

August 16, 2004

The Honorable Keno Hawker
Mayor of Mesa
P.O. Box 1466
Mesa, Arizona 85211-1466

Dear Mayor Hawker:

Thank you for your August 2, 2004, letter regarding possible aerial spraying for mosquito control. I wish to emphasize that the Board of Supervisors did not approve aerial spraying at its August 5, 2004 Board meeting. The Board approved an additional \$2.18 million for enhanced ground spraying, disease surveillance and public education. The Board instructed the Maricopa County Public Health and Environmental Departments to utilize additional ground fogging resources to try to control our West Nile Virus epidemic without the need to do aerial spraying. The Public Health and Environmental Departments have stated that they will closely monitor the disease indicators. If the ground applications do not adequately reduce the risk of contracting West Nile Virus, the departments may propose aerial application to the Board of Supervisors as a last resort.

Your letter includes a list of questions. Please refer to the following text for Maricopa County's responses to your questions.

1.a. What is the kill rate for aerial spraying when standing water sources are not open to the air? For example, when there is a tree canopy or other structure covering or partially covering the water.

Response: Aerial or ground mosquito control for adult mosquitoes (adulticiding) is not intended to address larvae which live in bodies of water. For larvae, we use larvicides, which are applied directly to the water source.

1.b. What would the kill rate be if the ground level fogging and source control larvicide programs were greatly expanded (as opposed to the aerial spraying)?

Response: Maricopa County uses an integrated mosquito management approach. Mosquito elimination starts with source control and public education. Elimination of standing water, distribution of mosquito eating fish and citizen involvement are the preferred methods for controlling mosquitoes. The County

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routinely monitors and treats 6000 known potential or actual breeding sites for Culex species mosquitoes. In areas where larvicide makes contact with the source water, the kill rate is 100%. The kill rate for adulticiding ranges from 40% - 90%. Expansion of the larvicide and ground fogging efforts will kill more mosquitoes, but the kill rate per application will remain the same for the specific area treated.

1.c. Although the CDC states in their letter that this is difficult to quantify the benefits of aerial spraying versus ground level control, we feel strongly that there must be some attempt to justify the cost, and the potential risk, of aerial spraying based on an anticipated increased mosquito reduction rate.

Response: The risk to people for doing aerial vs. ground-based fogging is about the same because the same chemical would be applied for both. And, the rates of application are very low for both. The application rate for ground fogging is less than one-third ounce of active ingredient per acre. The rate for aerial application is about one-half ounce per acre. There is a difference in public perception, however, as there is greater concern about aerial fogging. The advantage for aerial application is that a much larger area can be treated quicker. The advantage of ground-based fogging is that it can be more targeted and sustainable from one season to the next. Both methods of application reduce human risk.

1.d. How many times will the aerial spraying be required? Will there continue to be an increased program to treat standing water with larvicides to eliminate breeding?

Response: Ground fogging in a specific area will depend on pre-application mosquito counts and post-application counts. Our experience with ground-based fogging indicates there is often a need to treat an area two or three times to achieve an acceptably low number of mosquitoes. The same approach is used by jurisdictions where aerial applications occur. In those areas, two or more applications are often necessary. Maricopa County is currently re-applying

1.e. What is the biological half-life of the synthetic pyrethroid? Although the County has stated that the active ingredients will be instantaneously degraded to non-toxic compounds in the presence of sunlight, there is information available that indicates a biological half-life for some pyrethroids of several days.

Response: Maricopa County has not stated that the sumithrin will be "instantaneously degraded to non-toxic compounds in the presence of sunlight". Some synthetic pyrethroids are light-stable and have a longer half-life. However, sumithrin is rapidly deactivated by ultraviolet radiation. Within 24 hours there should be no detectable residual pesticide on any non-porous surface exposed to daylight. Sumithrin binds to the soil and may last for several days in soil located in a shady area. An additional advantage to sumithrin is that it breaks down and is excreted after ingestion. It does not accumulate in any animals. The County may also use Kontrol 2 - 2, which is another synthetic pyrethroid containing

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permethrin as the active ingredient. Kontrol 2 - 2 would only be used as a back up in the event that Anvil is unavailable or if mosquitoes develop a resistance to Anvil. Permethrin is very similar to sumithrin, however the label includes a 100 foot buffer requirement around bodies of water.

2.a. Information should be provided regarding protection of people who may be at a higher risk of having an adverse reaction to the chemical.

Response: Maricopa County agrees with Mesa's suggestion. The County has established a new web site at www.maricopa.gov/wnv giving information about Anvil. We are continuously improving the amount of information available to the public. The web site has links to several websites, such as the New York State Department of Health, where information for high-risk persons may be obtained.

2b. There is information on the EPA web site that the synthetic pyrethroids can kill both fish and bees. Mesa has received one complaint that after the ground level fogging all of the fish in a residential pond were dead the next morning.

Response: Product information for sumithrin indicates it is toxic to fish and bees. However, in the ultra low volume applications done by mosquito control agencies (0.3 ounces per acre) the concentration is not toxic to fish. The label for Anvil does not include a buffer zone requirement from bodies of water. Most other adulticides have at least 100-foot buffer zone requirements from bodies of water containing fish. Because of the rapid degradation of sumithrin, and its night-time application period, there should be negligible impacts on bees. We will investigate the complaint you received. Our Environmental Services staff will contact your staff so that we can follow up.

2.c. The EPA website also advises against using these compounds on water sources. How will the County insure that the spraying does not harm urban lakes and other healthy water sources?

Response: In addition to the information provided in our response to 2.b., it should be noted that the label for Anvil prohibits direct application to waters and disposal of rinsates from cleaning equipment into natural water habitats. The label permits application in areas surrounding marshes and swamps. Maricopa County's ground-fogging application does not contaminate surface water because we do not generate rinsates, drums are returned to the supplier and there is no direct application to waters.

2.d. What effect will the pesticide have on *Gambusia affinis* (mosquito eating fish) that have been used to treat standing water in some areas of the valley?

Response: Please refer to responses given to questions 2.b. and c. Maricopa County's application of sumithrin is in accordance with label instructions and will not harm *Gambusia* or other fish.

2.e. What quality control procedures will be in place to insure that the pesticide is applied at the specified dilution rate? Will there be qualified County staff

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observing the process to document the product is applied at the specified concentration and application rate?

Response: The ultra low volume equipment is calibrated before each season and for each new piece of equipment before it is used in the field. An on-board radar unit detects the speed of the vehicle and automatically adjusts chemical flow rate if vehicle speed varies. We monitor to determine whether recalibration is needed. There are three night time supervisors. Each applicator receives field training and is under the direct supervision of a licensed pesticide applicator. In addition, the Maricopa County Vector Control Manager has a qualifying party license from the Arizona Structural Pesticide Control Commission. Records are kept of all pesticide applications.

2.f. Information must be published on what residual may be present after the aerial spraying. What precautions should residents take to insure there is no remaining chemical on fruit or vegetables growing outside, children's toys left outside, in swimming pools or other objects that residents may come in contact with that were outside during the spraying?

Response: Please refer to responses to questions 1.e. and 2.a. The rapid degradation of sumithrin coupled with the extremely low application rate of one-third ounce per acre should not result in residuals on the ground that would pose a health risk. However, common sense precautions should be taken after any pesticide application such as washing off toys and garden fruits and vegetables. Our website will be updated with frequently asked questions and other information about the spraying.

3. We are assuming that the County is collaborating with the Arizona Department of Health Services as they evaluate the relative risks of WNV and aerial spraying. This collaboration should be emphasized and the position of ADHS should be publicized.

Response: Maricopa County is closely communicating with ADHS on this issue. The ADHS has been very helpful. ADHS believes our current plan of action to greatly enhance ground-based adulticiding, increase mosquito surveillance, increase larviciding of known Culex sites and enhance public education will result in reduction of human cases of West Nile Virus. The ADHS position on our plan of action has been articulated by several state spokespersons including Governor Napolitano.

4.a. Although we realize that time is crucial, it is strongly recommended that residents be given at least 48 hours advance notice of when their neighborhood will be sprayed.

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Response: Maricopa County agrees with Mesa's suggestion. The Environmental Services Department has developed a 3-day fogging projection. Although the Department has been providing same-day notices on its fogging hotline (602-372-3000), the 3-day notices started on August 11, 2004.

4.b. If multiple applications are anticipated this must be clearly communicated to the public prior to initiating any aerial spraying.

Response: As stated above, all pesticide applications will be announced in advance. It is not possible to state with certainty that a given application for a specific area will require multiple applications. In general, the success of the application depends on weather conditions and mosquito population.

4.c. It is strongly recommended that the County establish a website where residents can send e-mail questions, and maintain the telephone hotline (602-506-0700) that is staffed to answer questions. Questions from citizens should be answered within a very short period of time.

Response: Please correct your records for the phone numbers to give residents. The County has established several phone numbers:

To file a mosquito complaint:	602-506-6616
To report dead birds:	602-506-6616
To receive health information	602-747-7500
To hear fogging schedules:	602-372-3000
To get mosquito fish:	602-506-0700
ADHS WNV Information:	602-364-4500
CDC WNV Information:	888-246-2675
Spanish language:	888-246-2857

In addition, we have established a website www.maricopa.gov/wnv for specific information about West Nile Virus. We are setting up an after-hours phone consultation service. Email inquiries will be routed to the appropriate person for a response.

I was very pleased to read in your letter that Mesa has enlisted its field personnel to do mosquito surveys. This is exactly the kind of community action that we need to reduce human disease. I encourage the City of Mesa to attempt to get residents to eliminate any sources of mosquito breeding found by City workers. Most often, these are caused by violations of city nuisance abatement, structural or neighborhood preservation codes. We would appreciate any local action you can take if your City has adequate authority to order a resident to eliminate standing water in buckets, toys, and pools and generally clean up their property. However, we recognize our responsibility to resolve complaints about mosquitoes and will rapidly respond if City staff report them to our complaint line at 602-506-6616. Staff may also log in a complaint on-line by visiting

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www.maricopa.gov/envsvc. In addition, MAG hosted a meeting of all city and town public information officers on August 12, 2004. We hope that each city and town will increase their efforts to educate their residents about West Nile Virus with an emphasis on source reduction and personal protection.

Sincerely,

Andrew Kunasek
Chairman
Maricopa County Board of Supervisors

cc. David Smith, County Administrative Officer
Jonathan B. Weisbuch, M.P.H., M.D., Public Health Department
Al Brown, R.S., M.P.A. Environmental Services Department