SFBRWQCB CVRWQCB SWRCB SFEI	
	Interim RED	21 3 Agency 17 Industry 1 Env. Group	SFBRWQCB* BASMAA CCSF	All three agency comments were from CA water quality agencies
Lindane	Revised Risk Assessment & Risk Mitigation	No total 4 Agency 3 Industry 7 Env. Group Many Individuals	SFBRWQCB LACSD*	
	RED	No total 2 Agency 4 Industry 5 Env. Group Many Individuals	SFBRWQCB LACSD*	Only agency comments were from CA water quality agencies
Malathion	Revised Risk Assessment & Risk Mitigation	No data	SFBRWQCB SWQTF*	
Atrazine	Revised Risk Assessment & Risk Mitigation	No data	SFBRWQCB*	

Table 2. Number of Comments on U.S. EPA Water Quality Regulatory Actions (Continued)

Topic	Stage	Comments Received	CA WQ Agency commenters	Notes
Carbaryl	Draft Risk Assessment	28 5 Agency 13 Industry 4 Env. Group 6 Individuals	SFBRWQCB* SWQTF	
Cumulative O.P. Pesticides	Draft Risk Assessment	No data	SWQTF*	
OPP Strategic Plan	Input for 2002	13 1 Agency 6 Industry 3 Env. Group 3 Individuals	SFBRWQCB*	Only agency comment from SFBRWQCB
Methodology for lower toxicity chemicals	Input (not regulation)	11 1 Agency 8 Industry 2 Env. Group	SFBRWQCB*	Only agency comment from SFBRWQCB
Endangered Species Consent Decree	Decree issuance	No data	SFBRWQCB*	Consent decree approved

*Entity that took the lead in drafting comments.

U.S. EPA Pesticide Re-Registration Schedule

Pesticides of Urban Surface Water Quality Interest

Pesticide	Preliminary Risk Assessment	Revised Risk Assessment	Registration Eligibility Decision*	Cumulative Group	Notes
Diazinon				Organophosphates	IRED revisions possible
Chlorpyrifos				Organophosphates	
Lindane				None	
Atrazine**				Triazines	Revised IRED due by 10/31/03
Malathion			Planned by 6/30/03	Organophosphates	
Carbaryl			Due by 6/30/03	Carbamates	
Diuron			Planned by 6/30/03	None	Common in urban surface water
Creosote			Planned by 6/30/03	None	Antimicrobial Division
Cypermethrin			Planned by 6/30/04	Not determined	Model for pyrethroids
Fenvalerate			Planned by 6/30/04	Not determined	Esfenvalerate is one isomer
2,4-D			Planned by 6/30/04	None	Common in urban surface water
Permethrin			Expect by 8/06	Not determine	Originally scheduled for FY 2003
Piperonyl Butoxide			Expect by 8/06	None	
Pyrethrins			Expect by 8/06	Not determined	

Scheduled for tolerance review only (no environmental risk assessment): bifenthrin, cyfluthrin, esfenvalerate, imidacloprid, lambda-cyhalothrin
Other upcoming items of potential urban interest: pentachlorophenol and CCA re-registration; Endangered Species review process rulemaking
Upcoming items of potential agricultural interest: PCNB (Pentachloronitrobenzene), Dacthal (Chlorthal-Dimethyl), Molinate

*For those that are part of a cumulative group, this is an Interim Registration Eligibility Decision that will be finalized later
**SAB hearing on aquatic species effects this summer; final water quality standard due in fall 2003
Note: "Due by" means that this is required by a USEPA consent decree with NRDC

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