



Province of
British Columbia

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. 2000-PES-001 to 2000-PES-014

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

BETWEEN: Maureen Fitzmaurice, Ecological Health
Alliance, Gordon Watson, Sierra Club (Victoria
Group), Thais Halford, Dieter Eisenhower,
Nonna Weaver, Stop Overhead Spraying
Coalition, Green Party of Canada, Sue Wheeler
and Peter Johnston, Society Targeting Overuse
of Pesticides, Society Promoting Environmental
Conservation, Lila Parker, Heather Strang **APPELLANTS**

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

AND: British Columbia Ministry of Forests **PERMIT HOLDER**

BEFORE: A Panel of the Environmental Appeal Board
Jane Luke Panel Chair
Cindy Derkaz Member
Fred Henton Member

HEARING DATE: March 27 - 31, 2000

PLACE OF HEARING: Burnaby, B.C.

APPEARING: For the Appellants:

Gordon Watson:	Gordon Watson
Dieter Eisenhower:	Dieter Eisenhower
Nonna Weaver:	Nonna Weaver
Stop Overhead Spraying Coalition:	S. Jean Wallace
Green Party of Canada:	Joan Russow, Margaret MacKenzie
Society Promoting Environmental Conservation:	Ivan Bulic Sikee Liu
Lila Parker:	Lila Parker
Heather Strang:	Heather Strang
For the Respondent:	H.G. Maxwell J. Fournier
For the Permit Holder:	Joan M. Young, Counsel

APPEALS

These appeals were filed against Pesticide Use Permit No. 402-556-2000 (the "Permit"), issued on February 4, 2000 by Harvey G. Maxwell, Deputy Administrator, Pesticide Control Act, Ministry of Environment, Lands and Parks ("MELP"). The Permit was issued to the British Columbia Ministry of Forests ("MOF"). The Permit authorizes the use of Foray 48B, with the active ingredient *Bacillus thuringiensis* var. *Kurstaki* ("Btk"), in a spray program designed to eradicate a localised population of the North American gypsy moth (*Lymantria dispar* (L)) in Burnaby, British Columbia.

The Appellants seek an order cancelling the Permit, or alternatively, an order staying the operation of the Permit pending the release of further studies, or an order varying the Permit so that it does not allow aerial spraying of Foray 48B, but rather, incorporates alternative non-pesticide control methods.

The Environmental Appeal Board has the authority to hear these appeals under section 11 of the *Environment Management Act* and section 15 of the *Pesticide Control Act*.

BACKGROUND

The North American gypsy moth has been present in eastern Canada since 1924. It was introduced into the Eastern United States from Europe in 1869. The descendants of these European ancestors are referred to as the North American gypsy moth. The North American gypsy moth is now found in parts of Ontario, Quebec, New Brunswick and Nova Scotia, and throughout most of the north-eastern United States. This moth has made recurring appearances in British Columbia since at least 1911.

There are no known permanent gypsy moth populations in British Columbia. In British Columbia, gypsy moth management is directed by the Gypsy Moth Technical Committee of the B.C. Plant Protection Advisory Committee. The management strategy is to eradicate local populations and prevent the widespread colonization of British Columbia by this species.

New introductions of gypsy moth to British Columbia occur because egg masses are carried here by vehicles and ships arriving from infested areas in eastern North America and Asia. The eradication strategy depends on a monitoring system using pheromone traps to detect new moth introductions. Once moths are detected, the following year a more intensive delimiting trapping survey is done to provide estimates of the location and size of the moth population. The results of the 1999 delimiting trapping in Burnaby revealed a population of gypsy moths in the area north of Burnaby Lake. A map submitted by the Respondent shows that in the fall of 1999, a total of 23 male gypsy moths were trapped at several locations in the area. One male moth was also trapped on the south shore of Burnaby Lake. In addition, 15 viable egg masses were found in the proposed spray area.

In response to the 1999 survey, on November 30, 1999, MOF applied to MELP for a permit to spray Foray 48B in order to eradicate this gypsy moth population. On

February 4, 2000, the Deputy Administrator issued the Permit, which authorizes a spray program on parts of a 279.5 hectare area on the north shore of Burnaby Lake and the Brunette River. The spray zone is centred roughly on the intersection of Winston Street and Piper Avenue. The Permit also imposes a buffer zone to allow for the possibility of drifting spray. Both the spray application zone and the buffer zone are identified on a map accompanying the Permit.

The Permit authorizes a maximum of four treatments between April 3, 2000 and June 30, 2000. The conditions of the Permit stipulate that spray applications are to be carried out by the aerial spraying of Foray 48B at a maximum distribution rate of 4 litres per hectare, and that treatments are to take place on calm mornings, during daylight hours, with completion by 7:30 a.m.

The Permit alone is not enough to authorize spraying of Foray 48B in the entire proposed spray zone. The Permit only applies to public lands, and certain private lands described in section 10(2) of the *Pesticide Control Act Regulation* as:

10(2)(c) ... private land that is used for forestry, transportation or public utility purposes or otherwise for the commercial transmission of electricity, natural gas, oil or water to or for the public or a corporation.

The Deputy Administrator does not have authority under the *Pesticide Control Act* to issue a permit to spray private lands of residences and most businesses in the proposed spray zone. To do that, the Permit Holder will have to get permission from each landowner in the spray zone, or get an Order In Council from the government of British Columbia. The Respondent testified that the private and public lands within the spray zone have not been determined, and cannot be delineated during aerial spraying. Therefore, the Permit Holder will have to get further authority to conduct its aerial spray program described in the Permit application.

In 1990, Foray 48B was registered for use in Canada by Novo Nordisk. It is now registered and distributed by Abbott Laboratories. The active ingredient in Foray 48B, Btk, is a bacterium that produces a crystalline toxin in the alkaline digestive tracts of lepidopterous larvae.¹ When the formulation is sprayed on deciduous vegetation favoured by the gypsy moth larvae as food, Btk bacteria are ingested and kill the caterpillars. The other ingredients of the Foray 48B formulation, which will be referred to here as "inerts", are trade secrets belonging to the manufacturer and have not been disclosed to the general public, the parties to this appeal, local health authorities, or this Panel. According to the material safety data sheet issued by Abbott Laboratories, Foray 48B consists of 2.1% Btk and 97.9% inerts.

In Canada, pesticide products such as commercial formulations of Btk are registered under the *Pest Control Products Act*, which is administered by the Pesticide Management Regulatory Agency, Health Canada. This agency has approved and registered Foray 48B for use in agriculture, forestry and urban applications.

¹ *Lepidoptera* are a large order of insects comprised of butterflies, moths and skippers that as adults have four broad wings and that as larvae are caterpillars.

On the first day of the hearing, counsel for Sisu Enterprises Ltd. ("Sisu"), a business in the spray zone, submitted a Notice of Appeal and requested that Sisu be added as an Appellant. The Panel found that it did not have jurisdiction to extend the time limit for filing appeals prescribed under the *Pesticide Control Act*. However, the Panel invited Sisu to participate in the hearing with the opportunity to present evidence. Sisu declined this invitation and took no further part in the hearing.

At the hearing, stay applications were made by several of the Appellants. The Panel notes that the Permit requires the Permit Holder to give one week's notice by a press release of its intended spraying dates. As notice of the spray program had not been given at the time of the hearing, the Panel declined to make a decision on the stay applications.

RELEVANT LAW AND LEGISLATION

Pesticide use permits are issued by MELP pursuant to section 6(3) of the *Pesticide Control Act*, as amended, which reads as follows:

6 (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. [emphasis added]

Section 1 of the *Act* defines "adverse effect" as an effect that results in damage to humans or to the environment. Section 12(2)(a) states that the administrator "has the powers necessary" to "determine in a particular instance what constitutes an unreasonable adverse effect".

The Environmental Appeal Board summarized the relevant legislation and case law in *City of Parksville et al. v. Deputy Administrator, Pesticide Control Act* (Appeal No. 98-PES-07(c), April 8, 1999) (unreported) commencing at page 5 as follows:

[A]t the federal level, the *Pest Control Products Act*, R.S.C. 1985, P.-9 requires a pesticide to be registered before that pesticide can be sold or imported into Canada. It also provides that the pesticide must be used in accordance with its label. The onus is on the applicant to submit all relevant studies to the federal government to show that its product does not cause an "unacceptable risk of harm to public health, plants, animals and the environment" (*Pest Control Products Regulations*, section 18(d)(ii)), before a decision is made to register a pesticide.

The British Columbia Court of Appeal has ruled that the Environmental Appeal Board can consider a registered pesticide to be generally safe when

used in accordance with the label (*Canadian Earthcare Society v. Environmental Appeal Board* (1988), 3 C.E.L.R. (N.S.) 55). 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.

Justice Legg, in *Islands Protection Society v. British Columbia Environmental Appeal Board* (1988), 3 C.E.L.R. (N.S.) 185 (B.C.S.C.) found that, in making its decision, the Board should engage in a two-step process to determine whether a pesticide application would cause an unreasonable adverse effect. The first stage is to inquire whether there is any adverse effect at all. The second stage is if the Board decides that an adverse effect existed, then the Board has to undertake a risk-benefit analysis to ascertain whether that adverse effect is reasonable.

The Court of Appeal decision in *Canadian Earthcare Society* supported Justice Lander's finding, in the court below, that:

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 silvicultural practices will be relevant to measure the extent of the anticipated benefit. Evidence of alternative methods will also be relevant to the issue of reasonableness. If the same benefits could be achieved by an alternative risk free method then surely the use of the risk method would be considered unreasonable.

ISSUES

The law is clear that the test of an "unreasonable adverse effect" for consideration of a pesticide use permit is site specific and application specific. For the Appellants to be successful, they must show that, at the Permit spray area, the application of Foray 48B by the Permit Holder will cause an unreasonable adverse effect to human health or the environment. Evidence of alternative methods is relevant to the issue of reasonableness.

The basic issue to be decided is whether the proposed aerial spray application of Foray 48B, as authorized by the Permit, will cause an "unreasonable adverse effect." The Panel will analyse this question in two sub-issues:

1. Whether aerial spraying Foray 48B, as authorized by the Permit, will cause an adverse effect to human health or the environment.
2. Whether there will be an unreasonable adverse effect on human health or the environment. In other words, does the intended benefit of the proposed spray program outweigh the adverse effect in the proposed spray site?

DISCUSSION AND ANALYSIS

1. Whether aerial spraying Foray 48B, as authorized by the Permit, will cause an adverse effect to human health or the environment.

The Panel received extensive evidence and submissions on this issue, both orally and in writing. Of the 14 Appellants, 8 attended the hearing to give oral evidence and submissions, namely: Gordon Watson of Burnaby, Deiter Eisenhower of Victoria, Nonna Weaver of North Vancouver, Jean Wallace of Stop Overhead Spraying Coalition based in Victoria, Joan Russow of Victoria on behalf of the Green Party of Canada, Ivan Bulic and Sikee Liu of Society Promoting Environmental Conservation, Vancouver, Lila Parker of Burnaby, Thais Halford of Burnaby and Heather Strang of North Vancouver. Maureen Fitzmaurice of Victoria, Society Targeting Overuse of Pesticides based in North Vancouver and the Ecological Health Alliance based in Victoria submitted written material for the Panel's consideration but did not appear at the hearing. The Sierra Club, Victoria Group, and Sue Wheeler and Peter Johnston of Lasqueti Island filed Notices of Appeal but did not submit statements of points, written material, or appear at the hearing.

The materials filed by the Appellants range from copies of peer reviewed scientific journals to correspondence, newspaper clippings, transcripts of a radio program and excerpts of material obtained from various sites on the internet.

The Panel has categorized the concerns of the Appellants as follows:

1. Risk to human health (adults, children and unborn);
2. Risk to the environment, and in particular to non-target species;
3. Whether the potential economic impacts to British Columbia resulting from a failure to eradicate the gypsy moth justify the aerial Foray 48B spraying; and
4. Whether there are viable alternative methods of control.

The Permit Holder did not present any witnesses at the hearing in response to the evidence of the Appellants. However, the Permit Holder's counsel did file a statement of points and written documentation, and made oral submissions to the Panel.

The conclusion of the Deputy Administrator, as set out in MELP's technical report accompanying his statement of points, is that:

A review of all of available scientific technical information, input from the Regional Pesticide Review Committee and public input indicates that the pesticide use that was applied for will achieve its eradication objective and will not cause an unreasonable adverse effect to the health of humans or the environment.

The Deputy Administrator relied on the fact that Foray 48B is registered and approved by Health Canada for the use set out in the Permit. He also relied on the fact that the Simon Fraser Health Region reviewed the permit application from a

public health perspective, and had no objection to the spray program. Dr. Nadine Loewen, Medical Health Officer for the Simon Fraser Health Region, testified that no adverse health effects attributable to Foray 48B have been detected in the general population.

The Deputy Administrator submitted that adverse health effects did not occur following the 1999 spray program in Victoria. A December 1999 report entitled "Human Health Surveillance During the Aerial Spraying for Control of North American Gypsy Moth on Southern Vancouver Island" from the Medical Health Officer, Capital Health Region concluded:

The results of this project did not show a relationship between aerial spraying of Foray 48B and short-term human health effects. Although some people self reported health problems that they attributed to the spray program, the research and surveillance methods used in this project did not detect any change in health status that could be linked to the spray program. Our results showed that many of the health complaints people reported during the spray were as common in people before the spray as they were shortly after the spray. This conclusion is consistent with those of previous studies of the possible health effects of Btk-based pesticide spray programs. [p. 34]

The Appellants submit that Foray 48B is harmful to human health, notwithstanding the fact that it is registered in Canada and authorized for use in aerial spraying over urban residential areas. The Appellants allege that aerial spraying of Foray 48B presents a risk of harm to children, asthmatics, people with allergies, and those with weakened immune systems. They also submit that there have been no long term studies on the health effects of Btk.

The medical evidence submitted by the Appellants took two main forms. One type of evidence consisted of testimony that individual Appellants, or people they know, suffered negative health effects during or shortly after previous gypsy moth spray programs. They attribute these health problems to the Btk spray, although no one provided evidence from a doctor that the spray caused the health problems.

One Appellant submits that she and a woman from White Rock have experienced numerous adverse health effects, primarily fibromyalgia, chronic fatigue syndrome, and stomach problems. She testified that the symptoms began at the same time as a 1992 application of Foray 48B in North Vancouver, where she resides. Others report respiratory problems, eye irritation and worsening of asthma symptoms in a child.

Another category of medical evidence included reports and journal articles challenging the safety of Btk on human health. The Appellants' position is that these reports and journals support a conclusion that Foray 48B should not be sprayed, at least not in residential areas due to some adverse effects on individuals, particularly those with respiratory problems, the presence of unknown ingredients in Foray 48B, and the lack of long term health studies.

This Panel has no jurisdiction to challenge the presumption of general safety of registered pesticide products when used as approved and directed on the product label. That would have to be done by a challenge or review of the registration decision of Foray 48B by Health Canada.

The Panel is bound by the *Earthcare* decision, in which the British Columbia Court of Appeal confirms that the Board has no jurisdiction to enter into an enquiry about the toxicity or general safety of a federally registered pesticide. The *Earthcare* decision holds that, in an analysis of whether there is an adverse effect, the Board can consider:

1. Whether the specific site in question prevents safe application of the pesticide; [emphasis added]
2. Whether the proposed use of the pesticide is contrary to registration intent and restrictions; and
3. Evidence that this Permit Holder is unable to apply the pesticide safely.

If the Board finds an adverse effect, it then must enter into a comparison of the risk and benefit, weighing the adverse effect against the intended benefit of the pesticide application, to determine whether it is unreasonable.

Not one Appellant or witness lives or works in the area to be sprayed. Further, no evidence was provided that some specific people in the spray zone would suffer adverse health effects, as required by the *Earthcare* case. In *Resident Advisory Board et al. v. Deputy Administrator, Pesticide Control Act* (Environmental Appeal Board, Appeal No. 98-PES-03, April 15, 1998) (unreported) the hearing Panel heard evidence from residents in or near the spray zone with respiratory problems, immuno deficiencies, multiple chemical sensitivities and allergies. Some of those witnesses also provided medical evidence from their doctors that overhead spraying would be detrimental to their health. Thus, the Board, in that case, found that the potential for site specific adverse health effects existed, and approved ground spraying only.

Only one Appellant in this hearing provided medical evidence from her doctor that future overhead spraying could be detrimental to her health. That Appellant lives in North Vancouver, which is many kilometres away from Burnaby, on the other side of Burrard inlet. The Panel cannot accept that spraying in the Burnaby Lake area will adversely effect her health.

In the absence of evidence of site specific potential health effects, the Panel cannot find an adverse health effect by simply assuming that in any residential area there will likely be people with health problems such as the ones described by witnesses in the 1998 Victoria hearing.

Further, the Appellants did not provide any site specific information about adverse environmental effects. However, the Respondent and Permit Holder admit that Btk will kill non-target Lepidoptera that are in similar life stages as the gypsy moth at the time of spraying. Local populations of these non-target Lepidoptera are likely to

be significantly impacted and suffer reduced populations or even extirpation in the spray area for a period of time, perhaps several years. Mr. Fournier consulted the B.C. conservation data centre, U.B.C. botany department, and Jon Sheppard, an authority on rare and endangered butterflies and moths in Canada. He was satisfied that it is unlikely that there are any rare or endangered Lepidoptera in the spray area, and that local populations of non-target Lepidoptera will repopulate the area.

The Panel is concerned about the fact that the Greater Vancouver Regional District has a butterfly garden in the pesticide spray zone. However, the Respondent testified that he has consulted with the garden operators, who are satisfied that, with the assistance and co-operation of Permit Holder, the butterfly garden can be protected from impacts from the spray. The Panel heard no evidence to the contrary. Neither the Greater Vancouver Regional District nor the butterfly park operators were parties to this appeal, nor did they appear as witnesses at the hearing.

One Appellant from Vancouver Island gave evidence that organic farms and gardens are impacted by Btk spray, in that they must be completely covered by plastic during spraying, or risk losing organic certification. However, there was no evidence before the Panel that there are any organic farms or gardens in the spray area.

The Panel finds that there is evidence that the use of Foray 48B, as authorized by the Permit, will have an adverse effect on the environment, i.e. non-target moths and butterflies in the spray zone.

2. Whether there will be an unreasonable adverse effect on human health or the environment. In other words, does the intended benefit of the proposed spray program outweigh the adverse effect in the proposed spray site?

Having found that there will be an adverse effect of the spray program to the environment, specifically on non-target Lepidoptera, the next step is to consider whether the effect is unreasonable. This decision requires weighing the adverse effect against the benefit of the spray program authorized by the Permit. It is a risk/benefit analysis.

What is the benefit of the spray program? The purpose is to eradicate the gypsy moth in this area. Because new introductions of gypsy moth occur in United States, eradication in this context means the area remains moth free for at least two years following pesticide application, according to the Gypsy Moth Committee of the B.C. Plant Protection Advisory Committee.

An October 1998 directive published by the Canadian Food Inspection Agency Plant Products Directorate, and a 1994 report by Deloitte & Touche entitled "A Risk Assessment of European Gypsy Moth in British Columbia", both submitted by the Permit Holder, explain the reasons for gypsy moth control and eradication programs. The primary reason for eradication is the possibility of trade restrictions on exported lumber with bark, nursery products and Christmas trees. Eradication

programs allow British Columbia to maintain its non-infested status, and thereby avoid trade restrictions placed by non-infested trading partners, primarily the western United States. The Canadian Food Inspection Agency report states that there are other potential impacts: on human health (some people are allergic to gypsy moth hairs), on tourism, recreation, and destruction and competition for habitats with native organisms. Several Appellants submitted evidence from Ontario, where the gypsy moth is established, indicating that the latter concerns are minimal, and have not occurred in Ontario. This evidence was in a document sent from the Canadian Food Inspection Agency, Plant Products Directorate, Plant Health and Production Division, November 25, 1998, to M. MacKenzie. Similar conclusions were contained in "A Risk Assessment of European Gypsy Moth in British Columbia," March 1994, prepared by Phero Tech Inc. and Deloitte & Touche.

The Panel accepts that the primary reason for the spray program is to prevent the economic harm from possible trade restrictions on some forest products and nursery products.

In an analysis of reasonableness, the Panel must also consider whether alternative methods are available to meet the goals of the Permit. The Appellant Jean Wallace proposed alternative methods such as mass trapping, pheromone disruption, egg mass searches and burlap banding of trees. She described an impressive volunteer program undertaken in 1998 in Victoria to monitor and mass trap gypsy moths. Jeff Fournier of the Pesticide Management Branch, MELP, gave evidence both at the hearing, and in his submitted technical report that alternative methods to pesticide use are not effective for eradication programs, although they are used for monitoring and detection, and are used sometimes for control where the goal is not eradication but merely to control or slow the spread of established populations in some eastern provinces and states. Even if alternative pest control methods such as the work of the Victoria volunteers in 1998 could eradicate the gypsy moth in the spray area, there is no evidence before the Panel that there is a group in Burnaby willing and able to undertake the project, or community support of a mass trapping effort.

When Mr. Fournier was asked by an Appellant what he understood the purpose of the Permit was, he first replied that he did not know, but that he relied on the recommendation of the Gypsy Moth Committee of the B.C. Plant Protection Advisory Committee that it was necessary. He stated that he did not do an independent assessment of the purpose of the spray program, and went on to say he understood that gypsy moths could destroy native habitat. When asked the same question, the Deputy Administrator testified that it was to prevent defoliation of trees. He further testified that he did not consider trade sanctions at all when making the decision to issue the Permit. The Panel finds that remarkable, since trade sanctions are the primary reason for undertaking gypsy moth eradication, as set out in the documentary evidence and submissions of the Permit Holder. Without taking the primary purpose of the spray program into consideration, the Panel doubts whether the Deputy Administrator could have properly analysed the reasonableness of the adverse effect on non-target Lepidoptera. One cannot weigh the risk against the benefit, without knowledge of the primary benefit, or purpose, of the aerial spraying. The Panel finds that this is a serious shortcoming in the Deputy

Administrator's decision-making process. The Panel recommends that, in future, the Deputy Administrator assess the actual purpose of each permit application.

Several Appellants submitted that the Permit does not comply with the precautionary principle of the 1992 International Convention on Biological Diversity. That principle was quoted by one of the Appellants as:

Where there is a threat to the environment, the lack of scientific certainty shall not be used as a reason for postponing measures to prevent the threat.

The Appellants submit that the pesticide spraying allowed in the Permit is a threat to the environment, and lack of scientific certainty about that threat should not be an excuse to postpone measures to prevent that threat. The Panel agrees with and adopts the reasoning of the Board in the 1998 *Resident Advisory Board* decision that the Convention provides general principles for the conservation and sustainable use of biological diversity, and that weighing of risks and benefits is the very kind of analysis contemplated by the Convention, and undertaken in determining whether there is an unreasonable adverse impact in issuing a permit.

The Panel finds that the only evidence it has properly before it, as required by the relevant legislation and case law discussed above, to weigh the adverse effect against the benefit of the spray, results in the following equation:

Likely non-permanent significant decrease in non-target Lepidoptera *versus* threat of trade restrictions on some forest products and nursery stock, and subsequent economic harm.

The Panel finds the adverse effect is not unreasonable in the circumstances of this Permit, given the limited evidence before it, and confined as it is by legislation and case law to site specific considerations.

That is not to say that Panel is unconcerned. There are serious issues and questions arising from this hearing. Repeated introductions of the gypsy moth into British Columbia appears inevitable. The Panel urges the Permit Holder to seriously reconsider the requirement for "eradication," and contemplate an approach to the gypsy moth that uses alternative methods for control.

DECISION

In making this decision, the Panel of the Environmental Appeal Board has considered all the relevant documents, evidence and submissions made at the hearing, whether or not they have been specifically reiterated here.

As noted above, there were shortcomings in the Deputy Administrator's decision. By not knowing and considering the primary purpose of the spray program, he failed to carry out a complete analysis of the unreasonableness of the adverse effects of the spray program in the permit. The Panel has *de novo* authority to review the evidence presented to it, and has included the purposes of the spray program in its analysis.

The Panel had very little evidence upon which to undertake a proper analysis of unreasonable adverse effect. It had no site specific evidence put before it, except of the adverse effect on non target Lepidoptera, which was admitted by the Respondent and Permit Holder.

There was no site specific evidence of adverse effect from this spray program except for the harm to non-target Lepidoptera. Evidence indicates the local butterfly and moth populations will return. There is evidence that failure to eradicate the gypsy moth appearances in B.C will have economic impacts in the form of trade sanctions. The Permit is therefore upheld, with the amendment that Foray 48B product registration number 24977 should be specified on the Permit.

The appeals are dismissed.

E. Jane Luke, Panel Chair
Environmental Appeal Board

April 14, 2000