



February 13, 2026

Dr. Anson Main
California Department of Pesticide Regulation (DPR)
1001 I Street
Sacramento, CA 95812-4015
Submitted on DPR's public comment website:
<https://cdpr.commentinput.com/?id=jQus94a5i>

Subject: BACWA Comments on DPR's Draft Fipronil Pet Products: Potential Risks to Aquatic Life Memorandum

Dear Dr. Main:

On behalf of the Bay Area Clean Water Agencies (BACWA), we thank you for the opportunity to provide comments on the Department of Pesticide Regulation's (DPR's) [Draft Fipronil Pet Products: Potential Risks to Aquatic Life Memorandum \(Memorandum\)](#). BACWA is a joint powers agency whose members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that collectively provide sanitary services to over seven million people in the nine-county San Francisco Bay Area. Every day, BACWA members provide wastewater treatment for millions of gallons of pesticide-containing wastewater that is discharged to fresh or saltwater bodies, including local creeks and rivers, bays, and the Pacific Ocean. We take our responsibilities for safeguarding receiving waters seriously.

BACWA has a strong interest in fipronil due to its indoor uses with down-the-drain pathways, high aquatic toxicity, and proven ability to pass through POTWs and remain present in the effluent. BACWA greatly appreciates the years of scientific research that DPR's Surface Water Protection Program has invested assessing the fate and transport of on-pet and indoor pesticide use including:

- On-going multiyear influent and effluent sampling at POTWs across California
- Special studies including sub-sewershed monitoring to elucidate upstream sources and a monitoring study of fipronil in dog wash rinsate post application of a topical treatment
- Modeling potential impacts to municipal wastewater dischargers and aquatic ecosystems

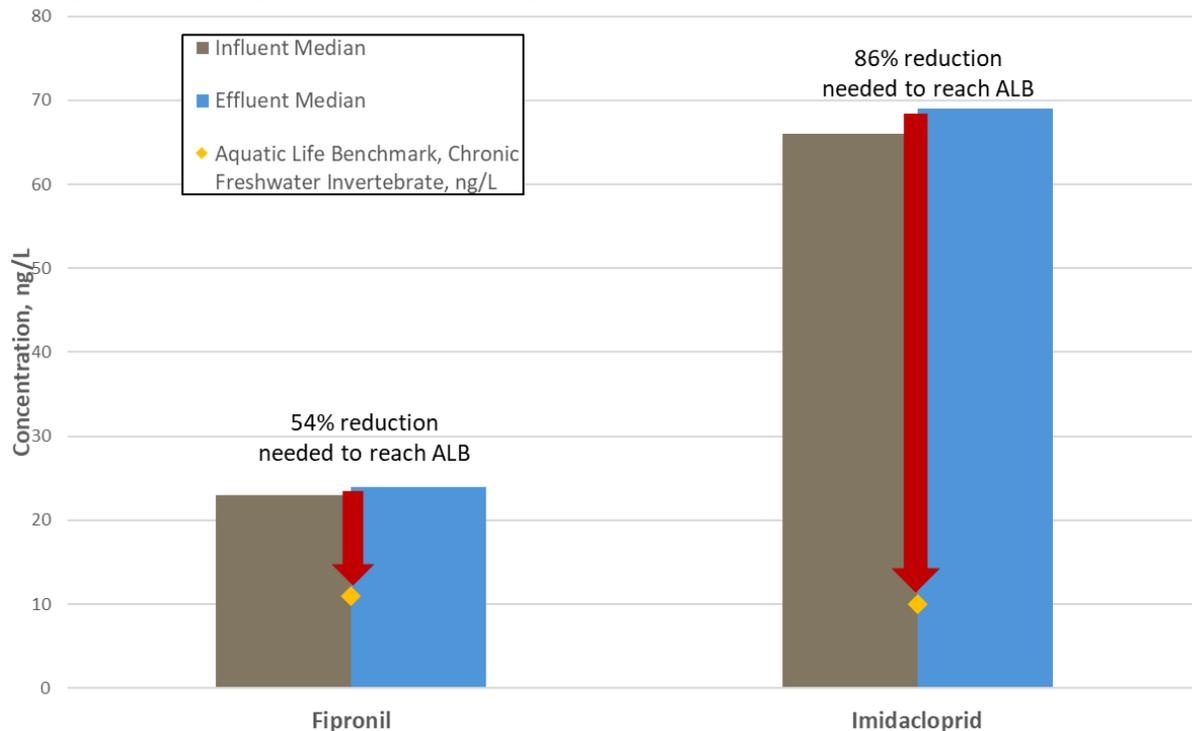
We appreciate DPR's data-driven and thoughtful approach to understand the linkages between on-pet and pesticide use and surface water impacts. Our feedback below is largely aimed at our concerns with the likely regrettable substitution of imidacloprid, providing additional insights from veterinarians, and suggestions for next steps.

1) BACWA requests an equivalent aquatic risk memo for imidacloprid to ensure subsequent fipronil mitigation is completed in tandem with equivalent imidacloprid uses

In past comment letters, BACWA has requested that DPR conduct its risk assessment for pet flea/tick control products as a group (i.e., considering imidacloprid, pyrethroids, and others). Evaluating and managing alternatives as a group is necessary to avoid the situation that if one pesticide is restricted, another pesticide—one with regrettable consequences—may be substituted. One example of a regrettable substitution for the over-the-counter (OTC) fipronil topical treatments would be the OTC imidacloprid topical treatments that are of similar price, prevalence, and availability.¹

Similar to fipronil, DPR’s ongoing wastewater monitoring study finds that the concentration of imidacloprid measured in undiluted POTW effluents exceeds the United States Environmental Protection Agency (US EPA) Aquatic Life Benchmark (ALB) for chronic exposure to freshwater invertebrates. Imidacloprid in treated effluent is 6.9 times greater than that ALB while fipronil is 2 times greater than its respective ALB, suggesting that imidacloprid toxicity may be more of a threat to receiving water than fipronil (see Appendix 1).

Figure 1. Median wastewater influent and effluent concentrations of fipronil and imidacloprid relative to the most stringent ALB for each active ingredient (based on DPR Study No. 322, August 2022 to January 2025).



¹ In California, as of December 2025, there are 54 registered products containing fipronil (52 spots and 2 sprays) and 48 registered products containing imidacloprid (44 spots and 4 collars) (email communication from DPR). In addition, there are imidacloprid oral and spot products that are regulated by the FDA and not registered with DPR.

BACWA would prefer to avoid any action that would spark additional consumer use of OTC imidacloprid products. One way to do this would be for DPR to prepare an aquatic risk memo for imidacloprid, parallel in structure to the fipronil document. Given DPR's existing POTW and sewershed studies, it appears that sufficient data have been collected so that this could be a fairly straightforward analysis. Completion of such an analysis would allow DPR to pivot to jointly assessing mitigation alternatives for both fipronil and imidacloprid.

2) BACWA suggests that DPR closely engage with the veterinary community to develop an alternatives assessment

While imidacloprid is a well-quantified threat – DPR wastewater monitoring shows it is already prevalent in effluent at levels exceeding the ALB – there are a number of other OTC and prescription alternatives for which limited toxicity data are available. This data gap points to a need for a broad-based alternatives assessment akin to DPR's alternatives assessments for copper-based root control products and tributyltin cooling water biocide additives which assessed both chemical and mechanical alternatives.² Analogously, a pet pesticide assessment would include all flea and tick alternatives, including other OTC pesticide formulations, physical alternatives, and FDA approved flea and tick medicines that are outside of DPR's pesticide purview.

We recommend that DPR engage in a meaningful way with veterinarians in order to develop a holistic understanding of alternatives. Since November 2020, BACWA's pesticide committee has been communicating regularly with the American Veterinary Medical Association (AVMA) Committee on Environmental Issues (AVMA-CEI), as well as with veterinary professors and specialists from UC Davis, University of Colorado, the British Veterinary Association, and the World Small Animal Veterinary Association. Via these relationships, BACWA has gained valuable insights on the complexity of companion animal parasite control.

For instance, BACWA's early outreach materials focused solely on flea control alternatives, including mechanical/physical alternatives and chewable products regulated by the Food and Drug Administration (FDA). In 2021, through a series of communications with AVMA-CEI, BACWA realized that physical controls, as well as some OTC pesticide alternatives, differ for fleas versus ticks. AVMA representatives assisted BACWA with developing a suite of tick control alternatives, greatly improving both our understanding and our messages.

In 2024, BACWA collaborated with the Veterinary Information Network (VIN) to conduct a survey of practicing veterinarians regarding both fipronil and imidacloprid with respect to both flea and tick control. The survey received responses from 637 US companion animal clinicians, representing 22 states, including 73 California respondents (details in Appendix 2).

Two-thirds of survey respondents were unaware of environmental risks of imidacloprid, 69% were unaware of environmental risks of fipronil and 86% were unaware of human health impacts of fipronil. When respondents were subsequently provided with very brief information about the

² Davidson, N. (1995) *Evaluation of Copper- and Tributyltin-containing Compounds*, Report Number EH-95-07, DPR Environmental Monitoring & Pest Management Branch.

transport to the sewer and associated aquatic toxicity impacts of fipronil and imidacloprid, 62% of US respondents indicated they would be somewhat or very willing to consider changing their recommendations regarding products containing fipronil. This was in addition to 12% who responded that this was not applicable because they currently do not recommend those products. Similarly, for imidacloprid, 61% of US respondents indicated they would be somewhat or very willing to consider changing their recommendations regarding products containing imidacloprid. This was in addition to 12% who responded that this was not applicable because they currently do not recommend those products.

The study also found that while the veterinarian's preferred alternatives were orals/chewables, there were significant barriers due to cost and the wide availability of OTC alternatives. In addition, the study revealed that veterinarians represent a diverse community with a range of patient needs and professional preferences. Some respondents sought balance between pesticide regulation and external parasitic diseases, including those transmittable to humans. Others noted the need for accessible OTC pesticides for low-income patients, seizure-prone dogs, animals with food allergies to chewable flavorings, and pregnant/lactating patients. Interestingly, veterinarians are also cognizant that fipronil products were originally available by prescription only; some find it awkward to pivot back to recommending prescription-only alternatives, concerned that clients may view them as representatives of "Big Pharma" rather than trusted medical professionals.

Veterinarians in the US and around the world have initiated One Health³ dialogues about environmental impacts of and alternatives to these on-pet pesticides.^{4 5} One consideration is a risk-based approach (instead of prophylactic) that would assess the companion animal lifestyle, including time outside, travel locations, other types and number of pets, immunocompromised individuals, and whether clients are effectively able to monitor for fleas or ticks. Another on-going discussion topic is whether to recommend narrow-spectrum rather than broad-spectrum products (even though that may be less convenient), which decreases the number of pesticides used.

These examples strongly suggest that insights from veterinarians could inform a broad, category-based pet-products alternatives assessment.

3) BACWA offers specific suggestions with respect to aquatic risk mitigation

DPR's [Continuous Evaluation and Mitigation Update](#) site⁶ states that the next step in this process is to "develop potential mitigation options for any identified risks in the Pet Product Aquatic

³ "One Health refers to two related ideas: First, it is the concept that humans, animals, and the world we live in are inextricably linked. Second, it refers to the collaborative effort of multiple disciplines working locally, nationally, and globally to attain optimal health for people, animals, and the environment." <https://www.avma.org/resources-tools/one-health>

⁴ <https://www.bva.co.uk/media/6627/bva-bsava-and-bvzs-policy-position-on-responsible-use-of-parasiticides-for-cats-and-dogs.pdf>

⁵ Communications with members of AVMA CEI, the British Veterinary Association, and the World Small Animal Veterinary Association.

⁶ <https://www.cdpr.ca.gov/look-up-pesticide-info/continuous-evaluation-and-mitigation-update/> Accessed January 26, 2025.

Risk Document and Human Health Risk Assessment by Q2 2026.” BACWA suggests that both the POTW community and the veterinarian community could provide helpful information during the development of mitigations, allowing DPR to identify effective, practical, and widely accepted mitigation options and to avoid regrettable substitutes.

BACWA suggests that DPR consider the following during evaluation of mitigation options for fipronil pet pesticides:

- Avoid nuanced or partial mitigations, such as product bans that affect only one size or species. Such mitigations may drive pet owners towards off-label uses. For example, if pet products for large dogs are restricted, pet owners may use two small dog doses on a large dog. Further, if a mitigation is geared towards large dogs, in regions where most households have small dogs, there may be no measurable benefit to POTW effluent or receiving waters.
- Consider designating certain products as “California Restricted Materials” on the basis of active ingredient and use patterns, as allowed for in California Code of Regulations, Title 3, Section 6400.⁷ Currently 1,217 products are listed as CA restricted.⁸ It appears that veterinarians could apply to become “certified applicators” which would allow products to remain available for pet health considerations, while limiting their widespread use.
- Consider communicating with US EPA regarding pet pesticide label improvements:
 - Add a pictogram on the product box that discourages pet washing and swimming.⁹
 - Add label language that discourages pet washing or swimming within 2 weeks of product application. Language should be in large font in a place where consumers will see the warning, such as front or back of product box.
 - Consider Spanish translation.



BACWA intends to expand our educational outreach to veterinarians and pet parents in the months ahead. For example, at the upcoming July 2026 AVMA national convention in Anaheim, a BACWA representative will be co-leading a 2-hour dialogue with a UC Davis veterinary parasitologist regarding companion animal parasiticides. We would welcome DPR participation!

Thank you for this opportunity to provide feedback regarding the aquatic risks of on-pet fipronil and the alternatives. BACWA looks forward to continued partnership between our Pesticides Workgroup and DPR to protect California's waterways.

If you have any questions, please contact BACWA's Project Managers:

Autumn Ross

Robert Wilson

⁷ California Restricted Materials Requirements: https://www.cdpr.ca.gov/wp-content/uploads/2025/01/volume_3_append_b.pdf

⁸ CA DPR Search for Pesticide Products Registered as Restricted Materials performed on January 14, 2026: <https://apps.cdpr.ca.gov/label/restricted.cfm>

⁹ “No pet washing” pictogram example from https://png.pngtree.com/png-clipart/20230114/original/pngtree-no-pets-in-pool-area-icon-png-image_8908793.png BACWA does not have image rights to distribute this image; it is only shown as an example for information purposes.

San Francisco Public Utilities Commission
(415) 695-7336
aross@sfwater.org

City of Santa Rosa
(707) 543-4369
rwilson@srcity.org

Respectfully Submitted,



Lorien Fono, Ph.D., P.E.
Executive Director
Bay Area Clean Water Agencies

cc: Madison H. Le, Deputy Director, Pesticide Programs Division, Monitoring and Mitigation, CA DPR
Joy Dias, Acting Branch Chief, Environmental Monitoring Branch, CA DPR
Jennifer Teerlink, Deputy Director, Pesticide Programs Division, Registration, Evaluation and Human Health Assessment, CA DPR
Karen Morrison, Director, CA DPR
Sapna Thottathil, Deputy Director and Special Advisor, Sustainable Pest Management, CA DPR
Brian Gress, Environmental Program Manager, Sustainable Pest Management, CA DPR
Jessica Wong, Senior Environmental Scientist, Sustainable Pest Management, CA DPR
Annalisa Kihara, Assistant Deputy Director Division of Water Quality, CA SWRCB
Philip Crader, Assistant Deputy Director, CA SWRCB
Rebecca Nordenholt, California RWQCB, SF Bay Region
Natie Lee, California RWQCB, SF Bay Region
D'Andre Alejandro, California RWQCB, SF Bay Region
James Parrish, California RWQCB, SF Bay Region
BACWA Executive Board
BACWA Pesticides Workgroup
AVMA Committee on Environmental Issues
Prof. Jane Sykes, Medicine & Epidemiology, UC Davis Veterinary Medicine

Appendix 1 – Summary of DPR Wastewater Data Set for On-Pet Flea/Tick Parasiticides Registered in California, Including Topicals, Collars, Shampoos, Sprays, Orals and Injectables¹⁰

Included in DPR Study 322 of Wastewater Influent and Effluent¹¹	
Active Ingredient	Wastewater Effluent Conc vs. Aquatic Life Benchmark (ALB), Chronic Freshwater Invertebrate
Imidacloprid*	Effluent Conc. 6.9x > ALB
Fipronil*	Effluent Conc. 2x > ALB
Pyrethrins *	Effluent Conc. < ALB
Pyriproxyfen*	Effluent Conc. < ALB
S-methoprene*	Effluent Conc. < ALB
Tetrachlorvinphos	Effluent Conc. < ALB
Pyrethroids: Cyphenothrin*	Effluent Conc. < ALB
Etophenprox *	Effluent Conc. < ALB
Dinotefuran*	Effluent Conc. << ALB
Pyrethroids: Bifenthrin * Deltamethrin * Permethrin * Phenothrin	Unable to assess; analytical reporting limit was greater than ALB
Pyrethroids: Flumethrin *	Unable to assess, no stated ALB

Not Included in DPR Study 322	
Regulated by DPR and US EPA	Regulated by FDA; no ALB
Limonene Sodium diisooctyl sulfosuccinate* Spinetoram Undecylenic acid*	Lufenuron Sarolaner* Selamectin* Spinosad Nitenpyram Isoxazolines: Afoxolaner Fluralaner Lotilaner Sarolaner

* For both tables, the asterisk denotes that this ingredient is used in combination with other ingredients on these lists. In particular, while Dinotefuran was observed 2 orders of magnitude less than the ALB, it is not a stand-alone product and is typically blended with permethrin, for which data are not sufficient for assessment.

¹⁰ Study 322: Monitoring Pesticides in Wastewater Influent and Effluent, August 2022 to January 2025, California Department of Pesticide Regulation, Environmental Monitoring Branch.

¹¹ Indoxacarb and Novaluron were also in the DPR Study 322 but are no longer registered in California for on-pet uses.

Appendix 2 – Findings from U.S. Clinician Survey Regarding Companion Animal Ectoparasite Control

In 2024, BACWA collaborated with the Veterinary Information Network (VIN) to conduct a survey of practicing veterinarians regarding both fipronil and imidacloprid. The survey received responses from 637 US companion animal clinicians, representing 22 states, including 73 California respondents. Based on an AVMA estimate of 71,693 companion animal practitioners in 2024,¹² that suggests that the survey has a margin of error of 3.9% with a 95% confidence level. Because many survey questions were optional, the sample size differs across questions.

Of the 637 US veterinarians, 53% had been a veterinarian for more than 20 years (n=339/637), and 88% (n= 559/637) had been in practice for more than 5 years. Just over 57% indicated they were either a corporate, regional chain, or private practice employee (n=169, 170, and 25 respectively of 637), while 31% reported being an owner or partner (n=198/637). The remaining 12% were a mix of relief, shelter, mobile, and academia with one individual representing a vaccine clinic.

Asked about flea prevalence in their community, 91% reported that fleas were either year-round (66%, 422/637) or seasonal (25%, 160/637). With regard to tick prevalence, 89% reported that they were either year-round (58%, 372/637) or seasonal (31%, 196/637).

Two-thirds of respondents were unaware of environmental risks of imidacloprid (382/573) and 69% were unaware of either environmental risks of fipronil and 86% (490/573) were unaware of human health impacts of fipronil. Respondents were asked, in addition to animal eligibility (i.e., age, reproductive status, medical history), how frequently they consider eleven factors when recommending a flea or tick prevention product. The factors most considered were product effectiveness, ease of administration, animal safety (product adverse event data), route of administration, and multi-parasitic treatment. Of somewhat lesser consideration was cost and prescription vs over-the-counter (OTC). Of the 11 factors, the one *least* of consideration was risk to water quality.

Twelve percent of US respondents indicated that they do not currently recommend either fipronil or imidacloprid to their clients. When asked what flea control alternatives they recommend that do not contain either fipronil or imidacloprid, 87% indicated an oral/chewable, 50% said home mechanical treatments (washing bedding, thorough vacuuming), and 49% said another on-pet product. As for other pesticidal controls, 32% recommended professional pest services and 29% recommended DIY pesticides (carpet sprays or room foggers), with rare recommendations of flea shampoo (4%). For tick control alternatives to fipronil and imidacloprid, respondents' most common recommendations were rigorous coat inspections after walks in infested areas (50%) and another on-pet product.

Following these introductory survey questions, respondents were provided with very brief information about the transport to the sewer and associated aquatic toxicity impacts of fipronil and imidacloprid. In response to this information, 62% of US respondents (223/358) indicated they would be somewhat (126/358) or very willing (97/358) to consider changing their

¹² <https://www.avma.org/resources-tools/reports-statistics/market-research-statistics-us-veterinarians>

recommendations regarding products containing fipronil. This was in addition to 12% (42/358) who responded that this was not applicable because they currently do not recommend those products.

Similarly, for imidacloprid, 61% of US respondents (246/402) indicated they would be somewhat (139/402) or very willing (107/402) to consider changing their recommendations regarding products containing imidacloprid. This was in addition to 12% (47/402) who responded that this was not applicable because they currently do not recommend those products. Thus, when clinicians were presented with just a single paragraph and graphic describing the fate of these pesticides in the environment, almost three-quarters were either already not recommending these products or could be swayed not to recommend these products.

When asked what alternative strategies they would recommend or emphasize, they listed these options in order of preference (respondents could choose as many responses as applied):¹³

Preferred Flea Control Alternatives

1. Orals/chewables (59%)
2. Home mechanical treatments (vacuuming, washing bedding) (29%)
3. Another on-pet topical or collar (24%)
4. Professional pest control service (14%)
5. Home pesticidal treatments (carpet sprays or foggers) (8%)
6. Flea shampoo (3%)
7. Regular shampoo (non-antiparasitic) (3%)
8. Not applicable, I will continue to recommend products with fipronil or imidacloprid (1%)

Preferred Tick Control Alternatives

1. Orals/chewables (59%)
2. Rigorous coat inspections (30%)
3. Another on-pet topical or collar (23%)
4. Keeping the dogs on trails / avoiding woods and tall grass (18%)
5. Creating a tick free zone in the yard (13%)
6. Professional pest control service (11%)
7. Home pesticidal treatments (outdoor sprays) (6%)
8. Not applicable, I will continue to recommend products with fipronil or imidacloprid (1%)

When asked whether there were barriers in place that prevent them from removing fipronil and/or imidacloprid from their recommendations altogether, 40% (183/453) said yes. When respondents were then asked to identify the top barriers to removing fipronil and imidacloprid from their suite of recommendations, their top barriers were cost and client compliance:

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Cost (51%) 2. Ease of administration / client compliance (40%) 3. Prescription vs. OTC (34%) 4. Other (29%) 5. Route of administration (28%) 6. Animal safety and adverse event data for other products (27%) 7. Prefer to keep it as an option even if not using it (22%) | <ol style="list-style-type: none"> 8. Effectiveness relative to other methods (18%) 9. Multi-parasitic treatment (15%) 10. Animal temperament (15%) 11. Hospital affiliation with specific products (13%) 12. Pet lifestyle (13%) 13. Habit (8%) 14. Other species in the household (4%) |
|---|---|

¹³ The survey was conducted in 2024, before an injectable product had been approved by U.S. FDA.

The final survey question was an open-ended text field for respondents to comment on any additional thoughts about companion animal products that contain fipronil or imidacloprid. Some respondents sought balance between pesticide regulation and external parasitic diseases, including those transmittable to humans. Other clinicians noted a sporadic need for pesticide alternatives for low-income patients, seizure-prone dogs, animals with food allergies to chewable flavorings, and pregnant/lactating patients. Thirty-eight respondents remarked that one or both pesticides were either ineffective or less effective than newer alternatives, particularly with respect to fleas. While these respondents typically do not recommend them, they noted that the OTC availability makes it difficult for veterinarians to have any control on what their patients receive. Several respondents specifically noted their preference for oral isoxazolines or topically-applied selamectin (prescription), selamectin/sarolaner (prescription) or spinetoram (OTC, cat only) over fipronil or imidacloprid products.