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Subject: Aquatic Mosquito Control Draft Permit Comments

Mr. Jennings:

Thank you for meeting with us on March 3rd. The comments below memorialize the discussion we had that afternoon and provide further comments critical to continued effective mosquito vector control in Washington.

Clarke respectfully submits these comments on the Mosquito Control General Permit – Public Notice of Draft (PNOD) ("Draft Permit") and the accompanying Fact Sheet (FS) published February 3rd, 2010. Clarke is a provider of mosquito control products, equipment and supplies to Municipalities, Abatement Districts, and private customers across Washington State. We are submitting these comments based on our interest in the excellent mosquito and vector control programs currently protecting Washington citizens and our concern that several of the Draft Permit provisions could prove detrimental to current public health mosquito vector control efforts.

Each of the comments below references specific text in either the Draft Permit or the Fact Sheet.

1. S4.B: The Draft Permit does not authorize the use of registered pesticide products containing the active ingredient Spinosad. Though recently registered with the Washington State Department of Agriculture (2009), Spinosad products are not yet widely used in organized vector control programs in the state. However, the environmental and user safety characteristics of registered Spinosad products make them a suitable choice for use in numerous different aquatic mosquito environs, and have the potential to increase the effectiveness of such programs with a lessened impact to the environment. The Department of Ecology recognizes on page 32 of the Fact Sheet it presently does not have the resources for authorizing discharges of additional ("new") active ingredients outside the permit development process. Clarke points out that Spinosad products are presently registered in the State and are, therefore, not "new" and should be included in the development of the Mosquito Control General Permit. The available literature about Spinosad confirms an environmental fate and aquatic acute

and chronic toxicology profile as good as (or better than) authorized active ingredients. Clarke respectfully suggests that it would be a considerable oversight of the DOE to exclude use of Spinosad products from the General Permit.

Spinosad is derived from the naturally occurring soil bacterium *Saacharopolyspora spinosa* ("spiny sugar"). In 1997 Spinosad became one of the few insecticide active ingredients registered as a Reduced Risk Pesticide under the US EPA's Reduce-Risk Pesticide Initiative[1], which was created to "encourage the development, registration, and use of lower-risk pesticide products, which would therefore result in reduced risks to human health and the environment when compared to existing alternatives." Further, in August 2007 Spinosad *applications to the aquatic environment for control of mosquito and midge larvae* were likewise registered as Reduced-Risk based on a more favorable human safety and environmental impact profile than currently available alternatives, including temephos and methoprene. Spinosad has no significant toxicity to most terrestrial non-target organisms, including birds, wildlife, plants and beneficial insects, and poses a reduced risk to aquatic non-target organisms at rates used in vector management. Application rates present up to a 50X reduction in certain treatment areas compared to other registered (and authorized) active ingredients, and pose reduced acute and chronic exposure hazard to aquatic non-targets.

Spinosad is one of only six insecticides to receive the Presidential Green Chemistry Award[2] (1999); Green Chemistry applies across the life cycle of the product, including the design, manufacture, and use of a chemical product. Spinosad does not leach, bioaccumulate, volatilize, or persist in the environment. Spinosad degrades photochemically after application. Because spinosad strongly adsorbs to most soils, it does not leach through soil to groundwater and is not expected to move from the site of application. Laboratory and field microcosm studies confirm that Spinosad is not particularly toxic once it has sorbed to the sediment, imparting reduced risk to benthic environs post-application.

In 2002 Spinosad was approved by the US Department of Agriculture's National Organic Standards Board for use in certified organic agriculture as a non-synthetic (natural) product.

Spinosad mosquito larvicide *formulations* (Natular™ brands) combine the award-winning environmental properties of Spinosad with minimal risk inert ingredients to provide an equal balance of performance and environmental stewardship. All inert components in Natular formulations registered for use in natural aquatic environments are included on EPA's *List of Minimal Risk Inert Ingredients*, and are allowed as inert components in insecticide products under the National Organic Program (NOP). To date, four (4) Natular formulations – including both formulations currently registered with the WSDA – are listed by the Organic Materials Review Institute (OMRI) as allowed for use in and around organic agricultural operations.

[1] http://www.epa.gov/opprd001/workplan/reducedrisk.html
[2] http://www.epa.gov/greenchemistry

Spinosad mosquito larvicides are formulated as sustainability solutions for greater application flexibility with exceptional performance. Formulation characteristics and dosage rates of Spinosad mosquito larvicide formulations mitigate risks from "inert ingredients" as well as acute or chronic exposure to Spinosad in the aquatic habitat. Clarke respectfully requests that Section S4.B.1 be revised to authorize application of Spinosad larvicides without additional permit restrictions outside of Appendix B areas.

2. S5.C.2: The Draft Permit does not authorize the application of EPA registered adulticide products containing the active ingredient Prallethrin which are FIFRA labeled for wide-area mosquito control. Prallethrin is an active ingredient used in combination with other, authorized, active ingredients: Sumithrin and Piperonyl butoxide. This combination of active ingredients provides unique application advantage in that it draws adult mosquitoes from rest, bringing them into the treatment zone and providing more efficient management of the pest population with each application. Though Prallethrin, a synthetic pyrethroid, is moderately to highly toxic to aquatic invertebrates, US EPA completed its risk assessment of the wide-area mosquito adulticide use of this ingredient in 2005 and determined that applications for this use at rates up to 0.0008 pounds Prallethrin per acre (the maximum rate on Prallethrin products registered or proposed for registration with the WSDA) posed no acute or chronic risk to the freshwater or estuarine environment. Nor did EPA identify acute or chronic risk to freshwater or estuarine organisms living in the benthos from wide-area adulticide applications of Prallethrin. A copy of EPA's risk assessment was provided to the Department of Ecology.

   Mosquito adulticide products containing Prallethrin are designed for use in Integrated Mosquito and Vector Management programs by increasing application efficiency in many programs while simultaneously reducing the overall insecticide load of the operation. Though incremental amounts of Prallethrin are added to formulations which already contain a synergized synthetic pyrethroid, the maximum dosage of insecticide from applications of registered Prallethrin products is 0.008 pounds of *total active ingredient* per acre (including Prallethrin, Sumithrin, and Piperonyl Butoxide). Compared to registered, and authorized, alternatives allowing applications of 0.014 to 0.033 pounds of active ingredient per acre under normal pest population pressure[3], Prallethrin products provide comparable (or better) control with 1.75 to 4.125 times less insecticide use.

   Based on the nearly identical environmental and toxicology profile of Prallethrin to authorized synthetic pyrethroids, and an even *reduced* environmental exposure to the ingredient compared to authorized adulticide products, Clarke respectfully requests that section S5.C.2 of the Mosquito Control General Permit be revised to authorize application of EPA and WSDA registered wide-area mosquito adulticides with the active ingredient Prallethrin, without further restriction.

[3] Maximum label rates of synergized permethrin and Natural Pyrethrins mosquito adulticides; US EPA Re-registration Eligibility Decisions (REDs) for permethrin, piperonyl butoxide, and natural pyrethrins (http://www.epa.gov/pesticides/reregistration/status.htm).

3. S3.C.1.c: In limiting adulticiding to ULV, the Draft permit does not make provision for use of alternate technology application approaches employed in targeting more narrow and clustered mosquito populations as allowed by FIFRA-labeling for wide-area mosquito adulticides (e.g. thermal fog application to areas under dense canopy and known harborage areas). Additionally, while recognizing that ULV is the best practice at present, Clarke points out that future application technologies could prove more effective control with less risk in specific treatment areas than current techniques. A standard 5-year permit life of the CWA permits will restrict access to new technologies if there is no method to approve their use. Denying Washington State mosquito vector control professionals the use of newer tools to combat the spread of disease in specific problematic environments could have a negative impact on the quality of life and health of state residents. As a minimum, DOE should consider specifically including other, presently approved and FIFRA-labeled, wide-area adulticide application techniques in the General Permit. Additionally, DOE should identify some method of notification of revisions to a NOI to include alternative non-ULV adulticiding methods as may be developed during the term of the permit.

    a. Clarke strongly recommends that S3.C.1.c be amended to require that "(The permittee must) use Ultra Low volume spray apparatus or a methodology approved by the FIFRA label for wide-area application to control mosquitoes."
    b. In addition, Clarke recommends a line be added to the NOI for the applicant to request approval of an adulticiding method different from ULV.

4. S3.C.1.d specifies wind speed requirements for adulticiding. This provision of the draft permit is not only redundant, but is potentially in conflict with the FIFRA Law. Mosquito adulticide labeling under FIFRA contains detailed instructions concerning application parameters, including relevant wind and meteorological conditions during the spray event. Presently, labels require application when *ground* wind speeds are greater than or equal to 1 mph in order to facilitate movement of the spray cloud and minimize deposition (including deposition to the aquatic environment). The Reregistration Eligibility Decisions for natural and synthetic pyrethroids and the synergist piperonyl butoxide remove reference on the labels to an upper limit on ground wind speed. An upper wind speed limit is no more or less protective of the aquatic environment, and is arbitrary at best. Finally, the reference to wind speed on the FIFRA label is reference to the wind speed *at ground level*, the target zone for adulticide applications, and may not necessarily correlate with the wind speed at application height for aerial applications.

    For the reasons above, Clarke suggests specifying wind speeds in the General Permit is inappropriate and recommends S3.C.1.d be removed entirely. If DOE chooses to maintain specific meteorological conditions in its permit, it should at a minimum acknowledge that the wind speed is relevant to the wind speed measured at ground level.

5. S4.B. and S5.C.2: The Draft Permit does not establish a pathway for approving use of new active ingredients for adulticiding and/or larviciding under the permit. In light of constantly improving technology with the potential to offer less toxic active ingredients and decrease the amount of pesticide required, it is essential that vector control professionals have the latest tools to protect public health. Clarke points out that most NPDES General Permits are only amended at the end of their 5-year permit term, thus potentially leaving a

gap of several years in which lesser amounts of new active ingredients might be mitigating potential impacts on the environment.

Clarke strongly recommends the final permit include:

a. Language allowing consideration of new active ingredients within the 5 year permit term;
b. An overview of the criteria that would be used to facilitate approval; and
c. An overview of the process envisioned to include use of products containing the new active in the existing permit, e.g., inclusive language allowing "use of those active ingredients approved by Ecology using the following criteria…"

6. While S4.D.3.e clearly envisions public health emergencies related to mosquito-borne disease as falling under the General Permit provisions, S2 Public Notice requirements will preclude any New Applicants from providing a practical response within the timeframe required to protect human health. As mentioned in the WA DOH Guidance for Surveillance, Prevention, and Control of Mosquito-borne Disease (2008) "To have the maximum impact on the mosquito population, larvicides are applied during those periods when immature stages are concentrated in the breeding sites and before the adult forms emerge and disperse."

   In order to protect public health during declared emergencies, Clarke strongly recommends that language be included for New Applicants addressing a declared public health emergency, which waives the requirements for:

   a. 60 day notice prior to application (S2.A),
   b. Filing the SEPA (S2.C), and
   c. Publishing two times (S2.G).

7. S5 Adulticide Use: Direct application of mosquito adulticide pesticides to waters is prohibited by Federal law and by FIFRA pesticide labeling, though the potential for incidental deposition resulting from application is unavoidable. The purpose of the Draft Permit is to permit and authorize the *discharge* of a pesticide or its residue, including incidental deposition of a mosquito adulticide, to *waters of the state*. The permit is not, specifically, an authorization for *use* of a pesticide product. The use of a mosquito adulticide is regulated in the State of Washington by the WSDA. Clarke advises the DOE to revise the language throughout the permit, and specifically in Section S5 pertaining to adulticide products, to reflect the specific authorization or prohibition of "discharge". For example, revise the following statement in section S5.B.3 of the draft permit:

   "A Permittee that is an organized mosquito control district (chapter 17.28 RCW) may use adulticides to control vector mosquitoes provided…"

   To read,

   "A Permittee that is an organized mosquito control district (chapter 17.28 RCW) may discharge to the waters of the state adulticides and their residues which are used to control vector mosquitoes provided…"

8. S5.B.4: Clarke respectfully notes that there are many mosquito vector control applicators in the State that are not Mosquito Control Districts including many associated with tourism such as Golf Courses, Hotels and Resorts, Camp Grounds, Commercial Property Owners, Equestrian Facilities, and Home Owners' Associations. Applications by these entities are a requirement under the Owners Responsibility for Control of Mosquitoes at RCW 17.28.175 and are typically of limited scope. Further, these applications are strictly regulated under the FIFRA and by WSDA applicator licensing in the appropriate category.

   Clarke strongly recommends that to insure effective management of vector mosquitoes, private mosquito control entities, under the direction of licensed applicators, be authorized to conduct adulticiding under the final permit similar to Mosquito Control Districts subject to the provisions in B.3 without a separate determination by Department of Health.

9. Fact Sheet, pg 26: While a developed and implemented Integrated Pest Management Plan is a Best Management practice for mosquito vector control, a requirement to follow the Administrative Procedures Act (chapter 34.05 RCW) for public involvement when developing the plan appears inconsistent with the Act's intent (RCW 34.05.001), and is too broad a requirement to be enforceable as a practical matter. The Administrative Procedures Act is an extensive body of requirements that, if applied to each organized mosquito control district's IPM plan development would preclude timely finalization of the document and impede mosquito vector control.

   Clarke strongly recommends that an IPM Plan similar to that tendered by the American Mosquito Control Association to US EPA for consideration in that agency's Aquatic Mosquito Control Draft Permit be a required BMP for compliance with the final Permit. The Final Permit should require compliance with the BMP for permit compliance, but development of the BMP including the public involvement requirements at RCW 34.05 would seriously undermine mosquito vector control in Washington State.

Thank you again for your time on March 3rd. We hope these comments contribute to an effective Final Permit that protects the health and welfare of the citizens of Washington. Please contact either of the individuals be low if you have any questions about our comments.

Sincerely,

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