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Transmitted via Electronic Mail

Re: California Department of Pesticide Regulation No. 16-005, Copper-Based Antifouling Paint and Coating Products

Dear Ms. Irokawa-Otani,

On behalf of San Francisco Baykeeper, San Diego Coastkeeper, and Los Angeles Waterkeeper (collectively, "Waterkeepers"), we respectfully submit these comments for consideration by the California Department of Pesticide Regulation ("DPR") regarding its proposed adoption of 3 California Code of Regulations section 6190 concerning copper-based antifouling paint and coating ("AFP") products. Waterkeepers represent thousands of members and supporters who use and enjoy the environmental, recreational, and aesthetic conditions of California's waters.

DPR's proposed action would require registrants of all new copper-based AFP products to submit copper leach rate data and would establish a maximum allowable copper leach rate of 9.5 µg/cm^2/day that will apply to both new and existing copper-based AFP products labelled for use on recreational vessels. The purpose of the proposed regulation is to ensure that copper levels in California's waters, in particular marinas, meet applicable water quality standards, including the standards set in the California Toxics Rule ("CTR"). It is unclear, however, whether this proposed leaching standard would effectively reduce copper contamination of surface waters consistent with CTR standards.

Waterkeepers urge DPR to provide supporting evidence that the proposed action will in fact reduce toxicity in copper-impaired marinas and other surface waters, consistent with legal requirements. Specifically, DPR should revise the proposed regulations to do the following: (1) ensure that the leach rate standard is calculated appropriately to reduce levels of copper in impaired waters; (2) expand the application of mean copper release rate limits to AFP products labelled for commercial vessels; (3) consider reasonable alternatives that are more protective of California's waters; and (4) require application of appropriate and effective best management practices to further reduce impacts from copper-based AFP products.

I. DPR Has a Duty to Reduce Discharges of Copper from AFP Products Sufficiently to Protect California's Waters

DPR, along with numerous other agencies, has determined that copper-based AFPs endanger the environment and have serious adverse effects while also having reasonable, effective, and less destructive alternatives. According to the Senate Committee on Environmental Quality's report on Assembly Bill 425 ("Senate CEQ Report"), most of the marina basins in California are listed as impaired for copper by the State Water Resources Control Board ("SWRCB"). S. Comm. on Envtl Quality, Bill Analysis on AB 435 (Cal. 2013-2014), p. 4.[1] Waterkeepers acknowledge the need for AFPs to increase vessel efficiency and reduce harmful pollutants associated with vessel fuel usage and engine maintenance. However, AFP usage must be balanced against its toxicity to marine aquatic life. According to the Senate CEQ Report,

> Elevated levels of copper are toxic in aquatic environments and may adversely affect fish, invertebrates, plants, and amphibians. Acute toxic effects may include mortality of organisms; chronic toxicity can result in reductions in survival, reproduction, and growth. The early life stages of fish, bivalves, and echinoderms are especially vulnerable to copper contamination. Copper tends to accumulate in sediment threatening aquatic life. Copper in the sediment often needs to be removed through dredging, which can be very costly.

Id. Furthermore, there are 84 California water bodies that are impaired for copper, and 89 coastal marinas in those water bodies contain boats painted with copper-containing AFPs that supply "the vast majority of copper in salt and brackish waters." *Id*. (98% in the San Diego Yacht Basin, for example).

Several legal authorities require DPR to regulate pesticides to prevent harm to the environment, harm which includes the exceedances of water quality standards caused by copper-based AFPs:

- Food and Agricultural Code ("FAC") section 12824 requires DPR to "endeavor to eliminate from use in the state any pesticide that endangers the agricultural or nonagricultural environment . . .."

- FAC section 12825 allows the director of DPR to cancel or refuse to register pesticides that demonstrate "serious uncontrollable adverse effects," provide less value than the damage they cause to the environment, that are detrimental to vegetation, and "[f]or which there is a reasonable, effective, and practicable alternate material or procedure that is demonstrably less destructive to the environment."

[1] *Available at* http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_0401-0450/ab_425_cfa_20130617_172835_sen_comm.html.

- FAC section 14102 requires the director of DPR to "prohibit or regulate the use of environmentally harmful materials . . .. In so doing, he shall consider the effect of all such materials upon the environment, and shall take whatever steps he deems necessary to protect the environment."

- AB 425 was passed by the California Legislature specifically to respond to copper contamination caused by recreational vessels and to that end required DPR "to make recommendations for appropriate mitigation measures that may be implemented to protect aquatic environments from the effects of exposure to that paint if it is registered as a pesticide." AB 425 (Cal. 2013-2014) § 1.

Thus, DPR is required to "protect aquatic environments from the effects of exposure to" copper-based AFPs. As a result of this imperative, DPR must recommend conservative measures that do not rely on guesswork or rough modeling estimates to ensure such protection.

For these reasons, and as detailed below, Waterkeepers request that DPR consider stronger measures in pursuit of the legislature's instruction that it "protect aquatic environments" or risk further violations of Title 40, Code of Federal Regulations Part 131, or the CTR chronic water quality standard for copper. Less stringent regulations, such as those currently recommended by DPR, risk missing copper Total Maximum Daily Load compliance dates issued by regional water quality control boards.

II. DPR's Proposed Leach Rate Fails to Ensure Water Quality Standards Will Be Met.

DPR's proposed leach rate of 9.5 µg/cm^2/day is not sufficiently stringent to ensure that water quality standards will be met. DPR assumes that the 9.5 µg/cm^2/day leach rate standard is sufficiently protective only if specific practices are followed in conjunction with the use of paint that meets this standard. Specifically, DPR assumes that "in-water hull cleaners follow the California Professional Divers Association's best management practices method with soft-pile carpet and limit in-water hull cleaning to no more frequently than once per month."[2] Yet the proposed regulations do not require these practices or implement any measures that would encourage adherence to California Professional Divers Association's best management practices ("BMPs"). In fact, DPR states in its analysis of the regulation that it "does not have jurisdiction over the activities of in-water hull cleaners."[3] Thus, there is no assurance that the proposed leach standard is sufficient to meet water quality standards. DPR must either require these practices be implemented or reevaluate the standard to determine what leach rate is protective if these specific practices are not followed.

An external scientific review requested by DPR and arranged by the SWRCB iterated this criticism of the leach rate standard. External reviewer Dr. Gretchen K. Bielmyer-Fraser stated

[2] Initial Statement of Reasons and Public Report, Department of Pesticide Regulations, *available at* http://www.cdpr.ca.gov/docs/legbills/rulepkgs/16-005/16-005.htm, at p. 5.
[3] *Id*. As noted in more detail below, Waterkeepers do not agree with this interpretation of DPR's jurisdiction, and note here that DPR licenses many different types of pesticide applicators through training and licensure programs.

that a more conservative measure should be used to ensure protection of aquatic life. According to Dr. Bielmyer-Fraser, "[g]iven the stated uncertainties of the model, I would suggest using the model-derived leach rates without the adjustments for BMP practices and less frequent (monthly) hull cleaning as a more conservative and thus more protective measure for aquatic life."[4]

DPR's response stated that other conservative assumptions made these suggested changes redundant, but DPR did not adequately explain why the assumptions that "all dissolved copper is bioavailable" and "all ships are at berth" are equivalent to BMP practices and hull cleaning frequency. In fact, there is no rational quantitative connection provided. DPR must provide a quantitative evaluation in order to support a rational conclusion that the conservative, protective measurements recommended by Dr. Bielmyer-Fraser are, indeed, redundant.

Additionally, it is not clear whether the Marine Antifoulant Model to Predict Environmental Concentrations (MAM-PEC), used by DPR to establish copper leach rates as a basis for its regulation, considers instances where copper impairment is already occurring or if the model assumes unimpaired conditions. As previously mentioned, a significant proportion of marinas in California are copper-impaired. Supporting documentation does not indicate a sample baseline for the leach rate of currently available bottom coat paints and whether the proposed value will improve water and sediment quality. Additional information should be provided regarding model assumptions and whether the proposed action will reduce, impair, or maintain the status quo regarding copper concentrations and toxicity in copper-impaired marinas and surface waters.

III. DPR Should Extend Its Regulations to Products Labeled for Commercial Use Only.

DPR's regulations, as proposed, do not apply to copper-based AFPs labeled for commercial vessel use only. However, paint or coating products labeled only for use on commercial vessels should not be exempt from regulation. Copper-based AFPs are a pesticide whether labelled for or used on a commercial or recreational vessel. A pesticide for commercial use is still harmful to the environment as defined by FAC section 12824. While AB 425 only addresses recreational vessels, DPR is obligated to ensure that all uses of that pesticide are protective of the environment. FAC § 12824. Thus, the regulation should be expanded to include all copper-based AFPs.

Moreover, some proportion of products labeled for commercial use will be utilized on recreational vessels through mistaken application or willful misuse of an inappropriate AFP product. Such misuse may increase dramatically if DPR's copper-based AFP regulations are instituted and the only copper-based AFPs available are labeled for commercial use only. Yet DPR's regulation ignores all commercial sources, though such sources arguably fall under the legislature's instruction in AB 425 as paint that is used on recreational vessels whether or not that is the paint's intended use. Compliance with AB 425 requires that DPR consider and plan

[4] DPR Memorandum: Response to the External Scientific Peer Review Comments on DPR's Determination of the Maximum Allowable Leach Rate for Copper Antifouling Products (July 19, 2016), *available at* http://www.cdpr.ca.gov/docs/emon/surfwtr/caps/memo_reply_sprc.pdf.

for AFP products intended for commercial use that may be used on recreational vessels. DPR must also comply with FAC section 11501(e) by ensuring that AFP is properly labeled, appropriate for the use it is actually put to, and used in a manner consistent with the use for which it was labeled.

IV. DPR Must Revise its Alternatives Analysis.

DPR based its regulations solely on dissolved copper concentrations in saltwater and brackish water marinas that exceeded CTR copper water quality standards. DPR should have evaluated reasonable alternatives that were more stringent than the CTR copper water quality standard of 3.1 µg/L. A lower standard may well result in environmental benefits without significant added cost.

For instance, Washington State has initiated an alternatives assessment project which identified alternatives that include biocidal antifouling and foul release paints, as well as new non-paint non-biocide technologies. Studies such as the Washington State assessment project must be taken into account as part of DPR's basis for regulation and determination of the efficacy of mitigation measures.

All pesticides sold in California must be registered with DPR. FAC §§ 12811, 12993. DPR must consider factors that include health effects, the potential for environmental damage, "[t]he availability of feasible alternatives," and efficacy before a pesticide can be registered. 3 Cal. Code Regs. § 6158. Among DPR's responsibilities is that it must try to eliminate pesticides that are not "beneficial" for the purposes for which they are sold. FAC § 12824. DPR may cancel a registered pesticide "[t]he use of which is of less public value or greater detriment to the environment than the benefit received by its use" or for "which there is a reasonable, effective, and practicable alternate material or procedure that is demonstrably less destructive to the environment." FAC § 12825(b) & (c).

DPR has not established that it has considered all reasonable alternatives that would be more effective in addressing copper pollution in California marinas and harbors, and thus its alternatives analysis is inadequate.

V. DPR's Regulation Should Include Mandatory Mitigation Measures and Best Management Practices.

DPR acknowledges that BMPs can reduce water quality impacts from copper-based AFPs, yet DPR has not made any such BMPs mandatory. DPR is only suggesting voluntary BMPs, such as certification programs and vacuum sanding that could reduce the amount of copper from boat hulls in California waters. Additional potential mitigation measures could include labeling requirements or informational brochures on painted-hull maintenance and hull cleaning to be included with the purchase of AFPs, programs to increase boater awareness of alternatives to copper-based AFPs, and incentive programs to encourage vessel owners to use

those alternatives. DPR could also require special licensure and training that includes its suggested mitigation measures as a precondition to purchase of copper-based AFPs.[5]

Waterkeepers have observed that voluntary measures such as those proposed by DPR are often ineffective, especially when they involve steps that oppose the financial interests of the regulated industry, such as programs to encourage vessel owners to use different products. As a result, Waterkeepers recommend that DPR make some or all of the voluntary mitigation measures DPR has recommended mandatory.

The following mitigation measures were suggested by DPR itself and should be included, along with those measures already suggested by Waterkeepers, in the proposed regulation either through licensure requirements, labeling, or some other means:

- Require in-water hull cleaners to implement BMPs for in-water hull cleaning.
- Reduce in-water hull cleaning frequency to no more than once per month.
- Include painted-hull maintenance information as part of product labels.
- Develop for distribution hull maintenance brochures to be provided to boaters via boatyards at the time of painting.
- Increase boater awareness and acceptance of copper AFP alternatives.
- Foster new incentive programs and continue support for existing programs to convert copper-painted boat hulls to those painted with alternatives.
- Consider site-specific objectives (SSOs) for copper for certain marinas or harbors.

DPR Memo on Leach Rate (Jan. 30, 2014), p. 3-4.[6]

The adoption of less abrasive cleaning techniques, especially through training and licensure for bottom cleaners, would yield immediate results, but has not been considered by DPR as a mandatory mitigation measure. This despite DPR's own conclusion that the use of "a relatively abrasive 3M pad [] for scrubbing . . . is not considered to be a best management practice (BMP) and therefore we consider this to be a worst case cleaning scenario." DPR Memo

[5] In fact, according to its website, DPR licenses many different types of pesticide applicators, including titles such as Agricultural Pest Control Adviser, Pest Control Aircraft Pilot Certificate, Pest Control Dealer Designated Agent License, Qualified Applicator Certificate, Maintenance Gardener Pest Control, Qualified Applicator License, Maintenance Gardener Pest Control Business License, Pesticide Broker License, Pest Control Business License, Pest Control Dealer License, Structural Pest Control Licenses, and Vector Control Licenses and Certifications. *Available at* http://www.cdpr.ca.gov/docs/license/lictypes.htm.

[6] *Available at* http://www.cdpr.ca.gov/docs/emon/surfwtr/caps/2480_memo_cop_mitigation_ab425.pdf.

on Leach Rate, Jan. 30, 2014, p. 2-3. Furthermore, as discussed above, DPR's leach rate calculations are based on BMPs that are not contained in the regulation currently under consideration: "[b]ased on our modeling analysis, DPR recommends the establishment of the maximum allowable copper leach rate for AFP products at 9.5 µg/cm2/day under the condition that in-water hull cleaners follow CPDA's BMP method with soft-pile carpet and that cleaning cannot be performed more frequently than once per month." DPR Memo on Leach Rate, Jan. 30, 2014, p. 4. The regulations must either include a leach rate standard that is protective absent any BMPs or require the BMPs necessary to make the proposed standard sufficient.

VI. Conclusion

Even if everything goes according to plan, DPR admits that "dissolved copper concentrations in [larger] marinas may still at times exceed the CTR criterion." DPR Memo on Leach Rate, Jan. 30, 2014, p. 5. Yet DPR declines to propose regulations that will bring all marinas into compliance. San Francisco Bay, in particular, has larger marinas that will, by DPR's own words, still at times exceed the EPA's toxics criteria. Waterkeepers urge DPR to aim for measures that will meet with certainty the Legislature's instruction that it "protect aquatic environments." DPR's regulatory recommendations risk further violations of the California Toxics Rule and missing copper Total Maximum Daily Load compliance dates.

Sincerely,



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