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September 29, 2004

MEMORANDUM FOR MEMBERS OF THE GOVERNMENT REFORM SUBCOMMITTEE ON ENERGY POLICY, NATURAL RESOURCES AND REGULATORY AFFAIRS

FROM: Doug Ose



SUBJECT: Briefing Memorandum for October 6, 2004 Hearing, "Current Challenges in Combating the West Nile Virus"

On Wednesday, October 6, 2004 at 10:00 a.m., in Room 2247 of the Rayburn House Office Building, the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs will hold a hearing on the West Nile Virus (WNV). The hearing will explore recent activities and challenges to Federal, State and local efforts to control or eliminate the WNV epidemic.

Since 1999, when the WNV was first diagnosed in New York City, about 622 people have died in the United States from the WNV. Thousands more have suffered the debilitating consequences of meningitis and encephalitis that are caused by the WNV. Although many States have at least temporarily controlled the epidemic, the West and South are still facing epidemic conditions. The recent onslaught of devastating hurricanes in the Southern and Eastern regions of our country will add to the epidemic, as local officials struggle to address regressing flood waters and breeding mosquito populations. The WNV remains a serious public health threat that has destroyed the lives and families of people throughout this nation.

The WNV is a mosquito borne disease that infects humans, birds, horses and other animals. About 176 species of mosquitoes are recognized in the United States, each with its preferred aquatic breeding habitat. These habitats vary widely and mosquitoes frequently adapt to changing weather and water surface conditions. Any collection of standing water can serve as a potential breeding site, from a bottle cap, tire depression, storm water retention pond, or salt water marsh. Mosquitoes proceed through their first three life stages in water and, under high temperature conditions, can emerge as flying adults in as little as a few days.

Since the epidemic began in 1999, many States have successfully reduced instances of the disease. For example, last year, Colorado suffered 63 deaths and 621 cases of severe neuro-invasive sickness. This summer, dryer and cooler weather helped to lower the infected mosquito population that can be easily managed by aggressive public health and mosquito abatement officials. Many experts also give credit to the changes in individual behavior and public awareness as factors lowering instances of WNV in many parts of the country. Federal, State and local officials administered a nationwide campaign to “Fight the Bite” by educating citizens on source reduction and bite prevention. While personal responsibility is very important, many caution that public education is a limited disease prevention strategy. Recently, a study by the Harvard School of Public Health confirmed that citizen education has its limits and complacency is rampant.

As a public health and regulatory concern, all levels of government have coordinated to fight the challenges posed by the WNV. At the Federal level, the Centers for Disease Control (CDC) and the National Institutes of Health (NIH), both of which are in the Department of Health and Human Services (HHS), and Environmental Protection Agency (EPA) have coordinated to control and prevent the human WNV epidemic. CDC serves as the lead Federal agency coordinating the Federal response to the WNV. Meanwhile, CDC assists State and local health departments in monitoring potential sources and outbreaks, and providing consultation on mosquito surveillance, source reduction and control. CDC provides grant assistance to State health departments to enhance laboratory and epidemiological capacity. Meanwhile, NIH serves as the primary research center for treatments and vaccines that may some day relegate WNV to the list of easily treatable diseases.

As the sole regulatory authority over the regulation, sale and use of pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), EPA plays a pivotal role in the availability of pesticides to eliminate mosquitoes (7 U.S.C. §136 and 40 CFR §§150-189). Mosquitoes are designated by EPA as a pest of “significant public health importance” under the Food Quality Protection Act (7 U.S.C. §136w-3). EPA also oversees State-administered Clean Water Act (CWA) National Permit Discharge Elimination System (NPDES) storm water program best management practices (BMPs) that have contributed to the epidemic by collecting and holding rainwater and pollutants (33 U.S.C. §1342 and 40 CFR §§122-125.24). More recently, some States have required an NPDES permit for use of chemical mosquito control in aquatic environments.¹

States generally license and monitor mosquito abatement operations and water quality through their respective departments of health, agriculture, and pesticides/toxics. California’s additional pesticide regulations require its Department of Pesticide Regulation to cooperate with EPA to ensure that pesticides are specifically formulated for use within the State. In addition, since the WNV outbreak began, States have modernized laboratories, coordinated State public health, environment and agriculture regulatory entities, and coordinated surveillance and tracking activities.

¹ California and Washington currently require mosquito abatement districts to obtain NPDES permits when appropriate. Oregon does not mandate NPDES permits, but suggests that pesticide applicators obtain state-issued permits to protect against lawsuits.

The frontlines of mosquito abatement are handled locally by public health officials and specially organized mosquito abatement districts. Many State statutes permit the establishment of vector/mosquito control districts that may levy taxes, assessments or fees for purposes of vector control activities.² County health and vector control officials conduct surveillance and trapping activities, and take actions to prevent, abate and control mosquito populations.

The challenge to mosquito abatement officials is to formulate Integrated Mosquito Management (IMM) practices using a combination of physical source reduction, biological, and chemical controls to minimize the economic, health and environmental risks caused by mosquitoes. Professionals must carefully conduct surveillance activities in order to monitor and predict the location of mosquito populations.

To reduce the mosquito population, officials use physical source reduction methods, which may include digging ditches to move water, removing excess vegetation and debris, and biological control through natural mosquito predators. The public has been strongly encouraged to contribute to this effort by removing standing water around residences. Although the use of non-chemical strategies will often reduce mosquito breeding habitat, they are usually not sufficiently effective control agents.

To control the WNV epidemic, public officials typically use both non-chemical controls and chemical control methods. The application of extremely low-risk, environmentally sensitive, host-specific materials are used to control mosquitoes. Two types of materials are generally used: (1) larvicides, which target the aquatic immature or larval/pupal stages of these insects, and (2) adulticides, aimed at killing flying mosquito adults. IMMs seek to prevent emergence of adult mosquitoes and, therefore, apply larvicides directly to water that act to suffocate, prevent growth, or interfere with molting of the larvae. When larvicides fail, operators will use ground or aerial foggers to dispense very fine aerosol droplets that stay airborne and kill adult biting mosquitoes on contact. Before spraying occurs, public officials notify the public.

The WNV has been a persistent epidemic for the last five years; nonetheless, the use of pesticides has created some controversy over mosquito control methods that have been in practice for decades. In some locations, local citizens have objected to the use of chemical pesticides, particularly adulticides, as a method of mosquito control. Recent 9th Circuit Federal Court decisions have resulted in the requirement for pesticide applicators to obtain NPDES permits before application to navigable waters.³ Meanwhile, citizen suits under the CWA filed in the 9th and 2nd Federal Court Circuits⁴ have left many mosquito abatement professionals in fear that additional regulation and lawsuits are likely in the near future.

² For example, California authorizes vector control districts under section 2002 of the California Health and Safety Code.

³ Headwaters, Inc. v. Talent Irrigation Dist., 243 F.3d 526 (9th Cir. 2001) and League of Wilderness v. Forsgren, 309 F.3d 1181 (9th Cir. 2002).

⁴ Altman v. Town of Amherst, N.Y. 2002 App. LEXIS 20498; No Spray Coalition, Inc. v. City of N.Y., 351 F.3d 602 (2nd Cir. 2003); and the St. John's Organic Farm v. Gem County Mosquito Abatement District.

In July 2003, EPA responded to these concerns by issuing for public comment an “Interim Statement and Guidance” memorandum to its regional offices, stating its position that, under certain circumstances, FIFRA compliant pesticide applications do not require NPDES permits for purposes of mosquito abatement (68 FR 48385). While the nonregulatory interim guidance somewhat clarifies EPA’s position and may convince courts to defer to EPA’s legal interpretation, as it stands, the interim guidance does not bind non-Federal entities. To date, EPA has not initiated formal rulemaking, leaving vector control districts still vulnerable to citizen lawsuits under the CWA for failure to obtain NPDES permits.

Combating the WNV has taxed the stamina of local scientists and mosquito control specialists. Scientists at all levels of government strive to understand how the WNV is spread, how it adapts to local hosts and aquatic environments, and how to treat and prevent the most serious neuro-invasive diseases that effect thousand of citizens.

This hearing will explore State and local strategies and challenges for combating the WNV, particularly as it rages in the West. It will also address challenges faced by health and mosquito abatement officials from regulatory and nonregulatory guidance uncertainties and suggestions for additional regulatory action to facilitate effective public health mosquito control. Finally, this hearing will look to the future to how citizens and government can use the lessons learned from this epidemic to respond to threats from other mosquito borne diseases that are only an ocean away.

Invited witnesses include: Dr. Anthony S. Fauci, Director, National Institute of Allergy and Infectious Diseases, NIH, HHS; Dr. Stephen M. Ostroff, Deputy Director, National Center for Infectious Diseases, CDC, HHS; Benjamin J. Grumbles, Acting Assistant Administrator, Office of Water, EPA; John Pape, Chief Epidemiologist, Colorado Department of Public Health & Environment; Dr. Jonathan Weisbuch, Director of Public Health Maricopa County, Arizona; Joe Conlon, Technical Advisor, American Mosquito Control Association; David Brown, Chair, Integrated Pest Management, Mosquito and Vector Control Association of California; and, Wendy Station, Founder, Encephalitis Global.