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Attn: Docket No. EPA-HQ-OPP-2005-0558

### **Docket ID Number EPA-HQ-OPP-2005-0558: Coppers Risk Assessments**

The purpose of this letter is to comment on EPA's risk assessments for copper-containing pesticides (coppers), which were made available for public comment on January 25, 2006 (71 FR 4133). Tri-TAC is concerned that the risk assessments do not evaluate the potential adverse impacts associated with sewer discharges of coppers, particularly from copper-containing root killing agents (root killers) and pool products. Tri-TAC also requests an opportunity to comment on the revised risk assessments and the proposed mitigation measures for coppers prior to reregistration. As background, Tri-TAC is a technical advisory group for Publicly Owned Treatment Works (POTWs) in California. It is jointly sponsored by the California Association of Sanitation Agencies, the California Water Environment Association, and the League of California Cities. The constituency base for Tri-TAC collects, treats, and reclaims more than two billion gallons of wastewater each day and serves most of the sewered population of California.

### **Introduction**

Copper, which occurs in natural waters, is a minor nutrient for both plants and animals at low concentrations but is toxic to aquatic life at concentrations only slightly higher.<sup>1</sup> EPA regulates copper as a priority pollutant under the Clean Water Act (CWA); therefore, POTWs have stringent copper effluent limits in their National Pollutant Discharge Elimination System (NPDES) permits. POTWs have already implemented pollution prevention programs and local limits to reduce copper discharges into sewer systems from industries. These programs have been very successful in reducing POTW influent and effluent copper concentrations. However, POTWs do not have the authority to regulate the use of coppers.

<sup>1</sup> EPA, *Ambient Aquatic Life Water Quality Criteria for Copper*, January 1985 (EPA 440/5-84-031).

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In addition to various agricultural uses and direct surface water uses, coppers are registered for use as a root killer and as an algaecide for use in swimming pools, spas, fountains, residential fish ponds, and other decorative water bodies (hereon collectively referred to as pools). Although the amount of active ingredient used in these applications is small compared to the amount used for agricultural and surface water uses, the discharge of coppers to sewers poses unique risks that need to be considered. While EPA's risk assessments for coppers consider potential adverse water quality impacts arising from agricultural and surface water uses, they do not consider such impacts from coppers discharged into the sewer system. Tri-TAC requests that EPA conduct an Aquatic Exposure, "Down the Drain Assessment", similar to the analysis conducted for permethrin<sup>2</sup>, to evaluate the potential impacts to aquatic organisms from the use of copper-containing root killers and pool products. If this assessment predicts adverse effects, Tri-TAC requests that EPA require mitigation measures as a condition of reregistration.

### **Publicly Owned Treatment Works**

As background, coppers in root killers and pool products typically are discharged into a municipal sewer system and will flow to a POTW. At the POTW, coppers can potentially interfere with treatment plant operation, ability to recycle reclaimed water and biosolids, and compliance with NPDES permit effluent limits. Coppers entering POTWs will partition onto biosolids, which are frequently land applied or used as soil amendments. In addition, some copper will remain in the water. Recycled water is used in certain locations for irrigation and/or purposes linked to human consumption (e.g., groundwater aquifer recharge). These other pathways for human and environmental exposure to coppers should be considered in the revised risk assessments.

Another important consideration is the ability of POTWs to comply with the requirements in NPDES permits. In addition to the adverse environmental impacts, non-compliance with CWA requirements can be extremely costly for POTWs. Costs are incurred for identifying the source of the pollutants causing non-compliance, source control to reduce impacts of the pollutants, and construction, operation, and maintenance costs to upgrade POTWs with advanced treatment to remove pollutants that cannot be adequately reduced with source control. Also, when surface water bodies become impaired by copper, POTWs discharging to the water bodies can be impacted through additional requirements established as part of Total Maximum Daily Loads (TMDLs) set for the water bodies. POTWs are also subject to mandatory minimum penalties for NPDES exceedences and possible legal action. This is particularly important in areas

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<sup>2</sup> EPA, *EFED Revised Risk Assessment for the Reregistration Eligibility Decision on Permethrin After Error Corrections Comments from the Registrant, Phase I*, July 12, 2005.

such as the arid West, where some POTWs create effluent dominated discharges, by providing essentially the only source of water to a surface water body during dry periods. The NPDES permits for these facilities do not include a stream dilution factor, so these POTWs must meet stringent NPDES permit limits at the “end-of-the-pipe.”

### **Coppers Discharged to Sewer Systems**

Homeowners and businesses use copper-containing root killers by putting them down their toilets to kill tree roots that invade soil pipes and cause plumbing backups. Studies by sanitation agencies suggest these coppers have been found to contribute approximately 5-12% of the total amount of copper received by POTWs. Copper-containing root killers are generally sold in “crystal” form. The pebble-size particles are intended to cling to roots in the pipes and kill them over time, by contact. Manufacturers typically recommend a dose of two pounds twice a year, or routine “maintenance” treatment of a half pound per month. Two pounds of root killer contains approximately half a pound of pure copper, which is enough to contaminate 20 million gallons of water above the limit set by regulatory agencies.

Coppers can also be applied to pools. Subsequent to application, this copper may be discharged to surface waters when the pool is emptied, during overflows in rainy periods, or when filter backwash is discharged. Typically pools are drained to the sewer or the storm drain every several years in order to perform maintenance. Although many older pools drain their wastewater to lawns and storm drains, newer pools are typically plumbed to sewer cleanouts and thus drain their wastewater to the sewerage system<sup>3</sup>. Discharge to a storm drain releases the water (and any associated copper) directly to surface water, typically in a matter of minutes. Discharge to a sewer system sends the water (and any associated copper) to a POTW, which in turn, discharges to surface water. Individual NPDES permits are not required for pool discharges (including residential swimming pools). Although such discharges could cause or contribute to violations of NPDES permits, controlling such discharges is difficult if not impossible, particularly from residences.

### **Restrictions on Copper-Containing Root Killers**

In February 1994, AB 3394 was introduced in the California Assembly to address excessive discharges of copper into bays, estuaries, and inland surface waters. The bill would have allowed the California Regional Water Quality Control Boards (Regional Water Boards) to prohibit the sale, use, and discharge of copper-containing root killers

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<sup>3</sup> County Sanitation Districts of Los Angeles County, *Chloride Source Identification/Reduction, Pollution Prevention, and Public Outreach Plan*, November 2005.

and copper-containing cooling water additives, once the Regional Water Boards determined that these compounds 1) interfered with obtaining water quality objectives or 2) prevented compliance with NPDES permits. The sponsors of the bill assumed that the Regional Water Boards have the authority to regulate the sale or use of pesticides on a local basis. However, the Department of Pesticide Regulation (DPR) has exclusive authority to regulate the sale and use of pesticides in California and customarily does so through administrative rather than legislative processes.<sup>4</sup> After more than a year of technical studies and public meetings, in December 1995 DPR adopted emergency regulations prohibiting the sale and use of copper-containing root killers in nine San Francisco Bay Area counties. The prohibition on the sale and use of copper-containing root killers became permanent in 1996 for these nine counties. Data from residential trunk sewer sampling conducted in 1996 and 1997 in the San Francisco Bay Area shows nearly a 25% reduction in copper levels as compared to 1995. While other activities may have contributed to this reduction, it is primarily attributed to the sales ban on copper-containing root killers.

However, only nine counties in California have a prohibition on the sale and use of copper-containing root killers. Tri-TAC is anticipating more stringent copper effluent limits in southern California since several local water bodies are listed on the CWA 303(d) list of impaired water bodies.<sup>5</sup> It is essential that EPA implement adequate risk management strategies during reregistration to prevent future problems for POTWs in California. The risk benefit standards of the Federal Insecticide, Fungicide, and Rodenticide Act require EPA to ensure that a pesticide is used in such a manner that mitigation under the CWA is minimal or unnecessary. Therefore, EPA should require mitigation measures for all exceedances of water quality criteria (or equivalent values calculated for the purpose of the risk assessment) and all expected incidents of non-compliance by NPDES permit holders.

## **Risk Assessments**

The ecological risk assessment<sup>6</sup> identifies significant risks for aquatic organisms. It states on page 13 under Risk Conclusions that “Based on the data available and tools used in this assessment, current application practices for copper compounds appear to pose risk to all taxa quantitatively evaluated, except terrestrial plants. This risk stems, in

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<sup>4</sup> California Environmental Protection Agency, *Evaluation of Copper- and Tributyltin-containing Compounds*, August 1995.

<sup>5</sup> Section 303(d) of the CWA requires the identification of water bodies that do not meet, or are not expected to meet, water quality standards, or are considered impaired. The affected water body, and associated pollutant or stressor, is then prioritized in the 303(d) list. The CWA further requires the development of a TMDL for each listing. (<http://www.waterboards.ca.gov/centralvalley/programs/tmdl/#303d>)

<sup>6</sup> EPA, *Ecological Risk Assessment for Reregistration Copper-Containing Pesticides (Case#0636 Copper Sulfate, Case#0649 Group II Copper Compounds, Case#4029 Copper Salts, and Case#4025 Copper and Oxides (Cuprous oxide))*, October 24, 2005.

part, from the amount applied and frequency of application. Copper can be toxic in the parts-per-billion (ppb) range for aquatic organisms.”

The harm to aquatic life is predicted even though the risk assessment understates the risks to aquatic organisms. It does not assess risks to salt water organisms, even though salt water organisms are known to be more sensitive to copper than fresh water organisms and copper is used in locations that drain or discharge to salt water bodies (e.g. storm drains and POTWs). In addition, it does not compare estimated environmental concentrations to water quality criteria. Values used to assess risk are higher than water quality criteria, are based on median (rather than worst case) conditions, and are assessed for time periods that are generally longer than appropriate for water quality criteria. Tri-TAC requests that EPA address these concerns in the revised risk assessments.

Tri-TAC is aware of the fast-approaching August 2006 deadline for the reassessment of tolerances for pesticides with food uses that is required by the Food Quality Protection Act. Since coppers for root killing and pools are not food uses, Tri-TAC suggests delaying the reregistration of these coppers until after this deadline to give EPA enough time to perform a thorough “down-the-drain” assessment and, if necessary, develop mitigation measures. In addition, this will allow EPA to evaluate “conventional” uses (root-killing) and “antimicrobial” uses (pools) together in one “down-the-drain” assessment, which is needed since NPDES permits do not distinguish between conventional and antimicrobial uses. However, due to potential adverse effects to aquatic life, possible mandatory minimum penalties for NPDES exceedences, and the potential for legal action, Tri-TAC requests that the “down-the-drain” assessment be performed during reregistration and not deferred until registration review.

In conclusion, sewerage agencies need EPA’s assistance to protect surface waters from contamination from coppers. As previously discussed, POTWs are required to meet NPDES permits limits but do not have the authority to regulate domestic sources of pesticides. Tri-TAC requests that EPA conduct an Aquatic Exposure, “Down-the-Drain” Assessment, similar to the analysis performed for permethrin, to evaluate potential aquatic impacts from the use of coppers in root killers and pool products. If the model shows that acute and/or chronic levels of concern for aquatic organisms are exceeded from these uses, Tri-TAC requests that EPA propose mitigation measures for coppers during reregistration.

### **Contact Information**

Tri-TAC appreciates this opportunity to comment on the risk assessments for coppers. If you have any questions about this letter or require additional information, please contact

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Ms. Preeti Ghuman by phone at (562) 699-7411, extension 2904, or by e-mail at [pghuman@lacsdsd.org](mailto:pghuman@lacsdsd.org).

Sincerely,



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