ILLINOIS POLLUTION CONTROL BOARD
April 21, 1988

IN THE MATTER OF:	)	
	)	
MANAGING TIRE ACCUMULATIONS	)	
TO LIMIT THE SPREAD OF THE	)	R88-12
ASIAN TIGER MOSQUITO	)	
	)	
ADOPTED EMERGENCY RULE.	)	
	)	

OPINION AND ORDER OF THE BOARD (by J. Marlin):

SUMMARY OF TODAY'S ACTION

The Board is adopting this "fast track" emergency rule in order to discourage the spread of the Asian Tiger Mosquito (Aedes Albopictus) in Illinois.

This rule is aimed at preventing the spread of the Tiger Mosquito and the building of its population to the point that it can transmit diseases. As of this point in time the Tiger Mosquito is known to be present in small areas in three counties. The Board agrees with the Illinois Department of Public Health (IDPH) that "it is important for the public to understand that the emergency is the spread of the Tiger Mosquito and not an imminent outbreak of disease." (P.C. No. 7 attachment).

The regulations target accumulations of scrap tires in which the mosquito can breed. Scrap tire movement is the primary means by which the insect is spread to new localities. It is the intention of the Board to have these regulations be effective during the 1988 mosquito breeding season.

These rules will be in effect from May 1, 1988 through September 28, 1988, a period of 150 days. This is the maximum amount of time allowed by statute for emergency rules. The rule requires that certain management standards for the storage of scrap tires be followed after May 15, 1988. This will allow time for affected parties to comply. The Board anticipates opening a docket on a permanent rule in the near future.

The Board gratefully acknowledges the assistance provided by John M. Vandlik, Kathleen Crowley, and Morton Dorothy in assisting in the preparation of this regulation.

NOTICE AND COMMENT PROCEDURES EMPLOYED

In routine rulemaking proceedings, the Board is required by Section 28 of the Act to hold public hearings which must be preceded by publication of a newspaper notice 20 days in advance of the hearing date. Given the imminent start of the mosquito breeding season, the Board felt that it could not reasonably delay adoption of a regulation until after a Section 28 hearing. On the other hand, the Board believed it prudent to solicit public comment on the rule prior to its adoption, given the compliance deadline. Accordingly, on April 7, 1988 the Board issued a proposed Opinion and Order containing proposed regulatory language and the Board's supporting rationale.

It also announced that a Special Board Meeting would be held on April 15, 1988 to receive testimony concerning this issue. The date, place, and time of this meeting were set forth in the Board's Proposed Opinion and Order adopted on April 7, 1988. That Proposed Opinion and Order was sent to representatives of various governmental agencies, including the Illinois Environmental Protection Agency, Illinois Department of Public Health, the Illinois Natural History Survey, the Department of Energy and Natural Resources, the Small Business Office of the Illinois Department of Commerce and Community Affairs, the Attorney General's Office, and the U.S. Environmental Protection Agency. Also, representatives of various mosquito abatement districts, located throughout the State, the Illinois Tire Dealers and Retreaders Association, Illinois Petroleum Marketers Association, Illinois Petroleum Council and Illinois Environmental Regulatory Group, and specific businesses dealing with tires were notified of the proposed rule. In the Board's April 7th Proposed Opinion and Order, the Board specifically requested the aid of persons, agencies, and associations in spreading the news of the Board's proposed rule to persons who might have an interest in this matter. In addition, the Office of the Governor issued a press release on April 11, 1988 which, again, announced the date, time, and place of the Board's Special Meeting in this matter. Although the Board is not presently aware of the number of newspapers which reported this matter, the Board notes that the Chicago Sun-Times reported the particulars concerning the meeting on April 15, 1988. The press release and news story are entered into the record as Exhibits No.'s 30 and 31.

The April 15 meeting was attended by all seven members. Cross questioning was permitted to the extent feasible consistent with time constraints and the number of witnesses. At the close of the meeting, the Board set a public comment period for the proposed rule. Written comments were due by 12:00 p.m. on April 20, 1988. The Board received post-hearing comments. A list of witnesses and commenters is contained on page 6.

Today's Opinion and Order will be sent to all the persons that were sent the Board's April 7th Proposed Opinion and Order. In addition, anyone who filed comments or testified at the Special Board Meeting on April 15th will also be sent copies of the adopted rule, to the extent their addresses are known.

EXPEDITED RULEMAKING

As will be discussed in more detail later in this Opinion, the Tiger Mosquito is a serious disease transmitter in its native Asia. It is known to be present in limited numbers in three Illinois counties. At least two serious viral diseases which commonly occur in Illinois can be transmitted by this mosquito under laboratory conditions. In addition, one serious viral disease which is occasionally brought into Illinois is transmittied by this insect. The movement of scrap tires is the primary means of spreading this insect to new localities. Unless steps are taken to control scrap tire movement and storage, this mosquito is expected to spread rapidly throughout Illinois. Once spread throughout the State, the mosquito will be in close proximity to reservoirs of viral diseases that it may potentially transmit to the human population. The proposed rule, although it does not specifically address tire management, will reduce the number of new infestations expected in the State, greatly slow the spread of existing infestations, prevent the buildup of existing populations to dangerous levels, and reduce the numbers of other disease spreading mosquitoes in Illinois. Action must be taken quickly before the 1988 mosquito breeding season begins.

Obviously, the Board's usual rulemaking proceedings, which can take a year, are inappropriate for quick response to this problem.*

Both the Act and the APA do, however, contemplate the existence of exceptional situations which can appropriately be handled only by adoption of rules in a shorter-than-usual time period. The Board believes that the Tiger Mosquito situation is one of those cases which requires expedited rulemaking.

Pursuant to Section 27(c) of the Illinois Environmental Protection Act (Act) and Section 5.02 of the Illinois Administrative Procedure Act (APA), the Board may adopt a temporary emergency rule effective for 150 days, without utilizing the usual rulemaking procedural steps. The 150 days

* Routine rulemaking under Section 5.01 of the APA cannot be accomplished in less than 90 days, as a rule must proceed through two 45 day notice periods. The Act establishes additional procedural requirements such as the drafting of an Economic Impact Statement which may lengthen the process by a year or more.

will encompass the breeding season this year and allow time for consideration of other steps to address the situation next year.

Under Section 27(c), paragraph 2, of the Act and Section 5.02 of the APA, the Board may adopt a temporary rule which remains in effect for up to 150 days. The APA terms this an "emergency rulemaking," and defines "emergency" as "the existence of any situation which an agency finds reasonably constitutes a threat to the public interest, safety, or welfare." The Board believes that the potential spread and further establishment of this insect, which is capable of transmitting a number of diseases, reasonably constitutes such a threat.**

At the meeting, the scientific panal agreed that the potential spread of the Tiger Mosquito meets the required definition of "emergency." Dr. Turnock of IDPH and Ms. Nickels of CDH also agreed.

Through Section 27 and 22 of the Act, the Board may adopt substantive regulations to promote the purposes of Title V of the Act which is entitled "Land Pollution and Refuse Disposal." Section 20(b) of the Act which sets forth the purposes of Title V states:

> It is the purpose of this Title to prevent pollution or misuse of land, to promote the conservation of natural resources and minimize environmental damage by reducing the difficulty of disposal of wastes and encouraging and effecting the re-cycling and re-use of waste materials, and upgrading waste collection, treatment, storage, and disposal practices....
>
> Ill. Rev. Stat. 1985, ch. 111 ½, par. 1020(b).

Further, Section 2 of the Act states:

> (a) The General Assembly finds

** The Board also notes that under Section 27(c), paragraph 1, of the Act, the Board may promulgate a permanent regulation that "shall take effect without delay and the Board shall proceed with hearings and studies required by this Section while the regulation continues in effect." This procedure may be used "when the Board finds that a severe public health emergency exists." The Board does not believe that the present situation regarding the Tiger Mosquito constitutes a "severe public health emergency."

> (1) that environmental damage seriously endangers the public health and welfare....
>
> Ill. Rev. Stat. 1985, ch. 111 ½, par. 1002(a)(1)

Reflecting this legislative finding, the Supreme Court has held that impairing the Board's ability to "protect health, welfare, property, and the quality of life" is inconsistent with the objectives of the Act because of "the Act's emphasis on public health." Monsanto Company v. Pollution Control Board, 67 Ill. 2d 276, 367 N.E.2d 684, 10 Ill. Dec. 231, 235 (1977).

Similarly, courts have held that actions of the Board may be classified as an exercise of the State's police power which can require individuals to expend funds in "the interests of public health and welfare." A.E. Staley Manufacturing Company v. Environmental Protection Agency, 8 Ill. App.3d. 1018, 290 N.E.2d 892 (1972); Cobin v. Pollution Control Board, 16 Ill. App. 3d. 958, 307 N.E.2d 191, 199 (1974).

In the instant situation, the Board has adopted rules that regulate the storage of scrap tires for the benefit of public health. It is the Board's position that the promulgation of these rules is well within the authority granted to the Board under the Act.

The storage, transport, and disposal of scrap tires are a solid waste management problem. Such matters are commonly dealt with by the Board. The Board has traditionally promulgated rules to control pests and vectors associated with solid waste. The best example is regulations to control rodents and birds associated with landfills. The Board also regulates hospital wastes and the bacterial levels of raw and finished water. Other Board regulations concern the safe transportation and storage of a variety of materials. The adoption of regulations to control mosquitoes in scrap tires is consistent with the Board's other regulatory functions.

The Board could not have reasonably acted in this matter before this time given that the extent of the infestation and the Tiger Mosquito's ability to survive Illinois' winters did not become known to the Board until recently. Delaying action on this matter while routine rulemaking procedures are followed would allow the mosquito to spread during the entire 1988 breeding season.

The Board is aware that other agencies and local governments are in the process of considering responses to this problem. The Board recognizes that these regulations address only one facet, albeit an important one, and has appreciated the assistance of these entities in revising the original proposal.

MEETING PARTICIPANTS

At the special Board meeting four research scientists specializing in entomology testified on the Tiger Mosquito problem. This group is collectively referred to as the Scientific Panel.

Dr. George Craig, Jr. is an entomologist and Director of the Vector Biology Laboratory at the University of Notre Dame, and a Fellow of the National Academy of Sciences. He has served on expert committees for numerous entities including the World Health Organization and Pan American Health Organization and has authored over 400 scientific papers on Aedes mosquitoes.

Dr. Robert Metcalf is a Professor Emeritus at the University of Illinois and Principal Scientist of the Illinois Natural History Survey (INHS). He is a member of the National Academy of Sciences, has served on the Expert Committee on Insecticides of the World Health Organization; Pesticide Science Advisory Panel of U.S. Environmental Protection Agency; and a variety of committees of the National Academy including that on Urban Pest Management. He is the author of more than 400 scholarly publications.

Dr. Robert Novak, is currently with the INHS and Macon Mosquito Abatement District. Previous appointments were with the University of Puerto Rico; and the Centers for Disease Control in San Juan and Atlanta. His career has been focused on mosquito research including identification, ecology, behavior and control. He has been the lead person for the INHS on the Asian Tiger Mosquito since its discovery in Illinois last year.

Dr. Chester D. Moore is a research entomologist at the Arbovirus Ecology Branch, Division of Vector-Borne Viral Diseases, Center for Infectious Diseases, Centers for Disease Control (CDC), Fort Collins, CO. He was an army entomologist at the Walter Reed Army Institute of Research and served with the CDC in Puerto Rico. He has authored over 30 scientific papers and is an advisor to many organizations including the World Health Organization.

The statement of Bernard J. Turnock, M.D., M.P.H., Director of the Illinois Department of Public Health (IDPH) was given by Dr. Linn Haramis, a medical entomologist and program manager of the Arbovirus Surveillance Program. He has managed a Mosquito Abatement District and authored seven publications.

Other witnesses included:

Dr. Lorin I. Nevling, Chief of the I.N.H.S., of the Illinois Department of Energy and Natural Resources (DENR);

Dr. Daniel D. Brown, Director of the Macon Mosquito Abatement District on behalf of the North Central Region of the American Mosquito Control Association;

Leslie Nickels, Program Director, Environmental and Occupational Health, City of Chicago Department of Health (CDH);

Mosi Kitwana, Deputy Commissioner, Department of Streets and Sanitation (CDSS), City of Chicago;

Philip J. Mole, P.E. representing Sun Eco Systems;

Jay Lauterback, President, Illinois State Tire Dealers and Retreaders Association;

Ronald Lakin, Vice-President, Laken General Corp.;

Phillip Van Ness, Attorney, Enforcement Programs; Harry Chappel, Manager, Compliance Monitoring; and Glenn Savage, Manager, Field Operations represented the Illinois Environmental Protection Agency (Agency), Division of Land Pollution Control.

In addition, written comments or exhibits were received from the Illinois Department of Agriculture (IDA), Department of Energy and Natural Resources (DENR), Office of Solid Waste and Renewable Resources (OSWRR), the National Group of Companies, Triple/S Dynamics, the Illinois Farm Bureau, Dr. Bettina Francis and the DesPlaines Valley Mosquito Abatement District.

A large number of exhibits were received by the Board.

THE INFESTATION PROBLEM

The bulk of this section of the Opinion was contained in the Proposed Opinion of April 7, 1988. The scientific panel agreed that the information in that document was scientifically accurate. (R. 21, 27 and 51). Some additions have been made and these generally reference exhibit numbers greater than "ten." The record developed at the meeting clearly indicated that dengue fever is not likely to be transmitted in Illinois. (P.C. #5). Scientists and public health officials are particularly concerned that the Tiger Mosquito may prove capable of transmitting La Cross Encephalitis in Illinois. There was also some question as to whether St. Louis Encephalitis will actually be transmitted by this insect.

Early in 1986, the Tiger Mosquito was discovered in Harris County, Texas and quickly spread to other Texas counties and to Louisiana. The Centers for Disease Control (CDC), Division of Vector-Borne Viral Diseases, after investigating the infestation made the following observations:

The CDC views the introduction of Ae.

> albopictus as a potentially serious public health problem, both for the United States and for other countries in the hemisphere; we are devoting a major portion of our time and effort to the matter.
>
> * * *
>
> We are strongly encouraging state and local agencies that find this species within their jurisdictions to initiate control measures against it. Eggs and larvae [mosquito young which live in water] seem to move from one area to another in shipments of used tire casings for the retreading and recycling industry. Thus, a major component in confining infestations involves the cooperation, and possible regulation, of these businesses. It is a large business, and tires are routinely shipped over long distances. Tire retreaders and recyclers need to be made aware of the seriousness of the problem and ensure that they are not helping to spread the mosquito.
>
> (Exh. 1.)

The Tiger Mosquito is of Asian origin. It is known to transmit dog heartworm (Exh. 1) and a number of human viral diseases including dengue. Under laboratory conditions, it has been infected with other viral diseases including St. Louis encephalitis (SLE) and La Crosse encephalitis (LAC), both of which occur in Illinois. These viruses can be transmitted from a female to her eggs. SLE is normally transmitted by Culex pipiens (Northern House Mosquito) and LAC by Aedes triseriatus (Tree Hole Mosquito). Both of these species occur throughout Illinois. At this point in time the transmission of LAC and SLE to humans by the Tiger Mosquito have not been documented. (Bd. Exh. 3).

Dengue is a serious viral disease in humans which is clinically similar to measles. Dengue has been occasionally bought into the United States by persons returning from the Carribean. IDPH records show that only one Illinois resident has had a confirmed case of dengue during the past three years, and that only 61 have had clinical and epidemiological histories compatible with dengue (P.C. #5). According to CDC, transmission of the virus occurred in the U.S. in 1986.

> Transmission in 1986 was of particular concern for two reasons. First, indigenous transmission occurred in Texas for the second time in 6 years--the last previous transmission prior to 1980 had occurred in

> 1945(s). Second, confirmed dengue cases were reported in areas where Ae. aegypti and Ae. albopictus, two efficient vectors of dengue, occur. The recent introduction of Ae. albopictus into the United States is of special concern because this species is an exceptionally efficient host for dengue viruses and is capable of transmitting both horizontally (human to human) and vertically (from infected female to her offspring) (3,4). Moreover, Ae. albopictus has become established in northern as well as southern states (5). The presence of this species increases the potential for more widely distributed secondary transmission and for the maintenance of dengue viruses in the United States. CDC is currently collaborating with state health departments to improve surveillance for both the introductin of dengue virus and for the presence of the mosquito vectors.
>
> (Exh. 10).

SLE is a viral disease which causes inflamation of the human central nervous system. Disease symptoms appear in infected persons of all ages, but are most severe in the elderly. Symptoms include headache, fever, stiff neck, drowsiness, lethargy, nausea and vomiting, mental confusion, and sometimes seizures and death. Mortality rates range as high as 30 percent of diagnosed cases. During a 1975 epidemic in Ohio, 29 of 416 infected people died. The average age of those who died was 70 years. (Exh. 7). SLE is well established in Illinois.

LAC has similar symptoms to SLE. Children are most at risk of contracting this disease. The mean age of 618 infected persons in Ohio between 1963 and 1985 was slightly less than nine years. Five of the cases were fatal. (Exh. 7). LAC is well established in Illinois.

In 1987, CDC said the following regarding the potential relationship between LAC and the Tiger Mosquito:

> La Crosse encephalitis is the second most common form of mosquito-borne encephalitis in the U.S. La Crosse (LAC) virus, a member of the California serogroup of viruses, is distributed throughout the eastern U.S. and is especially common in hardwood forest areas of the upper Mississippi and Ohio River valleys. It is transmitted primarily in a transovarial infection cycle in Ae. triseriatus, with seasonal amplification in

> small mammals. Humans typically encounter the virus in heavily wooded suburban or rural environments. Probably because of a stable vector-virus cycle, there is a rather constant annual number of about 75 human cases (range of 30 to [1] 60 cases) reported to CDC.
>
> Laboratory studies have shown that Ae. albopictus is an efficient vector of LAC virus. It also transovarially transmits the virus. If Ae. albopictus becomes involved in the LAC virus cycle in the eastern U.S., the epidmiology of the disease might be dramatically altered. First, such a new (and presumably less stable) vector-virus relationship could result in greater year-to-year fluctuation in numbers of cases. Second, Ae. albopictus is better adapted than Ae. triseriatus to urban environments. An urban LAC virus cycle would lead to increased man-mosquito contact and, therefore, increased virus transmission. Third, involvement of Ae. albopictus could result in increased LAC virus activity in the southeastern U.S.

(Exh. 5).

Unlike many Illinois mosquitos that are active in the evening, the Tiger Mosquito is a day biter. It is active when people are about their work and play. It has a reputation as a particularly noxious pest because of its bite (Ex. 3). It is well adapted to human habits and breeds in tires, bottles, jars, plugged gutters, and most other small water-filled containers. This close association with man makes it potentially more dangerous than many other species.

The Tiger Mosquito was found in Illinois in small areas of Jefferson and St. Clair counties in 1986 and in one location in Cook County in 1987. (Bd. Exh. 6). The infestations were in piles of tires. Scrap tires also provide excellent breeding areas for the Nothern House Mosquito and the Tree Hole Mosquito as well as Aedes aegypti (Yellow Fever Mosquito). (Exh. 7).

The scientific panel agreed that the expedited approach is justified (R. 85) and that delaying implementation of the proposed rule would lead to a 50 percent increase in the number of infested counties this year and spread of existing infestations to cover 20 to 25 square miles. (R. 70). They agreed that implementation would have a beneficial effect and should not be delayed. They also agreed with IDPH that the rule will reduce the numbers of other mosquito species known to transmit diseases in Illinois.

Dr. Moore pointed out that the Tiger Mosquito combines the worst characteristics of the mosquitoes that transmit SLE and LAC in Illinois: "it has a strong attraction to humans for its blood meals, and is quite at home in either an urban or suburban setting." He also pointed out that "removal of tires and other major producer habitats may reduce populations of the mosquito to a level where disease agents cannot effectively be transmitted." (Exh. 19A). Regarding the proposed rule, Dr. Moore stated that:

> If you have full and total compliance, I think that you can expect essentially, obviously, a total shutdown of movement of the mosquito at least by human activity within the State.
>
> Any proportional lack of compliance would give a proportionately less optimistic picture of what's going to happen.
>
> (R. 90)

In response to a direct question, Dr. Moore emphatically stated, "There is no evidence that the Asian Tiger Mosquito, any other mosquito, or any other blood-sucking insect, can transmit the AIDS virus." (R. 64).

Dr. Craig said, "Those who know anything about the public health menace of this mosquito in Asia are deeply concerned about its introduction to the Americas." He pointed out that the insect by 1987 had spread to 77 counties in 18 states, has eggs that tolerate freezing and is a major biting pest. He listed 20 organizations dealing with public health and entomology which have expressed concern over the threat posed by the Tiger Mosquito (Exh. 14A). On the importance of acting quickly, Dr. Craig said, "You have got your last chance to get them out of Chicago this spring and summer. You won't have a chance after this fall." (R. 217).

Dr. Novak and the INHS have studied the Chicago infestation. It has spread from a tire yard to adjacent neighborhoods. In addition, a search of 72 tire accumulations in 32 Illinois counties failed to find a fourth infestation. Drought conditions at the time could have caused an infestation to be missed due to low mosquito production. According to Novak:

> This pestiferous daytime biting behavior of this mosquito, coupled with its potential disease-carrying capabilities, could create a severe personnel and economic burden on mosquito abatement districts as well as on public health and veterinary agencies throughout the State. It adds yet another

> insect-and-disease-control responsibility for these agencies, many of which are unfamiliar with control practices necessary to abate container-inhabiting mosquitoes.
>
> (Exh. 16A)

Dr. Turnock pointed out that, "Case investigations by the State Health Departments of Minnesota and Ohio have determined that discarded tires were present at 50-80% of residences where cases of LaCrosse encephalitis occurred....Mosquito control workers have found that tire casings are one of the most common artificial encontainers near private residences. Consequently, eliminating tire casings from private residences will help minimize risk of disease to citizens." He also said that one reason attempts to eliminate the Yellow Fever Mosquito failed in the 1960's was that "clean areas were reinfested by eggs transported in tire casings."

Dr. Metcalf said that many people are seeking his advice on mosquito control programs. He stated:

> The history of practical mosquito control is essentially that of the past 50 years. It has been abundantly demonstrated over that time that elimination of breeding sites for larval mosquitoes by drainage, dewatering, grading,, filling,, etc. or by ancillary larviciding activities is the most practical method for mosquito abatement. It is obvious that this must be true especially in suburban and urban locations where mosquito breeding sites are generally conspicuous and can readily be mapped and where the mosquitoes are concentrated in a relatively immobile and and innocuous life stage. A tiny pond a hundred square meters in area can contain several million mosquito larvae. Yet after emergence from the pupal stage, the winged biting adults can colonize an area of several square miles. The same can be said of the larvae of Ae. albopictus breeding in a few automobile tires containing rain water. Apart from source reduction by drainage, etc.: emergence larviciding by granular or pelletized products containing very small amounts of insecticide can readily be accomplished by treating relatively small areas in an entirely safe and unobjectionable way using either the microbial insecticides Bacillus thuringiensis israelensis (Bti) or Bacillus sphaericus (B.s.); or such relatively safe and effective mosquito

> larvacides as temepyhos, fenthion, methylchlorpyrifos, or even kerosene.
>
> (Exh. 15)

He also cautioned against the use of ground fogs (adulticiding) stating that they are inefficient, have toxicity hazards, invade privacy, damage natural insect enemies, and lead to pesticide resistance in mosquitoes. He pointed out that "more than 200 species of mosquitoes have developed resistant strains to the entire armamentarium of insecticides available." (Exh. 15).

The scientific panel agreed that habitat source reduction, particularly by removing tires, is the desirable way to approach control of this insect. Dr. Novak presented data on the positive effectiveness of the granular formulations mentioned by Dr. Metcalf (Exh. 16A). Dr. Turnock stated:

> Any adult control (fogging) should be directed towards adult tiger mosquitoes at or near sources of production, usually tire accumulations. A general fogging of a community to control day-biting species such as the tiger mosquito or the tree-hole mosquito is unlikely to be effective.
>
> (Exh. 21A)

Leslie Nickels of CPH observed that:

> Controlling this mosquito before it becomes a public health problem is an opportunity that now exists. Intervention at this point in time allows for controlling the spread of the mosquito to new areas. This can begin by reducing the breeding sites in currently infested areas and preventing the mosquito from becoming a vector in the transmission of La Crosse encephalitis.
>
> (Exh. 22)

The expert witnesses agreed that controlling the Tiger Mosquito is generally feasible and eliminating it in some areas is possible. Dr. Turnock said:

> In Jefferson and St. Clair counties, the tiger mosquito populations are small, thus treatment or removal of the tire casings will probably eliminate the infestations. In Chicago, the tiger mosquito has been found outside of the original infestation site,

> which will be treated with insecticides. An intense campaign to remove containers or treat them may eliminate it in the areas surrounding the infestation.
>
> (Exh. 21A)

Dr. Moore stated:

> It is quite likely that the infestation in Mount Vernon will be eradicated, and I think it is probably feasible to eradicate the Chicago infestation. I seriously doubt that this can be done in East St. Louis because of the magnitude of the infestation [in Missouri] and the fact that two states would have to agree on the same goal.
>
> (Exh. 19A)

According to Dr. Brown:

> Once the tiger has escaped from its tire cage and become established in domestic or peri-domestic foci, erradication is bionomically unlikely, and economically unreasonable, if a localized population is sufficiently managed by appropriate abatement strategies and kept at a low absolute density, it may prove over time to be no more of a threat to the public than endemic native species.
>
> (Exh. 20)

Dr. Craig summed up the situation as follows:

> There is quite a science developed of introduced insects. About half of all the pests in this country came from somewhere else. And we have learned quite a lot from agricultural experiences over the years.
>
> The thing that we have learned is that every day wasted is a day lost. And the more they dig in, the better is the chance that we will never get rid of them again.
>
> The more you wait, the more the chances that things like the European Corn Gorer, the Mediterranean fruit fly and many other species that have come to us from elsewhere, will be with us forever.

> We already recognized that the Asian Tiger Mosquito it is too late as far as getting out of the barn. But in these northern latitudes where it is cut back by winter there is still a chance of pushing it back. We don't know that it is going to stay here, and this vear we have the last chance to find out.
>
> (R. 279)

The presence of the Tiger Mosquito in isolated tire piles in two urban counties and one rural county provides the State with the opportunity to slow or stop its spread. Eradication would be desireable, but is unlikely. Given this insect's ability to spread disease and its annoying bite, it is in the public interest to take steps to control its spread. This is particularly true if the mosquito proves capable of transmitting LAC in the field. The virus is largely in rural and suburban areas. The mosquito is currently in isolated urban areas. To allow the mosquito and the virus to come together due to inaction is ill advised at best.

The Board believes that slowing or halting the spread of the Tiger Mosquito will protect many Illinois communities from both its annoying bite and potential health threats. Any time bought for a community by this action can be used by public officials to determine the true extent of the health threat and to prepare appropriate control efforts.

Control of the Tiger Mosquito requires a three-phased effort. First, the spread to new areas must be stopped. Second, new infestations must be attacked. Third, breeding habitat in infested areas must be reduced. As of June of 1987 CDC recommended the following:

> Preventing introduction. The primary role of introduction of Ae. albopictus appears to be through the movement of tires--within states, between states, and between counties. If this movement of infested tires can be halted, the spread of Ae. albopictus can be stopped or greatly reduced. As long as tires are stored and shipped dry, there will be no problem with Ae. albopictus or any other mosquito. Thus, regulations requiring proper storage and shipment should be prepared and enforced. Tire casings coming from an infested area can be treated by heat (dry or steam, 120 F for 30 minutes) or by fumigation (methyl bromide, 2 lb./1,000 cu. ft. for 24 hours). Both methods will kill eggs as long as the tires are dry, but methyl bromide will not kill eggs submerged in water (except at

very high dosages); thus, it is imperative that tires be dry before fumigation. Scrap tires, which have little or no commercial value, should be rendered unsuitable for mosquito breeding by shredding and burning, burying, or other environmentally sound means. When scrap tires are simply transported out of the jurisdiction and dumped, an infestation can be spread quickly.

Control of existing infestations. The primary method of control for Ae. albopictus should be source reduction--that is, removal of potential breeding sites. Container habitats, such as tires, tin cans, etc., should be properly disposed of. Breeding sites that cannot be removed should be rendered inaccessible to ovipositing mosquitoes or incapable of holding water (e.g., by storing under cover, installing drain holes, etc.). A strong community awareness and education program is necessary to accomplish thorough source reduction and to maintain community cleanliness. Frequently, public service organizations and clubs can have a major impact on community awareness.

Chemical control (larvicides, adulticides) can be employed as a supplement to a properly designed source reduction effort. However, Ae. albopictus has already been found to be tolerant to malathion, temephos, and bendiocarb. There are technical problems in getting sufficient quantities of larvicides into containers such as tires in piles, and the cost of treating scattered container habitats in urban areas can be prohibitive.

(Exh. 5).

The Ohio Environmental Protection Agency sponsored a study of Used Tire Recovery and Disposal in Ohio in 1987 (Exh. 7). That report pointed out that used tires are an ever increasing solid waste disposal problem given that whole tires are considered undesirable by landfills and do not degrade over time. About one used tire is generated per capita per year and they are accumulating at an alarming rate. Abandoned tire piles are a fire hazard and tire fires are most difficult to combat when tires are piled haphazardly. The report documented the generation and disposition of used tires in Ohio and contains the following summary:

Of the 14.7 million used tires generated annually in Ohio, 1.3 million are recapped, 0.8 million are graded out for reuse, and 0.4 million are going to other uses. Of the remaining 12.2 million entering the scrap stream in Ohio annually, 2.5 million are disposed of in landfills, 1.0 million are incinerated for energy recovery, 1.1 million are processed through the rubber reclaim industry in-state, 0.52 million are shredded with the shredded product being marketed or landfilled, 0.3 million (bias-ply truck casings only) are utilized in the manufacturing of fabricated rubber products, 0.4 million are consumed by farm or other uses (i.e., brush burning, erosion control, construction uses, etc.), and 0.75 million are transported out-of-state for recycling, reuse, or disposal. Subsequently, a total of 54 percent (6.6 million) of the total scrap casings generated in Ohio are being recycled, reused, or disposed of properly, leaving 46 percent (5.6 million) unaccounted for. Based upon survey results, an estimated 0.6 million casings are being indiscriminantly dumped (into ravines, abandoned coal strip pits, etc.) admittedly, and 0.74 million scrap casings are being stockpiled, totaling to only 11 percent of the scrap generated in Ohio. Obviously, there is a large percentage (35 percent) of scrap tires which are also most likely being indiscriminantly dumped or stockpiled.

* * *

Information collected during this study indicates that there are a minimum of 28 million tires stockpiled in larger piles (greater than 500,000 tires) throughout Ohio. It is important to emphasize that this number is exclusive of innumerable piles ranging in size from 500 to 500,000 casings which are scattered across Ohio in need of abatement, with particularly high concentrations in the rural southeastern portion of the State. Consequently, the total number of tires present in all stockpiles and illegal dump sites in Ohio greatly exceeds 28 million.

(Exh. 7, pp. 39 and 52)

The Ohio Study went into great detail on the association of discarded tires and mosquitoes. It pointed out that the Tree Hole Mosquito's population in nature is controlled by available habitat (tree holes which are limited in number). However, tire piles provide artificial habitat allowing populations to build, increasing the chance of humans being bitten. The Tiger Mosquito is quite similar to the Tree Hole Mosquito in this respect, although it is already adapted to man's artificial containers. The Ohio Department of Health (ODH) has documented the direct association of human cases of LAC with Tree Hole Mosquitoes breeding in "indiscriminately dumped or improperly stored scrap tires."

The Tiger Mosquito lays its eggs above the waterline in containers. The eggs hatch when the water level rises and wets the eggs. The eggs can survive more than a year in a dry container. The result is that shipped tires can carry viable eggs even when shipped dry. If tires are never allowed to accumulate water, the mosquito will not lay eggs in them. Likewise, eggs in a tire that is drained and kept dry will not hatch.

The mosquito is also transported in water filled tires that contain larvae. During transport, the larvae can continue development and become adults. When this happens, the adults can fly from trucks along the route. Draining tires before shipment kills the larvae and prevents the spread of adults during transport.

Although some aspects of the Ohio study are not directly applicable to Illinois, much of the general information on tire use and disposal and the mosquito problem can provide an idea of the general situation in Illinois given the similarities of the two states.

A number of municipalities have taken steps to control the accumulations. The ordinance of Massillon, Ohio, is contained in Exhibit 8. The Houston area has seen a considerable reduction in tire dumps according to a mosquito control official:

> We are currently trying to answer many of the questions posed by these circumstances. We have just completed a "windshield" survey of an area of the city where a 1980 survey found over 2,000 used tire dumps. In 1986, we counted about one-tenth that number, a significant reduction. We have been instrumental in working with the City of Houston in the development of a tire hauling and storage ordinance which is apparently beginning to show good results. Houston requested that we provide them with a copy of the sites where we recently found tire dumps

> so that they can take additional action. The public information provided to the local news media is partly responsible for the instigation of the calls being made to the city requesting that they take action on tire dumps. An important consideration in removing tires is how to dispose of them. In Houston, many used tire dealers are grinding up tires for other uses. On April 1, 1986, a new tire facility capable of grinding up 3,000 tires per hour started operation, and is not charging for disposal since they are selling the rubber for a fuel source. The tire dumps are now beginning to call the piles of used tires "inventory." Competition may even require that the grinding plants purchase or haul tires to their plants as the large stockpiles disappear and particularly if the demand for this fuel source increases.
>
> (Exh. 2).

Dr. Dan Brown presented a statement for the North Central region of the American Mosquito Control Association. He strongly supported the proposal as a "first step in the right direction." He did, however, express some concerns from the point of view of persons involved in actual control as opposed to research. His concerns included the following:

> The probability of dengue fever virus transmission in Illinois must surely approach zero. This should not be considered as part of this proposed action to the "threat to the public interest, safety, or welfare.
>
> The interstate shipment of infested scrap tires is probably a greater threat to the public welfare than intrastate shipment and storage within Illinois. At least as concerns the potential for the spread of Aedes Albopictus.
>
> Small existing tire piles can be eliminated as breeding sites by cultural means as set forth in this proposal with no use of toxicants. Larger sites would be most economically treated with granular formulations with a field persistance of at least 8-10 weeks. Much field testing will be required to fulfill local needs in this area. An effective response must be adaptable to local conditions.

> I have to question whether it places too great an emphasis on the large tire accumulations and shipments. In Decatur, at least most tires that are currently infested with Ae. triserriatus and C. pipiens are not in the large discrete aggregations of scrap tires, but in those that are illegally dumped.
>
> I strongly agree that 'existing or potential infestations' can best be handled locally. However, at least in downstate Illinois, most 'local governments with appropriate authority' do not have sufficient resources to effectively 'take action appropriate to local conditions.'
>
> (Exh. 20)

Paul Geery of the DesPlaines Valley Mosquito Abatement District (P.C. #8) agreed that there is a clear need for immediate action. He recommended that any rule apply statewide for the following reasons:

> First, the known sites of infestation are not necessarily all the sites of infestation in the state of Illinois. What we don't know can hurt us. Secondly, it is in the places that do not currently have an infestation that the proposed ruling could be most beneficial. In places where the mosquito has already arrived, this ruling by itself would have little effect. The cat is already out of the bag there! Keeping new cats from the area would have minimal impact. Thirdly, the likelihood of tires in an infested county finding their way into surrounding counties to avoid the ruling would probably result in further movement of the mosquito.

He expressed concerns that if the rule is not enforced, it may do more harm than good. He also cautioned against creating a panic situation and lulling officials into a false sense of security:

> We have witnessed the public panic from news articles about Ae albopictus that distort its current and future possible effects. If the proposed emergency ruling is passed, the media will likely cause more public concern than is justifiable.

> As you have stated, this ruling is only a beginning in trying to deal with this problem. Unfortunately, some state, county, or local authorities might consider this a full solution and stop or reduce other efforts to control the problem.

At the meeting, John Clark said that, "I have never had any mosquito control problem come up in the past 40 years that has generated as many calls as the publicity of the Asian Tiger Mosquito has done this year." He pointed out that control and enforcement problems should be somewhat lessened in Cook County given that a large percentage of it is covered by Mosquito Abatement Districts. (R. 282). He also indicated that over 300 tire piles in excess of 100 tires were recently discovered during survey of Chicago. (R. 118).

At the meeting, the Agency opposed the proposed rule and questioned the Board's authority to act in this matter which it perceives as a public health rather than solid waste problem. The Agency also raised questions as to the enforceability of the proposed rule, particularly the transportation section. It also pointed out that its resources for enforcement are quite limited. As an alternative, it proposed gathering data on tire accumulations, forming an inter-Agency study group with the goal of proposing regulations to be in force by 1989, and using existing authorities as needed to address localized problem areas. (Exh. 28, R. at 233-280). The Agency did not recommend any action for this breeding season to control the spread of the mosquito.

In Public Comment #6, the Agency maintained its objections, but offerred alternative language that it felt would improve the rule. The Board has accepted many of these suggestions.

The Illinois Department of Agriculture (IDA) initially opposed the proposal largely on the grounds that it covered too many small tire piles, would apply to tires on farms, could create an administrative burden for its pesticide application certification program, and had enforceability problems. The IDA supported the Agency alternative presented in P.C. #6. (Exh. 27 and attachment to P.C. #6).

Philip Mole of Sun Eco Systems generally supported tire regulation and reclamation. He pointed out that tires are a serious solid waste problem. He suggested that tires be regulated as a special waste, that persons dealing with tires be registered, that the movement of tires be tracked, and that a "generator fee schedule, to fund the chemical spraying of abandoned waste tires for the estimated 50 percent of the tires which are not moved and unaccounted for through an industrial process and/or are illegally dumped in thousands of locations throughout the State where ownership is not identified or

established." He urged the development of a strategy to reclaim tires for energy or other use, pointing out that a tire contains the energy equivalent of about two gallons of oil. (Exh. 23).

Tim Warren of DENR submitted the following information on scrap tires in Illinois:

> The Department of Energy and Natural Resources, Office of Solid Waste, is responsible for minimizing the State's dependence on landfill disposal of solid wastes. Scrap passenger and heavy duty vehicles tires constitute a component of the solid waste stream that is difficult to manage in an environmentally and economically effective manner. This is because of the dispersed nature of tire generation, the special problems whole tires create when landfilled, and the general lack of markets for used tires.
>
> * * *
>
> Using national averages, Illinois generates 11-12 million used tires annually, the majority of which are not landfilled or recycled, but stockpiled in various locations throughout the state. This is roughly equivalent to 1.6 million cubic yards of tires generated each year in the state. Landfill disposal of tires is becoming more difficult and costly, as diminishing landfill capacity allows landfill operators to be selective as to the types and quantities of materials they receive. Burial of whole tires in landfills creates operating and longterm care problems, since whole tires will "float" to the surface in a landfill, and may effect the integrity of landfill cover and capping practices. An informal survey by this Office in 1987 indicated that only a few landfills had a total prohibition on tire disposal at their facilities. Most have invoked a premium tipping fee that is two-to-four times that charged for other solid wastes.
>
> (Exh. 26)

Commissioner Mosi Kitwana said that his department is responsible for cleaning lots in Chicago. The City stores the thousands of tires it collects annually from various lots. Chicago has been attempting to purchase a shredder to deal with its accumulation which he estimated at 40,000.

He cited illegal "fly dumping" of tires on empty lots as a major problem for the City. Kitwana believes that this illegal dumping has increased as landfill costs have risen. He said that the coming of the Tiger Mosquito has given his department the opportunity to join with the Chicago Department of Health to "kill two birds with one stone." He did not believe that the City could comply immediately with the proposed regulations if they went into force and covered the City. He supported the rule and emphasized Chicago's desire to manage its tire problem. (R. 140-157).

Mr. Jay Lauterback appeared for the Illinois Tire Dealers and Retreaders Association. He stated:

> The membership consists of independent tire dealers and retreaders and many of the vendors who sell them service, supplies and equipment.
>
> We do not represent manufacturer-owned stores or department stores such as Sears, Wards and so on.
>
> Independent tire dealers, in my opinion, are responsible, small businessmen, in all matters concerning the business and particularly on social and public health matters such as the subject you are addressing today.
>
> We have members in all of the metropolitan areas of the state and in 114 other cities.
>
> We estimate that there are 1,788 independent dealers in Illinois and in addition, if you include gasoiline service stations and department stores, there must be 5,000 to 6,000 establishments that sell tires.
>
> If you conclude that the mosquito problem, in this state, at this time, is a clear and immediate public health problem, then I have to say to you that we will do all we can, as an organization, to help you overcome the problem.

In commenting on the proposal, he said that tires are generally dry when generated, but difficult to drain after becoming wet, that keeping them dry out of doors is cost prohibitive because of labor costs and the fact that a covering will not stay in place and that tire shredders and slitters are available given enough time to have orders filled. He urged

incentives to make it feasible to utilize scrap tires for energy or other purpose and estimated that there are in excess of 20 million scrap tires in Illinois. (Exh. 24).

He felt that many tire dealers would turn to tire slitters if the rule is passed and said that he was buying a slitter for his dealership. He estimated slitters to cost between $2,700 and $9,500 and shredders in the vicinity of $100,000 and up. (R. 173). He also said:

> The National Tire Dealers and Retreaders Association, of which we are affiliated, is very heavily involved in this subject. In fact, they are part of an ad hoc committee with the National Centers for Disease Control working specifically with the Asian Tiger Mosquito problem.
>
> And they have a proposal for--when I say they, the National Tire Dealers and Reschredders Association, has a proposal for what they are referring to as a tire monofill.
>
> This would be a landfill devoted exclusively to tires; and those tires would be accepted in a landfill in what you refer to as a convert form, either slit or shredded, and they would be located either above or below ground, depending on the situation.
>
> (R. 175)

The Board received comments from two manufacturers of tire conversion equipment. Among the machines mentioned was a portable shredder capable of processing 500 tires per hour (TPH) and a stationary system with an 800 TPH capacity. The cost of the systems is in the $375,000 to $400,000 range with maintenance estimated at $65,000 per million tires. (P.C. #3).

The other company produces slitters as well as shredders. A 75 TPH slitter costs $5,500. A 360 TPH mobile chopper, slitter listed at $105,000. Tire choppers ranged from $50,000 to $150,000. A two stage chopper listed at $147,000. (P.C. #1).

Ronald Lakin appeared for Lakin General Corp. He described his company's experience with the Tiger Mosquito and its cooperation with city and state officials to control the infestation. He has had a contract for mosquito control since 1987. He pointed out that he drains tires upon arrival, but keeping them drained presents a problem. (Exh. 25). A discussion about control at his facility lead to the suggestion that the rule as proposed could not necessarily be workable at all

facilities. The experts generally agreed that his type of facility could be served by a program involving weekly inspection for mosquito larvae by a properly trained inspector and treatment upon discovery of an infestation. (R. 201-232). Section 849.105 is specifically included to address situations like this by providing for alternate control plans. Lakin General is frequently the victim of people who illegally dump scrap tires at or near its facility. (R. 230).

Lakin General Corp. has the capacity to slit and shred tires. In response to a question as to whether the company could convert tires from the infested area, he replied, "That would be a very interesting concept. We handle more tires then anybody in the City of Chicago, and we have all the capability of doing all the things you are suggesting." He also pointed out that such efforts would take "time and money." (R. 227-229).

THE BOARD'S RULE AND RESPONSE TO COMMENTS

Given the clear guidance of CDC and expert testimony in this record, the Board will proceed with a regulation to address the problem during the 1988 mosquito breeding season. The Board's rule includes identifying tire piles within the State and requiring generators and receivers of used tires to keep them dry or unsuitable for mosquito breeding.

Biological Basis for Rule

The management standards in the rule are based on the following biological factors. Scrap tire movement is the primary means by which the Tiger Mosquito enters an area and spreads over wider areas. It is also apparent that this mosquito finds tires a particularly desirable breeding habitat and that it builds large populations in the tire piles. From these tire piles, it can spread into other containers. (R. 79-81; Exh. 14A, p. 1; Exh. 16A, p. 10). Limiting the mosquito population in a given area can prevent disease outbreaks even if the mosquito is present in that area. According to Dr. Moore of the CDC, tire removal alone might accomplish this goal. (R. 59).

The Tiger Mosquito breeding season may have already begun in Southern Illinois (Exh. 20, p. 1), and there is a high probability that temperature conditions for larval development will be optimal by Mid-May. (P.C. #9, p. 1). Given that tires move into Illinois from southern states and Asia, it is likely that immature mosquitoes on an earlier development timetable are going to enter Illinois this spring. (R. 44 and 221).

The Tiger Mosquito reaches adulthood from an egg in 7-14 days, depending upon various conditions. (R. 15; Exh. 9, p. 1). The mosquitoes can then produce a new generation every 20 days (Exh. 14B-18, p. 42). The eggs can be transported in tires (wet or dry) and can survive freezing to a certain extent. (R. 15;

Exh. 14B-20, 14B-19). A hard winter, may cut back the population in areas like Chicago, allowing possible eradication. (R. 280).

Postponement of Regulations of Interstate and Intrastate Tire Transport

The most sensible approach to the Tiger Mosquito problem would begin with the federal government restricting the interstate movement of tires that have not been certified as being dry, clean, and free of insects. The federal government has required this as of January 1, 1988 for used tire casings coming into the country from Asia (Exh. 6). This was after the Tiger Mosquito was well established in the Gulf States. As of this date, the U.S. Public Health Service (PHS) through the Food and Drug Administrative (FDA) has not proposed regulations on the interstate transportation of tires as recommended by CDC in Exhibit 5.

Because the mosquito can be spread from loads of contaminated tires in transit in the State, effective control will eventually require regulation of tires in interstate commerce, including tires shipped into or across the State. At a minimum this will require that tires be shipped dry and covered. A certificate of inspection from authorities in Illinois, other states or the federal government may also be necessary. This poses a question as to whether the State has the authority to regulate this interstate commerce.

This type of quarantine or sanitary regulation is common with respect to the shipment of agricultural products. Generally a state, in the exercise of the police power reserved to it, and in the absence of conflicting federal regulations, may pass reasonable sanitary and quarantine laws which are valid, although to a certain extent they necessarily affect interstate and foreign commerce. Mintz v. Baldwin 53 S.Ct. 611, 289 U.S. 346, 77 L.Ed. 1246; Kassel v. Consolidated Freightways, 101 S.Ct. 1309, 450 U.S. 662, 67 L.Ed. 2d 580.

The federal government has authority to promulgate regulations affecting interstate and foreign commerce in contaminated tires. 42 CFR 71.41 requires inspection of foreign shipments to determine if there is insect infestation requiring measures to prevent the introduction, transmission or spread of communicable disease. 42 CFR 71.54 prohibits the importation of arthropods capable of being a host or vector of human disease. 21 CFR 1250.49 requires that "conveyances" be kept free of mosquitos while in transit, and that they be placed out of service until effectively treated for the destruction of vermin. 21 CFR 1250.3(e) defines "conveyance" to include any land carrier. FDA has not yet used this authority to regulate tire shipments.

These regulations are derived from Section 361 of the Public

Health Service Act (42 U.S.C.A. 264). This authorizes the Surgeon General to make regulations providing for inspection and extermination as necessary to prevent the spread of communicable disease into the United States or between states. There is no indication in either the statute or the regulations that federal regulations are to exclude state regulation. Indeed, 42 U.S.C.A. 243(a) requires that the federal government "cooperate with and aid State and local authorities in the enforcement of their quarantine and other health regulations."

A regulation requiring that all used tires in transit within, through or into Illinois be shipped dry and covered, and be accompanied by a certificate of inspection would be wholly consistent with federal regulations, would be well within the State's police power and would be a valid regulation of interstate commerce.

The Board's original proposal required that all scrap tires shipped through or within Illinois be dry and covered. There is little question that the State of Illinois can legally impose such a requirement. However, it would be far more desirable for the FDA to impose a regulation with national uniformity. As stated by Dr. Craig:

> My only regret is that nearly every state is enacting similar (but not identical) rules and the national picture for the used tire industry is chaotic. We must all work toward a more uniform set of rules nationally.

(Exh. 14A)

The Board has not imposed this requirement in the emergency rule. There has not been sufficient time to adequately consider the State's ability to physically enforce such a regulation which would require the close cooperation of a number of agencies, including the State Police. The Board believes that the rule as adopted will be largely effective without this aspect since tires must be drained upon receipt. However, such a regulation is clearly desirable to prevent reinfestation of Illinois and other states. This matter will be considered at a later date in full consultation with other agencies.

Size of Accumulations Covered by Standards

A significant difference in the adopted rule is that the storage requirements apply only to accumulation, which exceed 50 scrap tires. This change was requested by the Agency and endorsed by the Illinois Department of Public Health and Illinois Department of Agriculture; it also reflects the Board's regulatory intention that this emergency rule apply only to relatively major scrap tire accumulations. In addition, the Board has specifically exempted accumulations which result from

personal, non-business activities, as well as agricultural, horticultural, livestock raising activities.

Several persons opposed limiting the number of tires in a regulated accumulation and leaving them to be controlled by local authorities. The opposition of these individuals centered around several concerns. These included the fact that Mosquitoes do not distinguish between large and small tire accumulations, and that local authorities lack either the funds or expertise to approach this problem. (R. 60 and 83, Exh. 20, and P.C. #10).

In reaching its conclusion, the Board has considered the concerns of the other agencies. The IDPH (P.C. #7 and attachments) has convinced the Board that small accumulations will eventually be acted on by local authorities with the assistance of IDPH.

IDPH has developed a proposal involving education, control and surveillance to deal with vector control in Illinois. The proposal states:

> The appearance of the tiger mosquito and resulting concern among the public and scientists create both an opportunity and a responsibility to intensify these activities with the expectation of more widespread participation than in the past.

The following excerpts from the comments detail IDPH's reasons for believing that the mosquito problem can be addressed in small accumulations without a Board rule:

> With regard to small commercial activities and personal activities which result in tire accumulations, the Department feels that local health department and State's Attorneys' authorities under nuisance statutes are adequate to address any problems that may be found.
>
> * * *
>
> Government officials are given the authority under the Public Nuisances Act (Chap. 100 ½, Sec. 221, Para. 26) to cite individuals who are creating a nuisance that "is offensive or dangerous to the health of individuals or the public." This approach was used in 1986 and 1987 by the Franklin-Williamson Health Department to abate a mosquito nuisance created by improper water management at a carbon-recovery mine. The county health department filed a nuisance complaint with

> the State's Attorney's, who then fined the operator of the mine $25 per day until the mosquito nuisance was controlled or eliminated. Ultimately, the owner hired a mosquito control contractor and drained much of the standing water at the mine site. In addition, under Local Health Department statutes (Public Health and Safety, Ill. Rev. Stat. 1985, Ch. 111 ½, para. 20c.01) and the Standards for Local Health Departments, local health departments must perform inspections, investigations, surveillance, and enforcement of the provisions of the Nuisance Program as required by Sec. III. Rule 3.92. There are nuisance statutes that a local health department can use to control the breeding of mosquitoes in tire stockpiles within its jurisdiction. However, local officials must believe that this is a problem that is a high priority. Although local officials can control specific local problems, the massive accumulation of tire casings in Illinois can only be addressed by a statewide program.
>
> * * *
>
> In 1927, statutes permitting the formation of mosquito abatement districts (MADs) were passed. This legislation gives MADs the authority to: 1) levy property taxes to support mosquito control; and 2) abate as nuisances all stagnant pools of water and other breeding places for mosquitoes, flies, or other insects (Chap. 111 ½, Sec. 7 Para. 80). In the past, MADs have worked with local health departments to remove breeding sites for mosquitoes by citing property owners under nuisance statutes.
>
> It is important to note that there are about 375 Public Mosquito Pest Control Applicators certified by the Illinois Department of Agriculture who are not associated with MADs of IDPH. These individuals represent a reserve of personnel with at least some training in mosquito control, who could help provide information to the public.

The Board's requirements apply to any accumulations of over 50 scrap tires that are accumulated for business or commercial purposes (other than agricultural) even though such an operation happens to be located on agricultural land. With regard to smaller scrap tire accumulations, it is more appropriate, at this

time, for the Department of Public Health or local authorities to investigate and combat any infestations at such sites.

The rule does not include tire accumulations under the jurisdiction of local governmental units and entities which are not conducting a business or commercial activity resulting in tire accumulations. This exemption along with the 50-tire provision will allow State agencies to concentrate their efforts more effectively in areas with known infestations. The Board presumes that local authorities will exercise due concern for the welfare of their citizens in managing such accumulations.

Definitions

Section 849.101 defines terms that are used in the rule. Any term not defined by this Section shall be given the same meaning as it is defined by the Act, unless, the context clearly requires otherwise. A scrap tire is a tire that has been removed from use on a motor vehicle and has not been separated from the wheel or rim. A scrap tire is "generated" or becomes a scrap tire at the time and place it is removed from a wheel. Scrap tires are commonly generated by tire dealers, and at gas stations and department stores.

For the purpose of the rules adopted today, the Board is regulating scrap tires as a waste. However, other than the addition of these rules, it is not the Board's intention at this time to either broaden or narrow the current applicability of the Act, or regulations promulgated thereunder, to tires or scrap tires. Any further altering of the current law with respect to tires is more appropriate in a subsequent, permanent rulemaking legislation.

Reporting Requirement

The reporting requirement will generate a data base on the location and size of tire accumulations in the State. This will allow state and local officials to more readily assess the extent of the infestation in the State. It will also provide a good idea of the magnitude of the effort needed to address the solid waste problem caused by abandoned tires. No one is exempt from this reporting requirement.

The version of the rule that the Board proposed on April 7th, 1988, required that all reports concerning scrap tires be submitted to the Agency by July 1, 1988. Through testimony and comments, the Agency asserted that the Board's reporting requirement, as originally proposed, was administratively unworkable. Instead, the Agency proposed deadlines which would stagger the submission of these reports. According to the Agency, such staggering will allow the Agency to develop a system to properly assimilate the reports it will receive under the rule. The Board has altered the rule so as to address the

Agency's concern and at the same time set forth time frames which are consistent with the 150-day effective period for this rule. In summary, accumulations of scrap tires must be reported to the Agency on the following schedule: more then 50,000 scrap tires, July 1, 1988; between 5,000 and 50,000 scrap tires, August 1, 1988; between 50 and 5000 scrap tires, September 1. The Board has slightly compressed the time frames requested by the Agency so that data will be available for consideration during the development of a permanent rule. The substantive requirements of the report have essentially remained unchanged from the April 7th version of the rule. However, some rearrangement of the subsections has occurred for improved efficiency in the regulatory language.

Standards for the Management of Scrap Tires

Section 849.104 and 849.105 set forth management standards on the storage of scrap tires which became scrap tires (are "generated") or were received after May 15, 1988. The May 15 date is two weeks later than the originally proposed date. This will allow more time for compliance. This Section deliberately excludes scrap tires which were stored or stockpiled before May 15, 1988. In the long run, it will be desirable to address these scrap tires; however, it is the more recent accumulations of scrap tires at active sites which are most likely to become infested with the mosquito. Newly generated scrap tires are included since they are being currently handled and can be readily and properly stored to prevent the development of mosquitoes. This will prevent magnification of the current problem of large accumulations of stored tires.

The time frames in Section 849.104 are intended to require certain actions quickly enough to deny mosquitoes time to develop. For example a newly generated tire which is "converted" seven days after being removed from a wheel is unlikely to produce adult mosquitoes. Section 849.104 (b) provides several options for the management of scrap tires received after May 15, 1988. This recognizes that some persons with scrap tires will find it impossible to store tires in a dry manner. These persons must drain the tires on the day of receipt. This is necessary because some tires received, especially those from out of state, may contain water with larvae or pupae. Drained tires may be treated or converted within seven days.

Persons receiving scrap tires from any source will be required to drain them or otherwise prevent their accumulating water. Draining can be accomplished by dipping the water out, using a suction device, such as a large shopvac, or physically cutting or shredding the tires. The Board notes that the draining requirement is automatically accomplished if a scrap tire in a is landfilled or otherwise converted on the day or receipt. As a practical matter, it will be virtually impossible to drain a tire to the point where it contains no moisture. The

Board expects that a "drained" tire may contain up to one-fourth inch of water when stood vertically. The Board notes that "slit" tires may still hold water if they are not properly stacked. (R. 185; Exh. 26, p. 2). It is assumed that to be in compliance, slit tires must be stacked so as not to hold water.

Operations may substitute an insect treatment program for dry storage. Treatment for the prevention of mosquito development may include the use of a number of pesticides. The pesticides must be properly applied and caution should be used to avoid those to which the Tiger Mosquito has developed a high degree of resistance. Treatment must occur often enough to remain effective. The selected pesticide or toxicant must also be able to penetrate the tire piles and reach the insides of stored scrap tires. Certified pesticide applicators must apply pesticies. IDPH and IDA have information for certification, which is possible for employees of a business. Information on becoming a certified pesticide applicator is available from the Illinois Department of Public Health, Division of Environmental Health in Springfield. IDPH also has available a booklet called, "Mosquitoes in Illinois: Recommendations for Prevention and Control". (Exh. 21D).

A variety of pesticides are available for mosquito control. Some are persistent (effective) for over 120 days when applied to tires. Some are in granular form and can be either placed into or onto tires with a gloved hand or small implement or blown into tires with a backpack blower. In Puerto Rico, a granular formulation of temephos gave continuous larval control in used automobile tires for up to 164 days depending upon the amount used. (Exh. 16B-4). Since one week is sufficient for mosquito development, treatment is required within a week. A given tire on a tire pile need not be treated again until an infestation is noticed or the pesticide is reaching the end of its effective life, whichever occurs first. It is likely that one or two treatments with the right agent will suffice at a given pile during 1988 provided that the pesticide reaches most tires in a pile.

The INHS has experimented with pesticide treatment on stacked tires. (Exh. 16B-3). Researchers discovered that corncob granules effectively penetrate random, shingle and column stacks. Persons in local governments faced with a large tire accumulation may find it feasible to have the pile treated in this manner with a long-lived pesticide such as temephos or one of the other approved chemicals. Persons with short-term requirements or in need of frequent applications or extra safety could use a bacterial pesticide such as B.t.i. The cost of the granules to treat 1000 tires for a 90-day period was given at about $2.00 for temephos and $5.70 to $6.90 for B.t.i. The cost of having them applied increases the amount. The cost of managing the Tiger Mosquito in a "worst case scenario" at a tire processing facility containing up to 65,000 tires at a given time

was estimated at about $6,000 for the 1988 season (attachment to Exh. 25). An accumulation without constant turnover could probably be managed for less.

Given the long-term effectiveness of certain granular and pelletized pesticides, persons who generate scrap tires may find it useful to cooperate in treating their tires. A certified applicator could treat newly generated tires once a week at a number of dealerships. A generator could also have a certified applicator place pesticide granules into individual tires at the end of each day.

Individual tires or those in illegal dumps could also be treated in this manner until the resources exist to collect and convert them. Some Mosquito abatement districts routinely treat such tires.

The Board notes that the rule adopted today requires that the scrap tires be treated or converted within seven days after receipt or generation. The April 7th version of the rule required such actions within six days. The adopted rule fits a standard work week. Also, the Board adopted the Agency's recommendation that the Board provide a method of compliance which entails the draining of water from tires within 24 hours after every precipitation event if they are not treated with a pesticide or properly converted.

Section 849.105 is designed to give persons with over 5000 tires the ability to devise their own mosquito management plans. The 5000 tire cut-off comes from the comments of the Agency, IDPH and IDA. This Section recognizes that some persons may have unique situations or circumstances that are not readily or efficiently handled by the general provisions. This Section does not allow for one to utilize this provision in order to be subject to less stringent management requirements. On the contrary, the Department of Public Health must expressly determine that the proposed alternative program is expected to deliver results that are substantially equivalent to results which would be realized if the person complied with Section 849.104. Once IDPH approves a program and it is filed with the Agency, the alternative program is considered accepted and acceptable. If a program does not meet with IDPH approval, it will not be considered complete by the Agency. This Section is specifically available to handle situations such as that of Lakin General Corp. which was discussed in detail at hearing (R. 198-219).

Given the Agency's enforcement concerns, Section 849.104 requires persons to keep some records as to when tires are received, generated, and treated. It would be particularly useful if tires accumulated prior to May 15 are separated in some fashion from those falling under the rule. Records may be kept on a lot or group basis rather than on individual tires.

Enforcement Concerns

In the record, the Agency has expressed concerns that this rule would put a heavy burden of enforcement on the Agency. The Agency, in particular, stated that it did not have the resources to marshal an inspection and enforcement effort. While the Board fully appreciates the Agency's concern, it also notes that this regulation can also be directly enforced by the Attorney General, states attorneys and individual citizens. And as with any regulatory effort, much of the compliance is achieved on a voluntary basis, particularly when, as here, the regulation itself contains the instructions to those regulated as to what control methods are to be used.

Some witnesses expressed the belief that this rule will receive a substantial amount of voluntary compliance (R. 78, 106). Dr. Craig pointed out that the rule will stimulate positive activity, "The presence of the rules on the books will make a lot of people look at tires that they would never look at." (R. 281).

The Board also believes that the regulation will indirectly enhance the strategies of other state and local agencies in their own participatory efforts, including surveillance, education, inspection, nuisance, enforcement, research, reporting, direct mosquito control, etc.

The Board expects the Agency to exercise its prosecutorial discretion and give priority of enforcement to accumulations that present the greatest threat. Similarly, the Board notes that the Agency may delegate enforcement authority to local authorities pursuant to Section 4(r). This avenue may aid the Agency in enforcing this rule. The use of Section 34 authority to "seal" a facility is expected only under extreme conditions.

The Board realizes that an ideal program would require that all tires be properly stored or disposed no matter where they are or when they were received. Any unit of local government with appropriate authority can take additional steps to control any existing or potential infestation. A city with an infested pile within its jurisdiction could treat the pile itself or require the owner to properly store or dispose an accumulation. Given that most accumulations in the State are not likely to be currently infested, leaving further immediate action to the local authorities makes sense. They will be able to take action appropriate to local conditions. At a future date, legislation or a permanent rule can address other possibilities.

The Board also believes that local authorities can best control the breeding sites in neighborhoods. Public education and local efforts will have the best chance of controlling discarded containers near homes and schools. Such containers are

integral to the spread of the Tiger Mosquito from large tire piles.

The Agency and IDPH have recommended the formation of an interagency task force to develop further plans in this area. Such a group should at a minimum include the Agency, IDPH, IDA, DENR's Office of Solid Waste and Renewable Resources, and DENR's Illinois Natural History Survey. The Board will participate in such discussions as are appropriate to its role.

The IDPH proposal (attached to P.C. #7) contains a valuable outline of an approach to the problem of vector control. The INHS attached to P.C. # 9 a list of research projects that would among other items: provide an evaluation of pesticide and common household products (such as soaps, salt and oil) for controlling container mosquitoes; supply technical assistance to local governments and IDPH; determine the distribution of the Tiger Mosquito in Chicago, St. Clair County; and study the impact of weather and microclimate on the Tiger Mosquito. The record shows that as with most State programs, the currently available resources for the Agency, IDPH and DENR in this area are quite limited.

For the development of legislation or a permanent rule some coordination is needed to develop policy on this matter. In terms of a permanent rule, the Board should receive a proposal from interested persons or agencies no later than November 1, 1988. This would enable a rule to be in force by Spring of 1989 so as to be useful during the 1989 breeding season.

Given the cost and availability of pesticides and the potential for using tire converting equipment such as slitters, detailed in this opinion, the Board believes that compliance with this emergency rule is economically reasonable and technically feasible. The Board notes that the more limited scope of the adopted rule in relation to the proposed rule, has greatly reduced the cost of overall implementation and number of affected individuals and businesses.

The Board notes that any effort to slow the spread of the Tiger Mosquito by eliminating discarded tire piles will have other benefits. The record is replete with references to the fact that cleaning up tires will help control the Tree Hole Mosquito and Northern House Mosquito both of which currently spread disease in Illinois. A rule governing tire accumulations would be in the public interest even if the Tiger Mosquito did not exist.

ORDER

The Board hereby adopts as final the following emergency rules to be filed with the Secretary of State.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER M: MANAGEMENT OF SCRAP TIRES

PART 849
MANAGEMENT OF SCRAP TIRES

Section

Authority: Implementing Section 22 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1985, ch. 111 ½, pars. 1022 and 1027)

(Source: Emergency rules adopted in R88-12 at 12 Ill. Reg. , effective May 1, 1988, for a maximum of 150 days, which is September 28, 1988.)

Section 849.101 Definitions

Except hereinafter stated, and unless a different meaning of a word or term is clear from its context, the definitions of words or terms as are used in this Part shall be the same as those used in the Environmental Protection Act.

"Converted tire" means a tire which has been altered so that it is no longer capable of holding accumulations of rainwater. Converted tires include but are not limited to tires which have been: shreaded; chopped; converted to playground use by fixing into position and drilling holes of sufficient size to allow drainage; or, filled with cement or similar material.

"New Tire" means a tire which has never been placed on a motor vehicle for use. However, a new tire is considered to be a scrap tire if it is commingled with or placed within an accumulation of scrap tires.

"Scrap Tire" means a tire which has been removed from use on a motor vehicle and separated from the wheel (rim). Any tire which is not a new tire is considered to be a scrap tire until it is placed on a motor vehicle wheel (rim). For the purposes of this part only, a scrap tire is considered to be a waste.

"Storage" means the containment of waste, either on a

temporary basis or for a period of years, in such a manner as not to constitute disposal of such waste.

"Tire" means a hollow ring, made of rubber or similar material, which is intended to be placed on the wheel (rim) of a motor vehicle, and which, when stored or discarded, is capable of holding accumulations of water.

Section 849.102 Severability

If any provision of these rules or regulations is adjudged invalid, or if the application thereof to any person or in any circumstance is adjudged invalid, such invalidity shall not affect the validity of this Part as a whole or of any Subpart, Section, Subsection, Sentence or Clause thereof not adjudged invalid.

Section 849.103 Reporting of Scrap Tire Piles and Disposition

a) On or before July 1, 1988, any person who accumulates, or who owns property which contains more than 50,000 scrap tires shall report to the Illinois Environmental Protection Agency (Agency) the information required in subsection (d).

b) On or before August 1, 1988 any person who accumulates or who owns property which contains an accumulation of more than 5,000, but not more than 50,000 scrap tires shall report to the Agency the information required in subsection (d).

c) On or before September 1, 1988, any person who accumulates, or who owns property which contains an accumulation of more than 50, but not more than 5000, scrap or used tires shall report to the Agency the information required in subsection (d).

d) Information required:

1) The legal name and post office address of the person making the report,

2) The location of the accumulation including street address, municipality or township, county, and if appropriate, descriptions of rural locations,

3) The approximate number of scrap tires at the location,

4) Whether the person ships or receives scrap tires to or from other locations,

5) What use or disposition a person makes or plans to make of the scrap tires, and

6) The manner in which the accumulation is stored prior to such use or disposition.

e) Reports required by this Section shall be sent to:

Illinois Environmental Protection Agency
Division of Land Pollution Control
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

Section 849.104 Management Standards for the Storage of Scrap Tires

a) This Section applies only to accumulations of scrap tires generated or received on and after May 15, 1988. This section does not apply to scrap tires accumulated solely as a result of personal activities and agricultural, horticultural, and livestock-raising activities.

b) Except as otherwise provided in Section 849.105, no person shall store scrap tires accumulating from that person's commercial or business activities where such accumulation exceeds 50 tires, unless the tires are either:

1) Drained of water on the day of generation or receipt and kept dry by being:

A) Placed within a closed container or structure; or

B) Covered by impermeable material; or

C) Drained or otherwise managed so as to remove water within 24 hours after each precipitation event; or

2) Drained of water on the day of generation or receipt and processed into converted tires within seven days: or

3) Drained of water on the day of generation or receipt and treated to prevent mosquito development by a pesticide applicator certified by the Department of Agriculture pursuant to the Illinois Pesticide Act of 1979, as amended (Ill. Rev. Stat. 1985, ch. 5, par. 801 et seq.) within seven days of generation or receipt and as often as necessary

thereafter to prevent mosquito development taking into account the persistence (effective life) of the pesticide utilized.

c) Any person who chooses to utilize the provisions of subsection (b)(2) and (b)(3) above, for the management of scrap tires shall maintain documentation concerning dates of receipt and dates and methods of tire conversion and/or treatment.

Section 849.105 Alternate Management Programs For Storage of Scrap Tires

a) A person with an accumulation of 5000 or more scrap tires may employ mosquito control or management programs different than those specified in Section 849.104 if, and only if, that person files a complete alternative program with the Agency which details the control or management measures which will be taken. An alternative program is complete only if it is accompanied by a statement from the Illinois Department of Public Health that such program is expected to achieve results substantially equivalent to those which would be achieved by full compliance with the requirements of Section 849.104.

b) Requests for statements of substantial equivalency shall be submitted to the Illinois Department of Public Health and shall be accompanied by information sufficient to allow the Department to assess the effectiveness of the alternative program. Such requests shall be sent to:

Division of Environmental Health
Office of Health Protection
Illinois Department of Public Health
525 W. Jefferson Street
Springfield, IL 62761

IT IS SO ORDERED.

Board Member J.D. Dumelle concurred.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 21st day of April, 1988 by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board