



Environmental Appeal Board

Fourth Floor 747 Fort Street
Victoria British Columbia
Telephone: (250) 387-3464
Facsimile: (250) 356-9923

Mailing Address:
PO Box 9425 Stn Prov Govt
Victoria BC V8W 9V1

APPEAL NOS. 2003-PES-012(a); 2003-PES-013(a)

In the matter of an appeal under section 15 of the *Pesticide Control Act*, R.S.B.C. 1996, c. 360.

BETWEEN: Robert Stacey on behalf of the Cowichan Beekeepers and
Stan Reist on behalf of the Nanaimo Beekeepers Association **APPELLANTS**

AND: Administrator, Pesticide Control Act **RESPONDENT**

AND: British Columbia Minister of Health Services **THIRD PARTY**

BEFORE: A Panel of the Environmental Appeal Board
Alan Andison, Chair

DATE: Conducted by way of written submissions
concluding on December 16, 2003

APPEARING: For the Appellants: Robert Stacey, Stan Reist
For the Respondent: Christine Houghton
For the Third Party: Kersteen Johnston

APPEALS

Robert Stacey, on behalf of the Cowichan Beekeepers, and Stan Reist, on behalf of the Nanaimo Beekeepers Association, filed separate appeals against the August 15, 2003 decision of Christine Houghton, Administrator, Pesticide Control Act (the "Administrator") to issue Pesticide Use Permit No. 776-001-2003/2004 (the "Permit") to the British Columbia Minister of Health Services.

The Permit authorizes the application of pesticides for the purpose of controlling mosquito species on public or private land (including water bodies), in areas of British Columbia where there is a risk to human health from the West Nile virus.

The Environmental Appeal Board has the authority to hear these appeals pursuant to section 11 of the *Environment Management Act* and section 15 of the *Pesticide Control Act* (the "Act"). The Board's authority under section 15(7) of the *Act* is as follows:

- 15** (7) On an appeal, the appeal board may
- (a) send the matter back to the person who made the decision being appealed, with directions,
 - (b) confirm, reverse or vary the decision being appealed, or
 - (c) make any decision that the person whose decision is appealed could have made, and that the board considers appropriate in the circumstances.

The Appellants ask the Board to remove from the Permit those pesticides that target adult mosquitoes (adulticides). In the alternative, the Appellants seek the addition of various conditions and/or requirements to address their specific concerns.

The appeals were conducted by way of written submissions.

BACKGROUND

According to the evidence before the Board, the West Nile virus is a mosquito-borne virus. Mosquitoes transmit the virus after becoming infected by feeding on the blood of birds which carry the virus. The virus can be transmitted to humans through bites by infected mosquitoes. Since 1999, the virus has been spreading across North America and there are concerns that it may make its way into British Columbia. As a result of this concern, the Minister of Health Services applied for a pesticide use permit on August 7, 2003, in anticipation of a possible need to control mosquito populations and prevent the spread of the virus to humans.

The cover letter to the permit application states that the permit would be used "as part of an integrated pest management program, where there is evidence that a mosquito population is or has the potential to contribute to a public health threat to British Columbians." It states further:

Should West Nile Virus reach British Columbia this summer, mosquitoes may become more than just a nuisance, as some may cause West Nile Virus infections that can lead to serious illness.

At this time, there is no evidence of the virus in any region of the province. The province has established an extensive surveillance program to test mosquitoes and dead cows, ravens, magpies and jays (the family of birds most susceptible to the disease) for West Nile Virus. This will ensure public health officials are aware as soon as the virus is found for the first time in British Columbia.

This permit would ensure that there is a legal mechanism in place to allow the application of pesticides should surveillance show that West Nile Virus poses a threat to the health of British Columbians. These actions would not be intended to embark on a wide scale unnecessary

application of pesticides, nor would it serve as a means to control nuisance mosquitoes.

Application of pesticides by local governments or their contractors would only occur on the recommendation of the local medial health officer, in consultation with the Provincial Health Officer, local communities and other ministries, such as the Ministry of Water, Land and Air Protection (WLAP), to determine ecological consequences of reducing the mosquito population.

On August 15, 2003, the Administrator issued the Permit to the Minister of Health Services. The Permit is valid until December 31, 2004. Section 2 of the Permit authorizes pesticides with the following active ingredients using the following application methods:

2 Pesticides and Application Methods Authorized

The following pesticide active ingredients and application methods are authorized for use:

Active Ingredient	Mosquito Stage	Application Method(s)
<i>Bacillus thuringiensis</i> subsp. <i>Israelensis</i> (Bti)	Mosquito Larvae	Ground or aerial
methoprene	Mosquito Larvae	Ground
malathion	Mosquito Adults	Ground or aerial
Synergized pyrethrins or synthetic pyrethroids	Mosquito Adults	Ground

Note: The selection of pesticide active ingredients and application methods shall be determined by the permit holder.

Section 7 of the Permit sets out the following "Pesticide Use Restrictions":

- 7.1. All pesticides shall be applied in a manner that protects domestic water sources.
- 7.2. Any spraying for adult mosquito control shall maintain a 10-metre (measured horizontally) pesticide-free zone along all water bodies. Appropriate sized buffer zones must be established to protect the 10-metre pesticide-free zone during mosquito adulticide [pesticides targeting the adult stage] applications, and the boundaries of the buffer zone must be clearly visible during applications.

- 7.3. Larvicides [pesticides targeting the larvae stage] may only be applied to water bodies where water dip samples have confirmed the presence of mosquito larvae.
- 7.4. Products containing Bti may not be used in permanent fish bearing waters or in waters that have permanent direct surface water connections with fish bearing waters. A local representative of Fisheries and Oceans Canada must be consulted where the fisheries status of a water body is unknown.
- 7.5. Bti may not be applied to flowing water or to water where fish are present.
- 7.6. Products containing methoprene may only be used in storm water catch basins or human made self-contained water bodies.
- 7.7. The effectiveness of methoprene in preventing mosquitoes from developing to the adult stage shall be monitored.
- 7.8. Pesticides must only be applied at times and under circumstances that minimize the exposure to the public.
- 7.9. Registered beekeepers in the area of proposed spraying of mosquito adulticides must be contacted to determine whether bee colonies may be affected and methods for minimizing any impacts.

The Permit also includes Appendices A, B & C.

Appendix A is most relevant to these appeals. It is titled "List of Registered Pest Control Products." It lists the pesticide trade name, its active ingredient(s), pest control product number, application rate and application method. Of that list, 10 of the authorized products are said to target mosquitoes at the "larvae stage," and 8 target mosquitos at the "adult stage." The products that target mosquitoes in the adult stage contain either malathion, pyrethrins or a synthetic pyrethroid (e.g., resmethrin).

Appendix B includes the response levels that trigger the pesticide application through a protocol-based system from Level 0 (virus activity unlikely) to Level III (single or multiple confirmed cases of infection). Appendix C lays out the aquatic guidelines when applying larvicides or adulticides.

Finally, page one of the Permit sets out the public notification requirements. It states:

The public notification procedures described in Section 16 of the *Pesticide Control Act* Regulation are replaced with the following directions concerning public notification of the issuance of this permit:

Information bulletins shall be sent by August 22, 2003, to news outlets in British Columbia using the government news release system. The information in the bulletins shall include the following: permit number; permit holder; permit holder contact information; purpose of use; how the permit will be administered; methods and location of potential pesticide application; common names of pesticides which could be applied under the permit; commencement and completion dates; and where the permit may be viewed on a government Web site.

In addition, the Permit sets out the public notification requirements to be followed prior to treatments under the Permit:

5 Notification

- 5.1 The permittee shall ensure that prior to the start of each project conducted under this permit (e.g., within each municipality or Regional District) in each year of the permit, that local residents have been notified of this permit and where it may be viewed, by a placement of a notice in a local newspaper or by some other method of notification.
- 5.2 The permittee shall ensure that prior to the start of each project conducted under this permit (e.g., within each municipality or Regional District) in each year of the permit, that notification is provided to the Administrator of the *Pesticide Control Act*. Notification shall include a description of the treatment area, and the pesticides and application methods to be used.
- 5.3 All personnel applying pesticides under this permit are to be provided copies of the conditions of pesticide use.
- 5.4 Prior to ground based adulticiding applications, signs advising of the pesticide use shall be posted at the main access points to the treatment area, at least 24 hours prior to the pesticide use.

On September 12, 2003, the Appellants appealed the issuance of the Permit. Their Notices of Appeal are substantially the same. They appeal on the grounds that:

We believe that the permit, contrary to directives by the Pest Management Regulatory Agency ... does not adequately protect non-target insects, especially honeybees.

In later submissions, the Appellants state that the Permit is "flawed" for the following reasons:

- the Permit does not explicitly include the pesticide control product numbers of approved pesticides [they are listed in an appendix];

- it is questionable whether there was sufficient public consultation requesting site-specific information for a pesticide authorization of such broad scope;
- the use of adulticides, as currently authorized under the Permit, represents an unreasonable adverse risk with no demonstrated efficacy in reducing the incidence of West Nile virus;
- the Permit relieves the holder from financial and legal responsibility for damage caused while working under the Permit without adequately protecting public and private interests;
- requirements, restrictions and conditions of the Permit are insufficient to prevent an unreasonable adverse impact; and
- the terms of the Permit are vague with respect to when the Permit can be activated.

The Appellants ask for the Permit to be amended by “striking” the approval of adulticides from the Permit. If they are not struck, the Appellants seek the addition of various conditions and/or requirements to address specific concerns.

ISSUES

The Panel has considered the Appellants evidence and arguments under the following issues:

1. Whether the application of adulticides, as currently authorized by the Permit, creates an “unreasonable adverse effect” and should be removed from the Permit.
2. Whether the Permit should be amended to include additional conditions, restrictions or requirements.
3. Whether there has been, and will continue to be, inadequate public consultation in relation to the Permit and the treatments authorized by the Permit.

RELEVANT LEGISLATION & CASE LAW

The relevant provisions of the *Act* are as follows:

Pesticide must be applied in accordance with permit or approved plan

- 6 (1) Except as provided in the regulations, a person must not apply a pesticide to a body of water or an area of land unless the person
 - (a) holds a permit or approved pest management plan, and

- (b) applies the pesticide in accordance with the terms of the permit or approved pest management plan.
- (2) An application for a permit or the approval of a pest management plan must
 - (a) be made to the administrator,
 - (b) be in the form required by the administrator,
 - (c) contain the information prescribed by regulation and any other information required by the administrator, and
 - (d) be accompanied by the applicable fee established by regulation.
- (3) The administrator
 - (a) may issue a permit or approve a pest management plan if satisfied that
 - (i) the applicant meets the prescribed requirements, and
 - (ii) the pesticide application authorized by the permit or plan will not cause an unreasonable adverse effect, and
 - (b) may include requirements, restrictions and conditions as terms of the permit or pest management plan.

Powers of administrator

- 12** (2) The administrator has the powers necessary to carry out this Act and the regulations and, without limiting those powers, may do any of the following:
- (a) determine in a particular instance what constitutes an unreasonable adverse effect;

...

In addition, section 2(1) of the *Pesticide Control Act Regulation*, BC Reg. 319/81 (the "*Regulation*") states that "no person shall use a pesticide in a manner that would cause an unreasonable adverse effect." Section 1 of the *Act* defines "adverse effect" as "an effect that results in damage to humans or the environment."

The public notification procedures are set out in the Regulation. Specifically, sections 16 and 18 provide as follows:

Section 16 states:

Application for a use permit

- 16** (1)...

- (2) Unless otherwise directed by the administrator, the prospective applicant for a use permit shall publish a notice of the contents of the proposed application in a newspaper circulated in the place where the site of the proposed application of pesticide is located.
- (3) Publication under subsection (2) shall be within 45 days of the issue of the application number by the administrator.
- (4) The notice under subsection (2) shall bear the heading "APPLICATION FOR PESTICIDE USE PERMIT" in 18 pt. or larger, medium or bold face type, cover a minimum area of 40 sq. cm., and contain the following information:
 - (a) application number;
 - (b) name, address and telephone number of the permit applicant;
 - (c) purpose of pesticide use;
 - (d) methods of pesticide application;
 - (e) location and area of treatment site;
 - (f) pesticide common name and trade name;
 - (g) proposed project commencement and completion dates;
 - (h) the location where copies of the permit application and maps of the treatment area may be examined in detail;
 - (i) the paragraph

A person wishing to contribute information about the site for the evaluation of this application for a use permit must send written copies of this information to both the applicant and the regional manager of the Pesticide Control Program (address to be specified) within 30 days of the publication of this notice.

- (5) A person who has information about the site of the proposed use of pesticide that he or she considers useful in the evaluation of the application for the use permit shall submit that information in writing to both the relevant regional manager and the applicant for the use permit within 30 days of the date the notice was published under subsection (2).

...

Section 18 states:

- 18** (1) It is a term of a permit that the permittee will, without delay, make a copy of the permit and any relevant maps available for inspection by the public within the vicinity of the location where the pesticide is to be used.

- (2) On issuing a permit, the administrator may require as a term of the permit that the permittee comply without delay with one or more of the following:
 - (a) post all or part of the permit or a copy of all or part of the permit in a conspicuous place where the pesticide is to be used;
 - (b) publish all or part of the permit in one or more newspapers with local distribution;
 - (c) publish all or part of the permit in the Gazette;
 - (d) provide a copy of the permit to, or serve notice on, any person whose rights may be affected by the use of the pesticide authorized by the permit.
- (3) The regional manager shall, as soon as practical, provide a copy of the use permit to each person who submitted information under section 16(5) in relation to the application for that use permit.

DISCUSSION AND ANALYSIS

1. **Whether the application of adulticides, as currently authorized by the Permit, creates an “unreasonable adverse effect” and should be removed from the Permit.**

The B.C. Court of Appeal in *Canadian Earthcare Society v. British Columbia (Environmental Appeal Board)* (1988), 3 C.E.L.R. (NS) 55 (B.C.C.A.) has ruled that the Environmental Appeal Board can consider a registered pesticide to be generally safe when used in accordance with its label. However, it is also clear that the fact that a pesticide is federally registered does not mean that it can never cause an unreasonable adverse effect.

The B.C. Court of Appeal in *Canadian Earthcare Society* also agreed with the following lower court decision of Mr. Justice Lander:

Should the Board find an adverse effect (i.e. some risk) it must weigh that adverse effect against the intended benefit. Only by making a comparison of risk and benefit can the Board determine if the anticipated risk is reasonable or unreasonable. ... Evidence of alternative methods will also be relevant to the issue of reasonableness. If the same benefit could be achieved by an alternative risk free method then surely the use of the risk method would be considered unreasonable.

Justice Legg, in *Islands Protection Society v. BC Environmental Appeal Board* (1988), 3 CELR (NS) 185 (B.C.S.C.), summarized the Courts' approach in the *Canadian Earthcare Society* case. (This approach was affirmed in the recent case of *Wier v. Environmental Appeal Board* (2003), BCSC 1441.) In *Islands Protection*, Justice Legg notes that both levels of Court in *Canadian Earthcare Society* concluded that the Board is required to engage in a two-stage inquiry

to determine whether a pesticide application will cause an unreasonable adverse effect. Justice Legg states that the first stage is to inquire whether there is any adverse effect at all. If not, the Court accepts that that is “the end of the necessary inquiry.”

The second stage is that, if the Board decides that an adverse effect exists, the Board must undertake a risk-benefit analysis to ascertain whether that adverse effect is reasonable or unreasonable.

Applying the two-stage test set out in these cases, the first question for the Panel to decide in these appeals is whether the application of adulticides, as authorized by the Permit, will cause an adverse effect at all. If so, the Board will then consider whether the adverse effect is reasonable or unreasonable.

a) Will there be an “adverse effect” as defined in the Act, i.e., will there be an “effect that results in damage to humans or the environment.”

In their Notices of Appeal and subsequent submissions, the Appellants state that the Permit does not adequately protect non-target insects, especially honeybees. In particular, that the pesticides targeting mosquitoes in their adult stage contain either pyrethrins, synthetic pyrethroids or malathion. They submit that all of these can have an adverse impact on bees and other beneficial insects.

Pyrethrins and synthetic pyrethroids

The Appellants note that the labels for a number of pesticide control products containing pyrethrins specifically target stinging insects and flying insects, including bees.¹

In addition, they refer to the “pesticide information profile” for resmethrin (a synthetic pyrethroid approved under Appendix A of the Permit) that was published by the Extension Toxicology Network. Under “Ecological Effects,” the profile for resmethrin states:

- **Effects on other organisms:** Resmethrin is highly toxic to bees, with an LD50 of 0.063 ug per bee [3].

Malathion

Regarding malathion, the Appellants refer to a document titled “Proposed Acceptability for Continuing Registration (PACR 2003-10); Re-evaluation of Malathion”, dated September 5, 2003. This document was produced by Health

¹ Much of the Appellants’ evidence regarding the approved pesticides comes from various internet sites including Health Canada’s website for the Pest Management Regulatory Agency and the website of the Extension Toxicology Network, “a Pesticide Information Project of Cooperative Extension Offices of Cornell University, Oregon State University, the University of Idaho, and the University of California at Davis and the Institute for Environmental Toxicology, Michigan State University”.

Canada, Pest Management Regulatory Agency, for the purpose of soliciting comments from interested parties on the proposed use of malathion as an adulticide in mosquito abatement programs. The Appellants quote the following from page 14:

6.0 Effects having relevance to the environment

Malathion for control of adult mosquitoes will be applied as ultra-low volume (ULV) sprays and these are characterized by fine droplets and are applied in urban residential areas, at night when adult mosquitoes are most active.

... malathion is highly toxic to insects including beneficial ones such as honey bees. ... [emphasis added]

The Appellants also refer to a document published by the Ministry of Water, Land and Air Protection titled "Integrated Pest Management: Bees and Pesticides" that identifies malathion as "Highly Toxic to Bees (LD50 less than 2 µg/bee)."

The Appellants note that formulations of malathion contain specific warnings that honeybees (and other beneficial insects) may be killed if the product is applied to areas which may be occupied or entered by them. They state that the product labels generally contain specific restrictions limiting the use of the product to conditions when honeybees will not be exposed, such as *conducting the mosquito spray program at night*, when the bees are not active (per Health Canada's document "Re-evaluation of malathion, referenced above). Similarly, they point out that the Ministry of Water, Land and Air Protection, and a number of other reputable agencies, recommend that malathion be applied only at night in order to protect bees.

Although it appears to be generally acknowledged that malathion, and other adulticides, be sprayed at night in order to protect bees, there is no such provision in the Permit. Therefore, the Appellants submit that the Permit, in its current form, will have an adverse effect on honeybees. They note that the only reference to bees in the Permit is section 7.9, which requires registered beekeepers to be contacted and for there to be a "determination" of methods that will minimize any impacts to honeybees. The Appellants submit that this will not protect honeybees from an adverse impact. They maintain that the destruction of bees will cause financial hardship to beekeepers as well as negatively impact the pollination services that bees provide.

The Permit Holder acknowledges that adulticiding may result in adverse effects on non-target species, including bees.

The Administrator does not specifically address the adverse effects of the adulticides on non-target species.

There is no dispute that honeybees are part of the environment. The Panel finds that the Appellants have established, on a balance of probabilities, that the

application of adulticides, as authorized in the Permit, may have an "adverse effect" on honeybee populations. Therefore, the application of adulticides authorized by the Permit will result in damage to the environment.

The next question is whether whether the adverse effect is reasonable or unreasonable.

b) Is the adverse effect reasonable or unreasonable?

According to the *Islands Protection* case, this stage of the test requires the Board to undertake a risk-benefit analysis to ascertain whether the adverse effect is reasonable or unreasonable. In *Canadian Earthcare Society*, the Court agreed that if the Board found an adverse effect (i.e. some risk)

it must weigh that adverse effect against the intended benefit. Only by making a comparison of risk and benefit can the Board determine if the anticipated risk is reasonable or unreasonable ... Evidence of alternative methods will also be relevant to the issue of reasonableness. If the same benefit could be achieved by an alternative risk free method then surely the use of the risk method would be considered unreasonable.

According to the permit application, the application of adulticides under the Permit is intended to benefit the population of British Columbia by preventing the transmission of West Nile virus from mosquitoes to humans.

The Appellants do not take issue with this objective. In addition, they acknowledge that without knowing and considering some quantification of the benefits (i.e., the efficacy of an adulticide spray program in completing the project's objectives), that a complete analysis of the unreasonableness of the adverse effects of the spray program is not possible. However, they maintain that treating urban areas with adulticides is unlikely to have a significant impact on decreasing the incidence of the West Nile virus. They describe the process of transmission of the virus and contrast it with malaria. They state:

In contrast to the situation for malaria, West Nile Virus is acquired by its mosquito vector from infected birds; although treatments may (very temporarily) reduce the numbers of infected mosquitoes, adulticides are unlikely to reduce the percentage of infected mosquitoes. Treating urban areas with adulticides is unlikely to have a significant impact on decreasing the incidence of West Nile Virus; within several days of treatments with adulticides, infected mosquito numbers will return to levels comparable to that prior to treatments because mosquitoes, and/or infected bird hosts, will migrate in from surrounding areas.

The Appellants argue that the Board should consider striking "all reference to adulticides from the permit in order to encourage proactive uses of larvicides which

are far less likely to impact non-target terrestrial organisms and are more effective for the purpose identified by the permit."

In support of their position, the Appellants refer to a July 2001 report by Toxics Action Center and Maine Environmental Policy Institute titled "Overkill: Why Pesticide Spraying for West Nile Virus May Cause More Harm than Good" which states: "Adulticiding, or the spraying to kill adult mosquitoes, has not been proven effective. The Centers for Disease Control and Prevention state that ground and aerial spraying is usually the least effective mosquito control technique."

As further support, the Appellants refer to the "Mosquito Control Chemical Guide 2003 - West Nile Virus Response Plan" prepared by the Oregon Department of Human Services. At page 2 it states:

The most effective method of mosquito control is "larviciding," or the treatment of locations where mosquito larvae are present, such as the water impounded in the bottom of "catch basins" (storm drains). Catch basins may be found along streets, in parking lots and sometimes in backyards. Because catch basins are a major source of the house mosquito in urban areas, the Department recommends that catch basins be treated at least three times during the summer to control *Culex* spp. mosquitoes. ...

Spraying for Adult Mosquitoes: Adult mosquito control (also called "fogging," "spraying" or "adulticiding") is the method of mosquito control that is most familiar to the public. However, the aerosol fog kills only mosquitoes that contact insecticide droplets; the fog soon dissipates. Although the local mosquito population is reduced for a few days, fogging does not prevent mosquitoes from re-entering the area. Because only a part of the local adult mosquito population is reduced only for a few days by fogging, municipalities should give priority to larval mosquito control of *Culex* spp. mosquitoes.

The Appellants use this quote in support of having adulticides struck from the Permit. However, the Panel notes that the Response Plan went on to say as follows:

Nonetheless, when the risk of human disease is present, the only method that will reduce the population of WNV [West Nile virus] - infected mosquitoes throughout a community is adulticiding. This may be the best option available to those communities lacking an organized mosquito control program. However, every effort should be made to inform the public when treatment for adult mosquitoes is planned. An informed public will better understand the measures being taken and will be able to take precautions to limit their exposure to pesticides.

The Administrator submits that the Permit was issued on the basis of the application and supporting documentation from several health authorities, including the Minister of Health and the Deputy Provincial Health Officer. The Administrator adds that the purpose of permitting adulticide use was to ensure that the Permit Holder, and medical health officers, had access to the full range of potentially

required mosquito control measures. Furthermore, the use of adulticides are restricted under the Permit to the conditions described in Appendix B as a Level III detection, which is the highest of the five response levels that are included.

The Permit Holder agrees with the Administrator and adds that there is considerable evidence demonstrating that the proper application of adulticides will control or reduce adult mosquito populations and reduce the numbers of biting adult females mosquitoes for a short period of time. This reduction in population would reduce the number of bites people receive and reduce the odds of the virus being transmitted. Furthermore, the Permit Holder submits that the decision to apply adulticides would be considered only when public health officials have decided that the health risks from West Nile virus outweigh the risk from exposure to insecticides. They add that the Permit requires that the public be notified if this decision is made.

The Panel finds the evidence and supporting documentation from the health authorities persuasive in that the use of adulticides are adequately controlled through the response system identified in Appendix B. The Panel finds that the approach to adulticiding found in this appendix is consistent with Oregon's Response Plan that was referenced by the Appellants. The Permit authorizes the use of adulticides only if the conditions are present to trigger response level III in Appendix B to the Permit. That is:

Level III. *Detection of a single or multiple laboratory-confirmed human cases of arbovirus infection (with no history of travel to an area with confirmed activity of the arbovirus within 21 days of onset of symptoms), in the current year, within a jurisdiction.*

If this response level is reached, Mosquito control activity may be warranted and initiated where there is proximity of vector species habitat to areas of population density or considerable recreation use as per section C.2.2. - Adulticide and/or C.2.2. - Larvicide [C.2.2. is a reference to the BC Centre for Disease Control's document titled "Arbovirus Surveillance and Response Guidelines for British Columbia," February 2003].

Any decision made as to commence a pesticide control program would be done on recommendation by the local Medical Health Officer in consultation with the PHO [Provincial Health Officer], the local community, WLAP [Ministry of Water, Land and Air Protection], the local pesticide manager and local governments based on information provided by BCCDC [British Columbia Centre for Disease Control]. In the case of the need to use pesticides as per protocol described, local governments or other interests may be called upon to act as an agent for the Minister of Health Services in carrying out control programs described in the permit.

[emphasis in original]

Thus, adulticides are not authorized unless there is a serious risk to human health.

Furthermore, the Panel finds that if a Level III response is necessary, it will be a decision by a number of authorities and will only be used in the most extreme situations. Therefore, the Panel finds that the use of adulticides, as specified in the Permit, do not create an unreasonable adverse effect, due to the highly specific nature of Appendix B.

In light of this provision, the Panel finds that the authorization of adulticides, *in general*, is not unreasonable. On the evidence presented, the adverse effect to honeybees does not outweigh the intended benefit to the human population in British Columbia. The Permit sets out a measured response based on the level of risk to the population.

Having said that, the Appellants also argue that vis-a-vis honeybees specifically, the adverse effect is "unreasonable". This is because the adverse effect alleged will occur if the application of the adulticide takes place during the day. Since honeybees are "diurnal foragers" meaning they eat during the day, they would be most impacted if the application of adulticides takes place during the day. This adverse effect could be easily remedied through a simple amendment to the Permit. Specifically, an amendment that states:

No treatments of adulticides shall be conducted during daylight hours (i.e. adulticides may only be applied between the official times of sunset and sunrise).

The Appellants maintain that this amendment would reduce or eliminate the adverse effect to honeybees, while achieving the same intended benefit of protecting the human population. They submit that mosquitoes are nocturnal feeders/foragers and adulticides are most effective against mosquitoes when these insects have left their daytime harborages and are in the vicinity of the treatment areas -- namely, when mosquitoes are foraging during the night.

The Permit Holder acknowledges that adulticiding may result in adverse effects on non-target species, including bees, and that adulticides, if applied, are most effective for mosquito control when applied at night; specifically, between dusk and dawn. Both the Administrator and the Permit Holder agree that the amendment is reasonable and do not object to the Permit being amended as suggested.

The Panel finds that the proposed amendment would be effective in removing unnecessary risk of an adverse effect to honeybees and is reasonable in the circumstances. Therefore, the Panel orders the Permit to be amended accordingly.

With the addition of this condition prohibiting spraying of adulticides during daylight hours, the Panel is satisfied that the application of adulticides, as authorized by the Permit, will not have an "unreasonable adverse effect" as defined in the Act and should not be removed from the Permit.

2. Whether the Permit should be amended to include additional conditions, restrictions or requirements.

Section 6(3)(b) of the *Act* allows the Administrator to “include requirements, restrictions and conditions as terms of the permit”. If adulticides are not “struck” from the Permit, the Appellants argue that the Permit should be amended to address various concerns:

- the description of permitted pesticide control products is vague
- the events leading to “activation” or the triggering of spraying under the Permit is vague
- there is not adequate compensation for injury or loss due to use of adulticides.

(a) Vague description of permitted pesticide control products

The Appellants submit that the wording of the Permit does not clearly identify the pesticide formulations (pesticide control products) that are authorized for application. Although the Appellants understand that the approved list of pesticide products are set out in Appendix A to the Permit, they point out that “Appendix A” is only referenced on the first page of the Permit as follows:

The permit holder is authorized to use pesticides subject to the conditions listed below. Contravention of any of these conditions is a violation of the *Pesticide Control Act* and may result in prosecution.

...

The pesticide use as described by the Pesticide Use Permit Application received August 8, 2003 is approved, including the provisions of the **covering letter**, Appendix A - **List of Registered Pest Control Products**, Appendix B - **Response Levels to Trigger Pesticide Application**, and Appendix C - **Aquatic Information**. Please include these documents on the Web as well as this permit.

[bold in original]

The Appellants submit that this wording may lead to confusion or uncertainty and may not “bind” applicators to adhere to the formulations and protocols outlined in the appendix. To alleviate this concern, they suggest that the Permit be amended to add the following condition:

Pesticide treatments are limited to formulations listed in Appendix A to the permit applications. Applicators will adhere to restrictions indicated on labels as well as any additional restrictions specified on the label.

In a later submission, the Appellants modify their proposed wording to the following:

No pesticide treatments shall proceed except on recommendation by the local Medical Health Officer in accordance with product labels and protocols referred to in Appendix A - List of Registered Pest Control Products, Appendix B - Response Levels to Trigger Pesticide Application, and Appendix C - Aquatic Information and in consultation with the PHO [Public Health Officer], the local community, WLAP [Ministry of Water, Land and Air Protection], the local pesticide manager and local governments based on information provided by BCCDC [B.C. Centre for Disease Control].

The Appellants believe that this language will make it clear that the Permit Holder is bound to adhere to the protocols outlined in the appendices submitted with the permit application.

The Administrator and the Permit Holder assert that the provisions of the Permit are satisfactory. The Administrator submits that the paragraphs on page one of the Permit restrict the Permit Holder to provisions of the application, including Appendix A. In addition, section 4 of the permit application form references Appendix A under section 4a, indicating that the list of pesticides in Appendix A are the pesticides that can be used under the Permit.

In the alternative, both the Administrator and the Permit Holder submit that they do not object to including suitable substitute wording in the Permit, should the Board find the Permit vague, as alleged by the Appellants.

The Panel notes that the paragraphs on the first page of the Permit approve the permit application and Appendix A to that application, among other things. The Permit also directs the Permit Holder to "include these documents on the Web as well as this permit." The Panel notes that the appendices have been attached to the copy of the Permit provided to the Board.

The Panel finds that the wording of this paragraph is clear in that it states that the application is approved, "including" Appendix A. The Permit identifies the title of Appendix A to ensure there is no confusion. The appendix has been attached to the Permit and section 2 of the Permit specifies the active ingredients, the relevant mosquito stage and the application method. Considering all of these provisions, the Panel finds that the Permit is not vague and finds there is no need to amend the Permit as requested by the Appellants.

(b) Vague in terms of "activation" or triggering of spraying under the Permit.

The Appellants submit that it is unclear when the Permit can be "activated." They say that the purpose of the Permit is to allow treatments only when there is a risk to human health by the West Nile virus, but that the Permit does not adequately define when such a threat exists, nor does it explicitly refer decision-making to a designated official. They note that the permit application makes reference to appendices A, B and C but the Permit itself does not incorporate restrictions on

treatments to which the Permit-Holder is committed in those appendices. The Appellants state that the Permit "should be amended to include provisions such as the following (based on Level III incidence as defined in Appendix B to the permit application)":

No adulticide treatments shall proceed except on recommendation by the local Medical Health Officer in consultation with the PHO [Provincial Health Officer], the local community, WLAP [Ministry of Water, Land and Air Protection], the local pesticide manager and local governments based on information provided by BCCDC [British Columbia Centre for Disease Control].

No adulticide treatments shall proceed except where, in the current year, within the jurisdiction of the authorizing Medical Health Officer, there has been laboratory-confirmed detection of a single or multiple human cases of West Nile Virus infection (with no history of travel to an area with confirmed activity of the arbovirus within 21 days of onset of symptoms). If this response level is reached, mosquito control activity may be warranted and initiated where West Nile Virus has been detected in mosquito pools or in avian specimens within 5 km of areas of population density or areas of considerable recreation use as per the terms of the permit (as amended).

Local governments or other interests may be called upon to act as an agent for the Minister of Health Services in carrying out control programs described in the permit.

The Administrator and the Permit Holder submit that the terms of activation are not vague. A control program is "activated" after the available information is evaluated under Appendix B, and the requirements for consultation are met. In addition, the Administrator adds that the proposed amendments would create constraints that would significantly alter the response levels recommended by the BC Centre of Disease Control and could compromise the effectiveness of a control program.

The Permit Holder agrees and submits the following that may also restrict the effectiveness of a control program:

- a) There are finite numbers of stations (25) for monitoring mosquito pools throughout the province, and often these stations are only capable of capturing a handful of mosquitoes each week.
- b) The availability of bird specimens is dependant on the public reporting dead birds in their area.
- c) For the above reasons, it is possible to have a cluster of human cases in an area without the collection of west nile positive mosquitoes or avian species. If travel or transfusion is ruled out, the only source for the infections could be mosquitoes in the area, as humans are dead end hosts.

The Panel has considered whether the terms of the Permit are vague with respect to when the Permit can be activated. The Panel finds that the terms of the Permit are not vague. The Panel finds that the Permit incorporates Appendix B, which effectively addresses the concerns of activation and the requirements of consultation.

The Panel also considered the amendments proposed by the Appellants. The Panel agrees with the Administrator that, due to the highly mobile nature of the insects and birds involved, restricting the application areas to only 5 km adjacent to the areas of detection would limit the effectiveness of the treatment. Therefore, the Panel finds that the proposed amendments are not appropriate in the circumstances.

(c) Inadequate compensation for injury or loss due to use of adulticides.

The Appellants also submit that the Permit should be amended to provide "injured parties" with "recourse."

The Appellants submit that, pursuant to section 2(2) of the *Regulation*, the Permit absolves anyone working under its authority of responsibility for causing an adverse impact if the treatments are carried out in accordance with its terms. It states:

General prohibition

- 2 (2) No term or condition of a licence, certificate or permit shall require the holder of it to do anything that would result in the creation of an unreasonable adverse effect, and no person shall be liable in a prosecution for contravening subsection(1) if he proves that the unreasonable adverse effect primarily resulted from compliance with a term or condition of a licence, certificate or permit in question issued to him.

In addition, they maintain that sections 20 and 21 of the *Act* leave injured parties with no ability to seek redress from the government, effectively eliminating anyone from assuming the role of a responsible party, so long as applicators adhere to the terms of the authorization. Sections 20 and 21 of the *Act* provide as follows:

No compensation

- 20 Compensation is not payable for the lawful seizure, detention, treatment or destruction of anything under this Act.

Protection from proceedings

- 21 Proceedings may not be brought against the administrator, appeal board, committee, minister or any other person for anything done or not done in good faith in the performance or intended performance of a power or duty under this Act or the regulations.

Finally, the Appellants believe that the province should recognize its responsibility to compensate those whose private assets are impacted through the use of

authorized pesticide applications. They note that condition 7.9 of the Permit does not require the Minister to implement "methods for minimizing impacts to beekeeping concerns", but only to "determine" such methods. They submit that if the province recognizes that public health is served through the wide-spread application of pesticides, it should also recognize that it has a responsibility to compensate those whose private assets are impacted. The Appellants argue that people acting under the Permit should not be absolved from financial responsibilities resulting from treatments conducted in accordance with the Permit.

The Appellants suggest that their concerns could be remedied by the following amendment to the Permit:

Applicators working under this Permit shall not cause any unreasonable adverse impact to either public or private interest without adequate recompense being made by the applicators or the agents of the Ministry of Health Services.

The Administrator submits that the applications under this Permit can and will be made without adverse effects to beekeepers and their assets. Furthermore, as the permittee is the provincial government, the Administrator submits that it would be unlikely that the province would not be able to satisfy any third party claims arising under the Permit.

The Permit Holder submits that, in order to avoid damage to commercial bee colonies, it would be reasonable for all parties involved to take advantage of section 7.9 of the Permit. The Permit Holder adds that this would open the channels of communication between local medical health officers and beekeepers to identify and consider the locations of bee colonies during planning for pesticide application. By working together, the parties can plan to avoid damage to bees, should surveillance indicate that adulticiding may be considered to prevent disease outbreak.

As noted by the Appellants, the *Act* and the *Regulation* sets out the general immunity provisions. The Board only has jurisdiction where there is some discretion to be exercised under the permit sections of the *Act*. It cannot "amend" the legislation. Therefore, the Panel has no jurisdiction to amend the Permit in this regard or exempt people from the legislation.

3. Whether there has been, and will continue to be, inadequate public consultation in relation to the Permit and the treatments authorized by the Permit.

The Appellants submit that the Permit was issued without the opportunity for site-specific information to be considered prior to the authorization of treatment. They agree that Permit Holder complied with the requirement of section 18 of the *Regulation* to publish notice of the **issuance** of the Permit. However, they submit that there was no notification **prior** to the Permit being issued, as required by section 16(2) of the *Regulation*. They submit that the purpose of prior consultation is to elicit site-specific information from the public before treatments occur so that

the Administrator can consider the site-specific information when developing the terms of the Permit.

Regarding consultation and notification prior to the Permits issuance, the Administrator and the Permit Holder submit that the guidelines for notifying the public are specified on the first page of the Permit, and these directions specifically replace the requirements of section 16(2) of the *Regulation*. According to these guidelines, the Permit Holder is directed to notify the public through a broadly distributed news release with access provided by the internet. Through feedback from program staff situated in different regions, both the Administrator and the Permit Holder submit that the Permit application was given broad coverage by newspaper articles published widely throughout the province.

The Panel has considered whether the Administrator added terms to the Permit that comply with section 16(2) of the Regulation. The Panel notes that section 16(2) of the *Regulation* requires a permit applicant to provide public notification of a proposed application, "unless otherwise directed by the administrator." The Panel finds that section 16(2) of the *Regulation* allows the Administrator to include requirements in a Permit for instances where special circumstances exist to forego the usual notification and consultation process. In the present situation, the Administrator replaced section 16(2) of the *Regulation*, with a requirement of pre-pesticide treatment notification and consultation because the Permit would encompass the entire Province of British Columbia. The Panel finds that, due to the lack of specific geographical boundaries for the Permit being applied for, the exercise of discretion by the Administrator to replace section 16(2) of the *Regulation* was within her power according to the provisions in the section. The Panel finds that the provisions of the Permit are reasonable in the circumstances.

The Appellants also argue that if the Administrator can waive the notification and consultation processes prior to a permits issuance, the Administrator should ensure that the lack of gathering of site-specific information at the "front end" of the consultation process, should be corrected at the "tail end," before treatments occur. Although the Permit provides for notification prior to treatment in section 5, the Appellants are concerned that the notification may occur "so far in advance of treatments that the public has forgotten about treatments by the time they actually occur." The Appellants submit the Permit should be amended to include provisions for local consultation such as the following:

In each year of the permit, at least 30 days prior to the commencement of adulticide treatments and no more than 90 days prior to treatments, the Ministry of Health, or its designate, shall publish a notice of the proposed treatments in a newspaper circulated in the place where the site of the proposed pesticide treatment is located. The notice shall bear the heading "NOTIFICATION OF PESTICIDE TREATMENT" in 18 pt. or larger, medium or bold face type, cover a minimum area of 40 sq. cm, and contain the following information:

- (a) pesticide use permit number
- (b) name, address and telephone number of the Ministry of Health Services
- (c) purpose of pesticide use;
- (d) methods of pesticide application;
- (e) location and area of treatment site;
- (f) pesticide common name and trade name;
- (g) proposed project commencement and completion dates;
- (h) the location where copies of the permit application and maps of the treatment area may be examined in detail;
- (i) the paragraph

a person wishing to contribute site-specific information pertinent to the implementation of treatments must send written copies of this information to both the Minister of Health, c/o 1515 Blanshard St, Fourth Floor, Victoria, BC V8W 3C8 (a specified legal designate appropriate to the specific region could be inserted here) and the Administrator, Pesticide Control Act, Ministry of Water, Land and Air Protection, Victoria BC V8W 9M1 (a specified legal designate appropriate to the specific region could be inserted here) within 30 days of the publication of this notice.

At least 15 days prior to the commencement of adulticide treatments the permit-holder (or designate) shall submit copies of comments received plus a plan to address any substantive issues to the administrator. Treatments of adulticides shall proceed only if the Administrator (or designate) approves the plan as submitted (or by imposing amended conditions on the plan) with concurrent notice of this decision circulated to all parties who made input.

To address the concern of public notification *after* the Permit is awarded, the Permit Holder submits that any outbreak of West Nile virus in British Columbia would undoubtedly be accompanied by significant media coverage. Press releases and telecasts would include details of any planned control measures, as well as protective measures for the public.

Regarding the proposed amendment, the Administrator argues that including the 30-day prior publication of intent to apply pesticides is unnecessary because it is adequately addressed by the current provisions of the Permit. In addition, this type of amendment would place time constraints on any decisions to apply the

adulticides, which could impede the necessary control of mosquitoes and endanger human health.

The Panel finds that the Permit provides for sufficient notification and consultation prior to treatments.

The Panel has also considered whether the Appellants' proposed amendment is reasonable in the context of the Permit. The Panel notes that the proposed amendment incorporates the language from section 16(4) of the *Regulation*. Those provisions were specifically replaced in the Permit by the Administrator with the requirement that information bulletins be given to news outlets for public notification. The Panel finds that the Permit is designed to address situations of emergency, and the proposed amendment would create time restrictions that may disrupt the effectiveness of treating the affected area. Accordingly, the Panel finds that the proposed amendment is not reasonable.

Therefore, the Panel finds that there has been and will continue to be sufficient public consultation requesting site-specific information for a pesticide authorization of such broad scope.

DECISION

In making its decision, the Panel has carefully considered all the evidence presented to it during the hearing of this appeal, whether or not specifically reiterated here.

The Panel confirms the Permit as issued with the following amendment.

The Panel orders the Administrator to amend the Permit by including the following condition:

- No treatments of adulticides shall be conducted during daylight hours (i.e. adulticides may only be applied between the official times of sunset and sunrise).

The appeals are allowed, in part.

Alan Andison, Chair
Environmental Appeal Board

April 8, 2004