BRITISH COLUMBIA

Environmental Appeal Board

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APPEAL NOS. 99-WAS-06/08(d), 99-WAS-11/12/13(d), 00-WAS-01(d)

In the matter of appeals under section 44 of the *Waste Management Act*, R.S.B.C. 1996, c. 482.

BETWEEN:	Laurie Mutschke and Emily Dodd Dave Stevens Dr. Elizabeth Bastian	**APPELLANT #1**
AND:	Northwood Inc. (Now Canadian Forest Products Ltd.)	**APPELLANT #2**
AND:	Houston Forest Products Company	**APPELLANT #3**
AND:	Assistant Regional Waste Manager	**RESPONDENT**
AND:	West Fraser Mills Ltd. (D.B.A. Pacific Inland Resources)	**THIRD PARTY**
AND:	British Columbia Lung Association	**PARTICIPANT**

BEFORE: A Panel of the Environmental Appeal Board
Marilyn Kansky, Chair
Carol Quin, Member
Phillip Wong, Member

DATES OF HEARING: February 21-25, 2000; February 28-March 3, 2000; April 3-4, 2000; September 6-8, 2000; Concluded by way of written submissions on November 9, 2000

PLACE OF HEARING: Smithers, B.C. and Vancouver, B.C.

APPEARING:	For Appellant #1:	Timothy J. Howard, Counsel Dr. Amir Attaran, Counsel
	For Appellant #2:	Peter Voith, Counsel Michelle B. Pockey, Counsel
	For Appellant #3:	Nils E. Daugulis, Counsel Shane Nossal, Counsel
	For the Respondent:	Dennis Doyle, Counsel
	For the Third Party:	Paul R. Cassidy, Counsel Janice H. Walton, Counsel
	For the Participant:	Wendy Baker, Counsel

APPEALS

These are appeals brought by Laurie Mutschke, on behalf of herself and the infant, Emily Dodd, Dave Stevens and Dr. Elizabeth Bastian (collectively the "Individual Appellants"), Northwood Inc. and Houston Forest Products Company ("Houston"). Because Northwood Inc. is now Canadian Forest Products Ltd., it will be referred to as "Canfor" in this decision.

Individual Appellants' Appeals and Remedy Sought

The Individual Appellants appeal three decisions by Frank Rhebergen, Assistant Regional Waste Manager (the "Assistant Manager") of the Skeena Region, Ministry of Environment, Lands and Parks, now the Ministry of Water, Land and Air Protection (the "Ministry"), to amend three permits which, among other things, authorize emissions from what are commonly known as "beehive burners." The three decisions appealed are as follows:

- a January 27, 1999 decision to amend Waste Permit PA-01543 issued to Canfor,

- a January 26, 1999 decision to amend Waste Permit PA-05339 issued to Houston, and

- a December 20, 1999 decision to amend Waste Permit PA-01691 issued to West Fraser Mills Limited, doing business as Pacific Inland Resources ("West Fraser").

Originally, the Individual Appellants sought an Order quashing the permits. However, in a decision by the Board (Appeal Nos. 99-WAS-06(c), 08(c) and 11(c)-13(c), February 3, 2000) (unreported), the Board held that it does not have the jurisdiction to grant an Order quashing the permits as they relate to the authorization of the beehive burners; its jurisdiction only relates to the decisions amending the permits. In their closing arguments, the Individual Appellants clarified that they were seeking an Order of the Board, pursuant to section 10(1)(a) and (f) of the *Waste Management Act*, (the "*Act*"), amending the permits to require Canfor, Houston and West Fraser

- to install works and/or generate power from the incineration of the wood waste in a manner that eliminates the pollution produced by the incineration of the wood waste, by installing affordable and feasible technologies to replace the burners;

- to replace the burners within a certain, fixed timeline that respects the existence of the present deadline set out in the *Wood Residue Burner and Incinerator Regulation*, B.C. Reg. 519/95, as amended.[1]

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[1] Because there were some revisions to the relief that was sought, in part because of the amendment of the *Wood Residue Burner and Incinerator Regulation,* B.C. Reg.519/95, part way through the hearing, the following is based on the relief as stated in the closing arguments provided by the Individual Appellants.

In their closing argument, the Individual Appellants also provided suggested wording for proposed amendments. However, after the *Wood Residue Burner and Incinerator Regulation*, B.C. Reg. 519/95, was amended on July 14, 2000, the Individual Appellants provided revised specific suggested wording for amendments in their Argument in Reply dated August 18, 2000 (the "Individual Appellants' Proposed Amendments").

In the alternative, the Individual Appellants have asked the Panel to adopt the amended wording of their Proposed Amendments that was proposed by the Respondent in reply to the Individual Appellants' Proposed Amendments on September 7, 2000 at the hearing (the "Respondent's Proposed Amendments"). These Proposed Amendments are set out under Issue 4(a).

Canfor's Appeal and Remedy Sought

Canfor appeals the following decision:

- the January 27, 1999 decision by the Assistant Manager to amend its Waste Permit PA-01543.

Canfor seeks an Order of the Board rescinding the amendments to its permit. However, in its written closing argument, Canfor, subject to the qualification that it is not detracting from the relief sought, submits that if co-generation is a real possibility and the burners are to be phased-out in a time contemporaneous with the establishment and start-up of such a facility, Canfor would agree to make appropriate modifications to its beehive burner in the interim.

Houston's Appeal and Remedy Sought

Houston appeals the following decision:

- the January 26, 1999 decision by the Assistant Manager to amend its Waste Permit PA-05339.

Houston seeks an Order of the Board rescinding the amendments made by the Assistant Manager on January 26, 1999 to sections 6(a), 6(b), 6(c), 7 and 8 of its permit. Houston further seeks an Order of the Board that Permit PA-05339 be sent back to the Assistant Manager with the following directions:

(a) the Assistant Manager refrain from amending Houston's permit dated April 25, 1996, until

  (i) the Cabinet has rendered its decision on the adherence to, or the extension of, the December 31, 2000, deadline for the shut-down of Houston's beehive burner, or has made such other decision regarding the disposition of the *Wood Residue Burner and Incinerator Regulation* (B.C. Reg. 519/95), and

(ii) the Assistant Manager has engaged in meaningful consultations with Houston on the terms of any proposed amendments to Houston's permit dated April 25, 1996, including the nature and extent of the modifications to the beehive burner in light of the Cabinet's decision on the deadline for the shut-down of Houston's beehive burner.

West Fraser Third Party Status

West Fraser was granted full party status in the other appeals before the Board on December 14, 1999.

British Columbia Lung Association

The British Columbia Lung Association ("B.C. Lung") was granted participant status on a limited basis by the Board in its decision dated January 21, 2000 (Appeal Nos. 99-WAS-06(b), 08(b), and 11-13(b) (unreported).

The Board has the authority to hear these appeals under section 11 of the *Environment Management Act*, R.S.B.C. 1996, c. 118 and section 44 of the *Act*. Section 47 of the *Act* sets out the Board's powers on an appeal. The Board may:

(a) send the matter back to the person who made the decision, 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.

These appeals were heard together.

BACKGROUND

The three companies, Canfor, Houston and West Fraser (the "Corporate Parties"), all operate mills, which utilize a beehive burner.

Canfor operates a sawmill-planer mill in the community of Houston, B.C., approximately 60 kilometres southeast of Smithers. On June 19, 1972, Canfor obtained Permit PA-01543, which authorizes the discharge of certain emissions from several sources. Section 1.7 of its permit authorizes Canfor to discharge emissions into the air from a beehive burner.

Houston commenced operation of a sawmill-planer mill in the community of Houston, B.C. in 1978. It produces dimension lumber and pulp chips and employs about 400 employees. On February 9, 1979, Houston obtained Permit PA-05339, which authorizes the discharge of certain emissions from several sources. Section 1.1 of its permit authorizes Houston to discharge emissions into the air from a beehive burner. The Houston mill produces annually approximately 60,000 to 64,800 tons of waste wood, including "brown wood" or bark. The Houston mill uses a modified beehive burner which has a damper, under-fire and over-fire fans and a

computer to regulate the temperature. A burner operator is employed to control the feed and to monitor the opacity of the emissions.

The Third Party, West Fraser, operates a sawmill and a planer mill in the community of Smithers, B.C. On October 27, 1972, West Fraser obtained Permit PA-01691, authorizing the discharge of emissions from its sawmill and planer mill. Section 1.1 of the permit authorizes the discharge of emissions from a beehive burner.

All three of the beehive burners are located in the Bulkley Valley, approximately 250 kilometres inland from the westcoast of B.C.

On December 7, 1995, the *Wood Residue Burner and Incinerator Regulation,* B.C. Reg. 519/95, was enacted and came into effect on January 1, 1996. This *Regulation* prohibited the use of a beehive burner unless the burner facility operator was listed in Schedule 1 of the *Regulation*, and was authorized to operate a beehive burner on December 31, 1995, by a "valid and subsisting permit"

On December 18, 1997, the *Regulation* was amended by Order In Council ("OIC") and, pursuant to B.C. Reg. 436/97, the phase-out date for the beehive burners was extended to December 31, 1998. As a proviso of the extension of the phase-out of the beehive burners, there was to be a consultation process with the communities.

On December 18, 1998, the *Regulation* was further amended by OIC, and pursuant to B.C. Reg. 480/98, the phase-out date for the beehive burners listed in Schedule 1 was further extended to December 31, 2000.

Under the 1998 *Regulation*, Canfor, Houston and West Fraser were listed in Schedule 1, and were authorized to operate their beehive burners to dispose of wood residue until December 31, 2000.

It is important to note that, when the hearing commenced, the *Wood Residue Burner and Incinerator Regulation* was in effect, with amendments up to and including B.C. Reg. 171/99. After the closing of evidence, but prior to the submission and presentation of final arguments, the *Regulation* was amended by OIC No. 1046, dated July 14, 2000, B.C. Reg. 268/2000. The *Regulation*, as amended up to 2000, will be hereinafter referred to as the "*2000 Regulation*." The *2000 Regulation* was further amended by B.C. Reg. 17/2001, which came into effect on January 1, 2001. As a result of the changes in the *2000 Regulation* (addressed below), Houston added an additional ground for rescinding the amendments, namely that the permit amendments are superseded by the *2000 Regulation*. The *Regulation*, as amended to January 1, 2001, will hereinafter be referred to as the "*Amended Regulation*."

As well, the *Rebate of Waste Management Fees Regulation*, B.C. Reg. 267/2000, came into effect on January 1, 2001 (the "*Rebate Regulation*"). The impact of this *Regulation* on the appeals will be addressed below.

On January 27, 1999, the Assistant Manager amended Canfor's permit as follows:

- Section 7 - improvements to the beehive burner and related operational procedures must be implemented, including requirements related to continuous controlled fuel feed, supplementary fuel, episodes of poor ambient air quality and submission of a plan;

- Section 8 - progress reports must be submitted to the Regional Waste Manager by June 30 and December 31 of each year in a format suitable for publication in local newspapers and distribution to local public libraries;

- Section 9 - a continuous emissions monitoring system must be implemented which will enable members of Pollution Prevention staff and the general public to view a real-time video image of the beehive burner and power boiler emissions via the Internet; and

- Section 10 - environmental protection plans must be submitted to the Regional Waste Manager, as required.

On February 18, 1999, Canfor appealed the Assistant Manager's decision on the basis that he exceeded his jurisdiction for the following reasons:

- The amendments to section 1.3.1 (rate of discharge from hog fuel power boilers) and section 1.7.2 (smoke discharge opacity from the beehive burner) are arbitrary and unreasonable in that they are objectively unachievable with the technology presently available;[2]

- With respect to the amendments to section 7 (implement improvements and related operational procedures), there is no evidence, or in the alternative, insufficient evidence that such improvements are necessary for the protection of the environment. As well, the requirement for such upgrades is unreasonable in circumstances where the beehive burners are required, by the 1998 *Regulation*, to be phased-out and shut down by December 31, 2000;

- The amendments to section 8 (progress reports) and section 9 (implementation of a continuous emissions monitoring system) are arbitrary, unreasonable and discriminatory because they are not imposed on a region-wide basis, and exceed the jurisdiction of the Assistant Manager because they are not necessary for or relevant to the protection of the environment;

- The amendments to section 10 (submission of environmental protection plans) are vague and uncertain and therefore, unreasonable. Further, they are not imposed on a region-wide basis and are therefore discriminatory.

On January 26, 1999, the Assistant Manager amended Houston's permit. The amendments that are relevant to this appeal are as follows:

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[2] The Panel deals with the issue of whether sections 1.3.1 and 1.7.2 were actually amended by the Assistant Manager in its findings later in the decision.

- Section 6(a) - the modification of the beehive burner system to accomplish continuous controlled fuel feed;

- Section 6(b) - the modification of the beehive burner system to accomplish the ability to provide supplementary fuel in certain circumstances;

- Section 6(c) - a fuel storage facility to accomplish the capacity for episode management;

- Section 7 - the requirement for the submission of burner phase-out progress reports to the Regional Waste Manager by June 30 and December 31 of each year in a suitable format for publication in local newspapers and distribution to local libraries;

- Section 8 - the implementation of a continuous emissions monitoring system consisting of a video camera and computer system (the "Webcam system") which will enable Pollution Prevention staff and members of the general public to view a real-time video image of the beehive burner emissions via the Internet.

On February 5, 1999, Houston appealed the Assistant Manager's decision to amend its permit on the grounds that the Assistant Manager exceeded his jurisdiction; the amendments are not necessary for the protection of the environment; there is insufficient evidence available to justify the amendments; and the amendments are unreasonable because they call for extensive and costly capital investments in Houston's beehive burner that is to be phased-out by December 31, 2000.

On January 27, 1999, the Assistant Manager amended West Fraser's permit, and West Fraser appealed the decision. However, the appeal was withdrawn on December 13, 1999 and West Fraser was given full status in the remaining appeals.

On February 23, 1999, the Individual Appellants appealed the decisions of the Assistant Manager to amend the permits of Canfor, Houston and West Fraser. The Individual Appellants appealed on the grounds that the permits authorize the creation of air pollution in the Bulkley Valley airshed that:

1. Exceeds the provincial Interim Air Quality Objective for Fine Particulate Matter (PM_{10}) (particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometres);

2. Exceeds the reference level for PM_{10} established by the National Ambient Air Quality Objectives for Particulate Matter;

3. Causes or creates the risk of adverse health effects in residents of the valley airshed; and

4. Causes or creates the risk of adverse health effects for residents of the valley airshed who are asthmatic, elderly and/or infants, which differential effects are discriminatory and constitute a breach of section 15 of the *Canadian Charter of*

Rights and Freedoms, Schedule B to *Canada Act, 1982*, c. 11 (U.K.) (the "*Charter*").

On December 20, 1999, the Assistant Manager again amended West Fraser's permit, in essence withdrawing the previous amendments.

The Individual Appellants filed an amended notice of appeal in respect of that amended permit on January 19, 2000.

West Fraser submits that the December 20, 1999 decision should be upheld by the Board without change, and that the appeals by the Individual Appellants should be dismissed on the grounds that the relief sought by the Individual Appellants is not available because:

- The issue of whether the Board can order the beehive burners to be shut down has been previously decided by the Board in its decision dated February 3, 2000;
- There is no meritorious evidence to substantiate the claims by the Individual Appellants that the West Fraser burner causes adverse health effects;
- The *2000 Regulation* and the introduction of the *Rebate Regulation* renders the Individual Appellants' request for an Order changing the episode management provisions of West Fraser's permit, and adding requirements related to phase-out and construction of either a co-generation plant or incinerator, unavailable, as the Board no longer has the jurisdiction to make these Orders; and
- The *2000 Regulation* renders the Individual Appellants' appeals moot.

In its Final Argument, West Fraser asks the Board to find that the Individual Appellants' appeal is moot and dismiss it in its entirety, and decline to make the amendments to West Fraser's permit that are set out in the Individual Appellants' Proposed Amendments and the Respondent's Proposed Amendments, with the exception of the $PM_{2.5}$ monitor.

B.C. Lung submits that the relevant paragraphs in the permits, which allow the continued operation of the burners, should be removed. Alternatively, it supports the Individual Appellants' Proposed Amendments of August 18, 2000.

ISSUES

The following are the issues that the Panel must determine:

1. Whether the *Amended Regulation* and the introduction of the *Rebate Regulation* have rendered the Individual Appellants' appeals moot.
2. Whether the amendments to the permits are for the protection of the environment:

a. Whether the particulate matter from the beehive burners contributes to the air quality of the Bulkley Valley.

b. Whether the particulate matter from the beehive burners will cause an adverse effect on the environment and human health.

3. Whether the Assistant Manager had the jurisdiction to amend

   i. Canfor's Permit PA-01543;

   ii. Houston's Permit PA-05339;

   iii. West Fraser's Permit PA-01691; and, if so,

   whether the Assistant Manager's specific amendments are reasonable under the circumstances.

4. Whether the Panel should vary the Assistant Manager's decision with respect to each permit:

   a. Whether there would be a breach of procedural fairness or a denial of natural justice for the Panel to consider and impose any or all of the Individual Appellants' Proposed Amendments or the Respondent's Proposed Amendments.

   b. Whether it is reasonable under the circumstances for the Panel to grant the Individual Appellants' remedy by varying the Assistant Manager's amendments to the permits.

5. Whether the terms of the permits are a violation of section 15(1) of the *Charter*.

6. Whether costs should be awarded against Canfor with respect to the revisions made to the *Jacques Whitford Report*.

RELEVANT LEGISLATION

Waste Management Act

Definitions and Interpretation

1 (1) In this Act:

"**environment"** means the air, land, water and all other external conditions or influences under which humans, animals and plants live or are developed;

Permits

10 (1) A manager may issue a permit to introduce waste into the environment, to store special waste or to treat or recycle special waste subject to requirements for the protection of the environment that the manager

considers advisable and, without limiting that power, may in the permit do one or more of the following:

(a) require the permittee to repair, alter, remove, improve or add to works or to construct new works and to submit plans and specifications for works specified in the permit;

...

(c) require the permittee to monitor in the way specified by the manager the waste, the method of handling, treating, transporting, discharging and storing the waste and the places and things that the manager considers will be affected by the discharge of the waste or the handling, treatment, transportation or storage of the waste;

(d) require the permittee to conduct studies and to report information specified by the manager in the manner specified by the manager;

(e) specify procedures or requirements respecting the handling, treatment, transportation, discharge or storage of waste that the permittee must fulfil;

Amendment of permits and approvals

13 (1) A manager may, subject to this section and the regulations, and for the protection of the environment,

(a) on the manager's own initiative if he or she considers it necessary, or

(b) on application by a holder of a permit or holder of an approval,

amend the requirements of the permit or approval.

...

(4) A manager's power to amend a permit or approval includes all of the following:

(a) authorizing or requiring the construction of new works in addition to or instead of works previously authorized or required;

(b) authorizing or requiring the repair of, alteration to, improvement of, removal of or addition to existing works;

...

(e) authorizing or requiring a change in the characteristics or components of waste discharged, stored, treated, handled or transported;

(f) authorizing or requiring a change in the quantity of waste discharged, stored, treated, handled or transported;

...

(h) altering the time specified for the construction of works or the time for other requirements imposed on the holder of the permit or the approval;

(i) authorizing or requiring a change in the method of discharging, storing, treating, handling or transporting the waste;

(j) changing or imposing any procedure or requirement that was imposed or could have been imposed under section 10 or 11.

...

(7) If a manager amends a permit or approval, the manager

(a) may require that a holder of the permit or approval supply the manager with plans, specifications and other information the manager requests, and

(b) must give the holder of the permit or approval notice in writing of the amendment and publish notice of the amendment in the prescribed manner.

Wood Residue Burner and Incinerator Regulation

As noted earlier, when the hearing commenced, the *Wood Residue Burner and Incinerator Regulation*, B.C. Reg. 519/95 was in effect, with amendments up to and including B.C. Reg. 171/99. After the closing of evidence, but prior to the submission and presentation of final arguments, this *Regulation* was amended by OIC No. 1046, i.e., the *2000 Regulation*.

The *2000 Regulation* was further amended by B.C. Reg. 17/2001. The 2001 amendments added Schedule 3, which lists burner facility operators and locations that are subject to sections 2(3) and 2(4), allowing an extension for disposal of wood residue in an emergency, labour dispute or work stoppage situation. These provisions do not have an impact on this appeal. As noted earlier, the *Regulation* as amended to include the 2001 amendments is referred to in this decision as the *Amended Regulation*.

Relevant portions of the *2000 Regulation* are set out below, with the changes to the *2000 Regulation* and those resulting from the 2001 amendments noted through underlining.

Interpretation

1 In this regulation:

"Act" means the *Waste Management Act*

"beehive burner" means a conical-shaped single chamber incinerator used for the disposal of wood residue;

"burner facility" means a beehive burner, a modified silo burner or an unmodified silo burner; [B.C. Reg.17/2001]

"emergency" means a temporary circumstance whereby the continued disposal of wood residue by a means other than a beehive burner or unmodified silo burner is beyond the reasonable control of the burner facility operator;

...

"opacity" means the degree to which an emission reduces the passage of light or obscures the view of an object in the background, and is expressed numerically from 0 percent (transparent) to 100 percent (opaque);

"PM_{10}" means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometres;

"treatment works" means abatement equipment that is used for the specific purpose of reducing the release of air contaminants to the atmosphere:

...

"wood residue incinerator" means a combustion facility, which includes combustion controls and particulate collection equipment for the destruction of wood residue but does not include a wood-fired boiler, beehive burner or unmodified silo burner.

Beehive burners and unmodified silo burners

2 (1) Except as otherwise provided in this section, a person must not use a beehive burner, unmodified silo burner or modified silo burner to dispose of wood residue.

(2) A burner facility operator listed in column 1 of Schedule 1 may use a beehive burner or unmodified silo burner to dispose of wood residue until the date set out opposite in Column 2 if

(a) on December 31, 1995, the burner facility operator is authorized to do so by a valid and subsisting permit,

(b) the burner facility operator undertakes to a manager to complete the necessary modifications to meet the conditions set out opposite in Column 3 by July 31, 2001, if applicable, and

(c) after July 31, 2001, if applicable, the burner facility is operated using the equipment, practices and operating criteria set out opposite in Column 3. [B.C. Reg.268/2000]

(2.1) Despite subsection (2), a permit continues to be required to use a beehive burner or unmodified silo burner and all terms and conditions of the permit apply except where there is a conflict with this regulation, in which case this regulation applies.

(3) Subject to subsection (4), a burner facility operator in Column 1 of Schedule 1 may, on application to a manager, use a beehive burner or unmodified silo burner to dispose of wood residue on and after the date set out opposite in Column 2 if, in the opinion of the manager, the burner facility operator is unable to use an alternative means of disposing of wood residue because of an emergency, labour dispute or work stoppage.

(4) An application under subsection (3) may be authorized by the manager

(a) for a period not exceeding 90 operating days, or

(b) with the approval of the minister, for a period exceeding 90 operating days,

but the authorization terminates when the emergency, labour dispute or work stoppage ends.

(4.1) Subsections (3) and (4) apply to a burner facility operator listed in Schedule 3. [B.C. Reg.17/2001]

(5) A person who is not a burner facility operator listed in Column 1 of Schedule 1 or in Schedule 3 may use a beehive burner or unmodified silo burner if the person is, on December 31, 1995, authorized to do so by a valid and subsisting permit. [B.C. Reg. 17/2001]

(6) The date in Column 2 of Schedule 1 for a burner facility operator set out opposite Column 1 is extended to a date not later than December 31, 2004 determined by a manager if

(a) the burner facility operator submits a burner phase out plan and schedule to the manager,

(b) that plan and schedule demonstrate to the satisfaction of the manager that the burner facility operator has entered into agreements to implement alternative methods to use or dispose of the wood residue, and

(c) the manager is satisfied that the phase out plan will be implemented by that date.
[B.C. Reg. 268/2000]

(7) On application to the minister, a manager may approve, for protection of the environment, the construction and use of a modified silo burner, subject to a requirement that the applicant operate the burner in accordance with a plan and specifications incorporated into and forming a part of a permit issued under section 10 of the Act.

(8) Despite the fees regulation, for the purposes of determining the fee payable to operate a burner facility by a burner facility operator listed in Column 1 of Schedule 1, or Schedule 3, to this regulation, the fee per tonne discharged set out in Column 2 of Schedule B of the fees regulation for the Total Particulate in Column 1 of that Schedule is deemed [B.C. Reg.268/2000; B.C. Reg.17/2001][3]

(a) for the period January 1, 2001 to December 31, 2001 to be $110,

(b) for the period January 1, 2002 to December 31, 2002 to be $120,

(c) for the period January 1, 2003 to December 31, 2003 to be 130, and

(d) for the period January 1, 2004 to December 31, 2004 to be $140,
[B.C. Reg.268/2000]

and the fee payable by all other burner facility operators to operate a beehive burner or unmodified silo burner is deemed to be $16.30 per tonne of discharged total particulate commencing January 1, 2001. [B.C. Reg.268/2000]

(9) For the purposes of subsection (8), the fee must be calculated using the discharge as authorized in the permit or approval.

...

The relevant portions of Schedule 1, that pertain to the applicable parties to this appeal are as follows. The first Schedule, as per B.C. Reg.480/98 that was in effect when the appeal commenced, specifies that the beehive burners could be operated until December 31, 2000.

Schedule 1
(en. B.C. Reg. 480/98, s.3)

[3] The amended provision for subsection (8), as per B.C. Reg.268/2000, was as follows: Despite the fees regulation, for the purposes of determining the fee payable to operate a beehive burner, unmodified silo burner or modified silo burner, by a burner facility operator listed in Column 1 of Schedule 1 to this regulation the fee per tonne discharged set out in Column 2 of Schedule B of the fees regulation for the Total Particulate in Column 1 of that Schedule is deemed...

	Column 1	Column 2
	Burner Facility Operator and Location	**Date**
10	Houston Forest Products Company, Houston	Dec. 31, 2000
18	Northwood Pulp and Timber Limited, Houston (Canfor)	Dec. 31, 2000
26	West Fraser Mills Ltd., Smithers	Dec. 31, 2000

The following Schedule 1 is from the *2000 Regulation*. This Schedule specifies that the beehive burners can be operated until December 31, 2003, and the operating criteria under which the burner must be operated. Schedule 1 was not amended further in 2001.

Schedule 1

[en. B.C. Reg. 268/2000, s.2]

	Column 1 Burner Facility Operator and Location	Column 2 Date	Column 3 Conditions
5	Canadian Forest Products Limited, Houston	Dec. 31, 2003	Burner upgrade to continuous feed and residue diversion to allow burner shut down for a period of up to 5 operating days. Install webcam to monitor burner only, with viewing access restricted to Manager.
10	Houston Forest Products Company, Houston	Dec. 31, 2003	Burner upgrade to continuous feed and residue diversion to allow burner shut down for a period of up to 5 operating days. Install webcam to monitor burner only, with viewing access restricted to Manager.
22	West Fraser Mills Ltd., Smithers	Dec. 31, 2003	

Rebate of Waste Management Fees Regulation

The provisions in this *Regulation* are as follows:

Definition

1 In this regulation:

"Act" means the *Waste Management Act*;

"Sustainable Environment Fund" means the fund continued under the *Sustainable Environment Fund Act*.

Rebate of waste management fees

2 The minister may pay money out of the Sustainable Environment Fund to rebate fees or charges paid under section 2(8) of the Wood Residue Burner and Incinerator Regulation, B.C. Reg. 519/95, for the purpose of fostering expenditures in or contributions towards the development or commercialization of value added uses for wood residues.

Amount of rebate

3 The amount of a rebate under section 2 is the lesser of

(a) the amount by which the fees paid by the payee under section 2(8) of the Wood Residue Burner and Incinerator Regulation, B.C. Reg. 519/95, for the calendar year for which the rebate is paid exceed the amount paid by the payee under that section for the 2000 calendar year, and

(b) 1.1 times the expenditures or contributions made for the purpose referred to in section 2 by the payee for the calendar year for which the rebate is paid.

Air Quality Objectives/Standards for PM_{10} and $PM_{2.5}$

British Columbia has an ambient Air Quality Objective for PM_{10} of 50 micrograms per cubic metre ($\mu g/m^3$).

In November, 1999, *Canada-Wide Standards for Particulate Matter* were finalized. These standards were posted by Environment Canada in the Canada Gazette on February 5, 2000, and were accepted by the Canadian Council of Ministers of the Environment ("CCME") on June 5 and 6, 2000. In the *Canada-Wide Standards*, there is a recommendation for a standard of 30 $\mu g/m^3$ for $PM_{2.5}$, to be achieved by 2010, but there is no recommendation for a PM_{10} standard. It is noted in the Canada Gazette posting that the Ministers would also consider options for a standard for PM_{10}, of either 65 $\mu g/m^3$ or 50 $\mu g/m^3$.

The *National Ambient Air Quality Objective for Particulate Matter Science Assessment Document* recommended reference levels of 25 and 15 $\mu g/m^3$ for PM_{10} and $PM_{2.5}$, respectively.

The United States Environment Protection Agency ("U.S. EPA") has a standard for PM_{10} of 150 $\mu g/m^3$ and for $PM_{2.5}$ of 65 $\mu g/m^3$.

DISCUSSION AND ANALYSIS

1. Whether the *Amended Regulation* and the introduction of the *Rebate Regulation* have rendered the Individual Appellants' appeals moot.

The *Amended Regulation* extends the possible use of beehive burners by Canfor, Houston and West Fraser until December 31, 2003, if prescribed conditions are met. These conditions are out in section 2(2):

> **2** (2) A burner facility operator listed in column 1 of Schedule 1 may use a beehive burner or unmodified silo burner to dispose of wood residue until the date set out opposite in Column 2 if
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> (a) on December 31, 1995, the burner facility operator is authorized to do so by a valid and subsisting permit,
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> (b) the burner facility operator undertakes to a manager to complete the necessary modifications to meet the conditions set out opposite in Column 3 by July 31, 2001, if applicable, and
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> (c) after July 13, 2001, if applicable, the beehive burner is operated using the equipment, practices and operating criteria set out opposite in Column 3.

The operating criteria set out in column 3 of Schedule 1 are as follows:

- Canfor and Houston are required to upgrade the burner to continuous feed and residue diversion to allow burner shut down for a period of up to 5 operating days, and to install a webcam to monitor the burner only, with viewing access restricted to the manager.

- In the case of West Fraser, no specific conditions were referred to in the *Amended Regulation*.

As well, section 6 of the *Amended Regulation* provided for a further extension up to December 31, 2004, at the discretion of the manager, if certain conditions are met, as follows:

- If the operator submits a burner phase-out plan and schedule to the manager;

- The plan and schedule demonstrates to the satisfaction of the manager that the operator has entered into agreements to implement alternative methods to use or dispose of the wood residue; and

- The manager is satisfied that the phase-out plan will be implemented by the date of the extension (up to December 31, 2004).

The Corporate Parties' Submissions

Houston argues that the *Amended Regulation* renders obsolete the permit amendments under appeal in this proceeding. It submits that, pursuant to section 2(2.1) of the *Amended Regulation*, the terms of the *Amended Regulation* take precedence over the terms of the permit. Section 2(2.1) states as follows:

> **2** (2.1) Despite subsection (2), a permit continues to be required to use a beehive burner…and all terms and conditions of the permit apply except where there is a conflict with this regulation, in which case this regulation applies.

Houston submits that by passing the *Amended Regulation*, Cabinet has expressly and exhaustively dealt with the issues of the modifications to Houston's beehive burner, episode management, reporting requirements, phase-out plans and the webcam. Accordingly, there is no scope for the requirements in the amended permit, which are the subject of the Individual Appellants' appeals.

Houston further submits that, through the *Amended Regulation*, "Cabinet has recognized that the preferred solution to the continued operation of Houston's beehive burner, namely, co-generation or another value-added project, is a political solution and not merely an environmental one." Houston further submits that the political dimension impacts on the Board's jurisdiction in that the *Amended Regulation* affects and circumscribes the Board's jurisdiction to grant remedies in these proceedings.

The Panel notes that both Canfor and West Fraser have adopted and rely on the submissions of Houston with respect to whether the *Amended Regulation* has rendered the Individual Appellants' appeal moot. However, Canfor and West Fraser add that the Board has no jurisdiction to revise the permits as requested by the Individual Appellants or the Respondent because they are inconsistent with the *Amended Regulation* and its purposes and objects. As well, they submit that the Respondent's Proposed Amendments to the Individual Appellants' Proposed Amendments would effectively result in the indefinite shut down of the beehive burners, contrary to the intent and provisions of the *Amended Regulation*.

West Fraser further submits that the amendments proposed by the Individual Appellants are inconsistent with the *Rebate Regulation* with respect to the phase-out dates, the restriction of the alternatives to the beehive burners to either co-generation or incineration, the detailed phase-out plans, and the extension of the temporary storage from five to seven days.

West Fraser argues that the timing of the amendments to the *Amended Regulation* and implementation of the *Rebate Regulation* demonstrates that Cabinet has turned its mind to the issues in this appeal, and has decided that they must be dealt with through regulatory amendment, rather than by this Board. Therefore, in addition to being outside the Board's jurisdiction, West Fraser argues that it would be inappropriate for the Panel to impose requirements, which are inconsistent with the provisions that have been considered, and ruled on, by Cabinet.

Individual Appellants' Submissions

The Individual Appellants submit that the ability of the Panel to amend the permits of Canfor and Houston are clearly within the exercise of powers specifically vested in the Board by section 47(c) of the *Act*. They argue that this jurisdiction allows the Board to make any order that the Assistant Manager could have made under sections 10 and 13 of the *Act*. The Assistant Manager's powers when amending permits are found in section 13(4). Additionally, under section 13(4)(j), the Assistant Manager can impose any requirement when amending a permit that could have been imposed under section 10.

The Individual Appellants further submit that the effect of the *Amended Regulation* on the Board's powers is that, under section 2(2) of the *Amended Regulation*, a burner listed in the attached Schedule may operate to the date specified in the Schedule. It also provides at section 2(2.1) that, despite subsection (2), each burner still requires a permit, and the terms of the permit govern the operation of the burner unless those terms conflict with the *Amended Regulation*, in which case the *Amended Regulation* applies. They submit that the inclusion of section 2(2.1) in the *Amended Regulation* manifests Cabinet's intention to make the operation of the beehive burners subject to the Assistant Manager's powers (and the Board's powers) under sections 10 and 13 of the *Act*. It suggests that Cabinet has not "occupied the field of the regulation of the burners;" it has carved out a discrete and narrow role for the *Amended Regulation*, which is complemented by the broader powers of the Assistant Manager and the Board.

B.C. Lung's Submissions

B.C. Lung submits that, rather than removing the requirement for a permit, the *Amended Regulation* confirms that the beehive burners remain subject to all of the terms and conditions of the permits. The only exception is where there is a conflict between the permit and the *Amended Regulation*, in which case the regulation will prevail. B.C. Lung further submits that the *Amended Regulation* has the effect of establishing minimum conditions which must be met in the continued operation of the burners. The Assistant Manager and the Board retain the discretion to impose conditions consistent with the purposes of the *Act*, where those conditions do not conflict with the *Amended Regulation*.

In response to Canfor, B.C. Lung also submits that the *Rebate Regulation* does not impose any restriction on the Board's ability to deal with the amendments sought in the appeals. It simply provides a financial incentive to companies to pursue value-added uses for wood residues.

Respondent's Submission

The Respondent submits that any decision of the Panel in these appeals will be subject to the requirements of the *Amended Regulation*. Accordingly, the issues under appeal have been somewhat diminished to the extent that the *Amended Regulation* imposes conditions on the operation of the beehive burners pending a phase-out of their operation. However, he submits that section 2(2.1) of the

Amended Regulation continues the existing requirement for permits issued under the *Act* to authorize continued operation of the beehive burners.

The Respondent notes that the *Amended Regulation* includes operational conditions for the beehive burners of the Corporate Parties. Specifically, under section 2(2)(b) of the *Amended Regulation* the Corporate Parties must, as a condition of continued operation to 2003, undertake to complete modifications as necessary to meet the above conditions by July 31, 2001, and thereafter must operate the burners using the criteria as set forth in the *Amended Regulation*. There are no operational conditions specified in column 3 of Schedule 1 of the *Amended Regulation* for the West Fraser beehive burner.

While the operating conditions set forth in the *Amended Regulation* require continuous feed and residue diversion, the Respondent notes that the requirements fall short of those specified in the permit amendments in the following respects:

(a) The permit amendments require not only continuous feed but "continuous controlled fuel feed which will allow a maximum of one start-up and shut-down per week and optimization of burner temperature for clean burning of wood residues." The upgrades required by the permit amendments also include the ability to provide supplementary fuel as needed to cover shift changes, breakdowns, meal breaks and periods of extreme weather when regular fuel feed rate is inadequate to sustain optimum burning conditions.

(b) The permittees are required by permit amendments to submit progress reports twice a year outlining the quantities and types of wood residue generated, progress in the beehive burner phase-out plan requirements and interim pollution prevention and wood residue utilization initiatives.

(c) The permit amendments require the submission of an environmental protection plan.

The Respondent submits that the three requirements of the permit amendments as outlined above do not conflict with the conditions set forth in the *Amended Regulation.* Further, these further conditions should be confirmed by the Panel so as to remain operating requirements as per section 2(2.1) of the *Amended Regulation* which continues the requirement for a waste management permit.

Discussion and Analysis

There is no dispute among the parties that the effect of the *Amended Regulation* extended, *subject to specified conditions*, the use authorization period for the beehive burners of the Corporate Parties to December 31, 2003. As well, there is no dispute that, under the *Amended Regulation*, the beehive burner authorizations can be extended under certain circumstances, at the discretion of the manager, until December 31, 2004.

The question for the Panel is whether the provisions of the *Amended Regulation* or the *Rebate Regulation* preclude the Panel from considering the permit amendments that are the subject of this appeal.

Having considered the meaning of section 2(2.1), based on the principles of statutory interpretation, the Panel finds that section 2(2.1) of the *Amended Regulation* continues the existing requirements for permits issued under the *Act*, and that such permits are required to authorize the continued operation of the beehive burners under the *Amended Regulation*. Therefore, the Panel agrees with the Individual Appellants and the Respondent that, under the *Amended Regulation*, each beehive burner still requires a permit. The Panel also agrees that the operation of the beehive burners is governed by the terms of the permits, unless the terms of the permits conflict with the *Amended Regulation*. Where the terms of the permits conflict with the *Amended Regulation*, the *Amended Regulation* applies. In the Panel's view, this means that the operation of the beehive burners remains subject to the manager's powers, and hence the Board's powers, under sections 10 and 13 of the *Act*.

The Panel notes that under the *Rebate Regulation*, the Minister is authorized to pay money out of the Sustainable Environment Fund to rebate fees or charges for the purpose of fostering expenditures in or contributing to value added uses for wood residues. The amount of a rebate would be determined in accordance with section 3 of that *Regulation*. The Panel does not view these provisions as limiting, in any way, the jurisdiction of the Panel to address the issues under appeal.

The Panel, therefore, finds that the *Amended Regulation* and the *Rebate Regulation* do not render the Individual Appellants' appeal moot generally. However, whether a specific amendment conflicts with the *Amended Regulation* will have to be addressed on an amendment-by-amendment basis, as required.

2. Whether the amendments to the permits are for the protection of the environment.

Under section 13(1) of the *Act*, a manager may amend the requirements of a permit, subject to section 13 and the regulations, *and for the protection of the environment* (emphasis added).

The first questions that arise are what the words, "and for the protection of the environment" mean, and hence what is the test for amending a permit under section 13.

Houston submits that the Assistant Manager has no jurisdiction to make amendments to a permit that are not "for the protection of the environment." Houston further submits that, although section 13 of the *Act* does not expressly use the word "necessary" in conjunction with the words, "for the protection of the environment," the amendment made by the Assistant Manager under section 13 must be necessary for the protection of the environment. Houston, Canfor and the Individual Appellants share this interpretation. In support of this proposition, the Panel was referred to a decision of the Environmental Appeal Board, *Bullmoose*

Operating Corp. v. *British Columbia (Ministry of Environment, Lands and Parks)*, (Appeal No. 97-WAS-18, June 30, 1998) (unreported). That case involved amendments to a permit for a coal mine. In its decision, the Board found that amending the monitoring frequency in the permit would not have any added benefit to protecting the environment.

The Respondent argues that the test, "necessary for the protection of the environment," imposes far too high a standard in the amending powers conferred by the *Act* and is not called for in the legislation. The Respondent maintains that he relies on the "precautionary principle," which is consistent with revising permits so that their terms and conditions are consistent with minimizing environmental impact and providing for environmental protection in the "large scheme of things."

As well, the Respondent argues that, in section 13(4) of the *Act*, it is recognized that a manager's amending powers include permit revisions that are not directly related to the prevention of pollution, and hence, the amending powers should be liberally construed. In support of this proposition, the Respondent relied on a decision of the Environmental Appeal Board, *Fleischer et al.* v. *Pacifica Papers* (Appeal No. 98-WAS-29(d), January 12, 2000) (unreported) (hereinafter *Fleischer*). The Respondent suggests that an example of a permit revision that is not would be related to pollution prevention would be section 13(4)(j) which authorizes amendments "changing or imposing any procedure or requirement that was imposed or could have been imposed under section 10 or 11." This would include the power under section 10(1)(f) to require a permittee to recycle wastes and recover reusable resources.

The Panel agrees with the Respondent that the test in amending a permit under section 13(1) of the *Act* is whether the amendment is for the protection of the environment, which, in the context of this statute, can include minimizing environmental impact. It is not, however, in the Panel's view, restricted to what is *necessary* for environmental protection. The Panel finds that to adopt a narrow interpretation is inconsistent with several provisions of the *Act*, including the powers of a manager to amend a permit under section 13(4). As the Board noted in *Fleischer*, the manager can amend to alter the time specified for the construction of works. The Panel also agrees with the Board in *Fleischer* that, "it would be unreasonable to interpret this phrase in such a way that officials would be unable to deal with real world situations."

The Corporate Appellants argue that the amendments to their permits cannot be for the protection of the environment because there is no evidence that their burners are not materially affecting air quality in the Bulkley Valley. If there is no problem, then there is no justification for the Assistant Manager's amendments. Conversely, the Individual Appellants' argue that the permit amendments under appeal do not go far enough to protect the environment. They seek further amendments to reduce what they argue are the adverse effects to the environment caused by the Corporate Parties' beehive burners.

In determining whether the permit amendments at issue in these appeals are "for the protection of the environment," the Panel will begin by considering the following issues:

a. Whether the particulate matter from the beehive burners contributes to the air quality of the Bulkley Valley.

b. Whether the particulate matter from the beehive burners will cause an unacceptable adverse effect on the environment and human health.

a. Whether the particulate matter from the beehive burners contributes to the air quality of the Bulkley Valley.

Individual Appellants' Submissions

The Individual Appellants submit that the evidence before the Panel establishes that the burners are the dominant contributors to poor air quality in the Bulkley Valley.

Dan Hrebenyk was qualified as an expert by the Panel to give evidence, on behalf of the Individual Appellants, on atmospheric science, and air quality impact assessment and modelling. Mr. Hrebenyk testified that he conducted an assessment of the contribution of the beehive burners to ambient air quality in the Bulkley Valley, and that prior to preparing his report, he conducted a literature review, compared the three beehive burners in this case with the burners modelled by Boubel and Corder, investigated fuel mixes, reviewed temperature charts, consulted with the Ministry, and reviewed video footage of the burners.

In his report, *Critique of Air Quality Assessment of Beehive Burner Emissions*, dated February 16, 2000, Mr. Hrebenyk concludes that each of the three burners "individually represents a significant contributor to PM_{10} concentrations at the point of maximum impact, even when operating within their permit limits." Mr. Hrebenyk further concludes that, with respect to the emission inventory, "the probable impacts of the three burners are sufficiently high to represent a substantial obstacle, even perhaps an insurmountable obstacle, to the achievement of the existing provincial ambient air quality objective of 50 micrograms/m^3 in the Bulkley Valley."

Mr. Hrebenyk also described how elevated hourly PM_{10} readings at ground level are produced at two distinct time periods of the day, early morning and later evening. Mr. Hrebenyk concluded that this results from the interaction between the air mass at the ground level, where the TEOMs[4] are located, and the higher air mass where pollutants from the burners travel. In the morning, the mixing height rises, causing the pollutants from the burners to mix down to the ground. In the evening, the opposite occurs, with the layer of upper air that contains burner particulate collapsing downwards. Mr. Hrebenyk submits that, because this phenomena is observed at all seasons of the year, this indicates that elevated hourly PM_{10} levels are not attributable to a seasonal particulate source such as road dust.

[4] A TEOM is a Tapered Element Oscillating Microbalance, an ambient air quality monitor for PM10.

In support of their argument, the Individual Appellants also rely on the video footage presented at the hearing by Michael Simpson, a professional videographer. The Individual Appellants submit that this video footage clearly depicts plumes of smoke from the beehive burners, and depicts typical air quality conditions in the Bulkley Valley. They further submit that Mr. Simpson's evidence was confirmed by the testimony of William Stevens, a computer consultant who resides in Smithers, who described his observations of plumes of smoke from the beehive burners.

The Individual Appellants also relied extensively on the evidence of Douglas Johnson, a meteorologist and head of the Ministry's Air Quality Unit, who testified for the Respondent. In particular, the Individual Appellants referred the Panel to Mr. Johnson's report, *Bulkley Valley Inhalable Particulate Summary*, February 2000 ("*Inhalable Particulate Summary*"), that concluded that:

> The three burners are the largest single sources of PM_{10} in the Valley by a large order of magnitude. West Fraser's current PM emissions from the burner alone are 968 tonnes/year, with the next largest source, Newpro, emitting only 323 tonnes/year. West Fraser's burner emissions therefore make up 53% of total permitted PM emissions in Smithers.
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> In Houston, where there are no other significant sources of PM, Canfor and Houston together produce 2018 tonnes PM/yr, or 64% of the total permitted PM emissions.

The Individual Appellants submit that the evidence of the Ministry is that the three beehive burners of the Corporate Parties account for between 1/2 and 2/3 of the permitted PM in Smithers and Houston. They further submit that other evidence of Mr. Johnson points to the significant contribution of the beehive burners to PM_{10} in the Bulkley Valley airshed, namely:

- that poor air quality episodes occur with notable frequency in winter, when road dust is totally suppressed;
- that recorded PM_{10} levels in Smithers and Houston are observed to increase when wind direction flows from the direction of the burners toward the particulate monitoring station.

In summary, the Individual Appellants submit that the beehive burners contribute significantly to ambient PM_{10} levels in the Bulkley Valley, and that they are the dominant source of the most harmful form of PM10 in the Bulkley Valley, combustion derived particulate.

B.C. Lung's Submissions

B.C. Lung submits that it has been recognized since the 1970s that beehive burners create unacceptable levels of air pollution. This recognition has resulted in proposed modifications to beehive burners, the elimination of beehive burners in the United States, and the enactment of the *Amended Regulation*. The *Amended Regulation* originally required the elimination of the three beehive burners at issue

in this appeal by December 31, 1997. B.C. Lung argues that all parties recognize that more efficient and less polluting methods are available to deal with the wood waste in the Bulkley Valley.

B.C. Lung submits that the Bulkley Valley suffers from poor air quality. As stated by Mr. Hrebenyk, because of the terrain, the Bulkley Valley functions as a single airshed, thus impeding dispersion of pollutants, contributing to temperature inversions and stable air conditions, which trap pollutants. As a result, the effects from individual beehive burners located in either Smithers or Houston cannot be isolated from the other communities in the Bulkley Valley.

B.C. Lung argues that the Panel should accept the evidence of Mr. Hrebenyk and Mr. Johnson with respect to the contribution of the beehive burners to the transportable PM_{10} emissions in the Bulkley Valley, and the exceedences of the provincial guidelines for PM_{10}.

With respect to $PM_{2.5}$, B.C. Lung submits that the Ministry has been monitoring $PM_{2.5}$ since 1996, indicating that $PM_{2.5}$ concentrations exceeded the Federal-Provincial Working Group on Air Quality Objectives and Guidelines of 15 $\mu g/m^3$ 16.3% to 17.3% of the days sampled (61 days each year) in 1996-97 and 1997-98. As well, in both Houston and Smithers, while the running annual mean for PM_{10} since 1994 has been below 20 $\mu g/m^3$, daily PM_{10} measurements have ranged as high as 150 $\mu g/m^3$, with a significant number of episodes in excess of 50 $\mu g/m^3$.

Respondent's Submissions

Douglas Johnson was qualified as an expert to give evidence on air quality assessment and air management. The Respondent submits that that the Panel should accept the evidence of Mr. Johnson regarding the affect of meteorology and the terrain on the air quality, particularly from September through April. The Respondent summarizes Mr. Johnson's evidence as follows:

> Mr. Johnson described how stable air masses commonly characterized meteorological conditions in the valley. In winter this is associated with continental polar air masses typified by cold, dry air with clear skies and low wind speeds. Clear skies combined with long winter nights, calm winds and bright (snow) surfaces reflect daytime sunlight and promote an intense climatological process known as radiative cooling. This phenomenon produces temperature inversions where the normal atmospheric profile is inverted. The net result of atmospheric temperature inversions from an air quality perspective is a very stable atmosphere characterized by little mixing. Such atmospheres have very limited capacity to disperse (dilute and transport) emissions such as smoke coming from a beehive burner or residential chimney.
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> In the Bulkley Valley air contaminants are confined vertically by the mixing layer and horizontally by the valley wall. Thus any emissions into a stable atmosphere tend to remain trapped near the valley bottom where the majority of the residents live. Over time this can lead to degraded air

> quality as compounds continue to be emitted into the atmosphere but are not transported away. In addition, Mr. Johnson described the wind patterns in the valley which were predominately down-valley from Houston towards Smithers during the winter. Because of the mountainous terrain surrounding the Bulkley Valley and limited mixing heights, the valley often has a very low ventilation index, which creates stagnant air masses that flow along the valley bottom.

The Respondent refers to the air quality concerns documented in Mr. Johnson's report, *Inhalable Particulate Summary*. In the data summary, regular exceedences of air quality objectives since 1994 are shown despite the fact that monitoring stations are located to record air quality at population centres, rather than at maximum impingement points for emissions from the beehive burners. The Respondent submits that air quality may be worse at other locations.

The Assistant Manager also provided photographic evidence and burner temperature charts, which he says confirms that significant emissions can result from the beehive burners even under favourable operating conditions.

The Respondent further submits that it has been demonstrated that beehive burners are significant controllable industrial point sources of particulate emissions, and the Assistant Manager testified as to the need to reduce emissions to the maximum extent reasonably practical. He submits that the three beehive burners at issue in this appeal are the largest permitted emission sources in the Bulkley Valley and can, therefore, have significant impact on air quality.

The Respondent also submits that the Ministry is making ongoing efforts to improve air quality in the valley which include not only the reduction of fine particulate emissions from beehive burners, but also those of asphalt plants, panel board plants, road dust sources, regulation of wood stoves, burning of land clearing debris, backyard burning and motor vehicle emissions.

Canfor's Submissions

Canfor submits that there is no question that the beehive burners contribute to particulate emission in the Bulkley Valley, however, the issue is the degree to which they contribute. It concludes that the objective scientific evidence suggests that the impact of the burners on the air quality of the valley is modest, if any.

Dr. Anthony Ciccone was qualified as an expert to give evidence in the area of air quality assessment. Dr. Ciccone testified with respect to air quality modelling which is used, among other purposes, to determine whether a facility meets the air quality standards of the jurisdiction that it is located in. In particular, Dr. Ciccone described the CALPUFF model, which was used to model the contribution of the beehive burners to the Bulkley Valley airshed in the *Revised Air Quality Assessment of Beehive Burner Emissions, Bulkley Valley*, February 23, 2000 ("*Revised Jacques Whitford Report*"). The Panel notes that the first, *Air Quality Assessment of Beehive Burner Emissions, Bulkley Valley*, January 17, 2000, which was entered as an exhibit, was withdrawn because of technical problems with the report.

Canfor submits that the *Revised Jacques Whitford Study* concludes that the burners do not contribute to the air quality issues in Smithers, Houston or the valley to the extent being advanced by the Individual Appellants and the Ministry. In this regard, Canfor submits that the Panel should accept the evidence of Dr. Ciccone, and the conclusions of the *Revised Jacques Whitford Study*, rather than the evidence of Mr. Hrebenyk.

Canfor submits that Dr. Ciccone was correct in choosing U.S. EPA-42 and the criteria listed in that document, as a factor in generating the emission data, and that Mr. Hrebenyk erred by relying on an emission factor in a draft U.S. EPA document for "wet" wood rather than "dry" wood that is burned by the Canfor beehive burner. Canfor further submits that the emission factor of 1 used by Dr. Ciccone is supported by the U.S. EPA-42, the data in Corder, the Draft U.S. EPA document and other data, if the dry wood factor is used. Canfor also asks the Panel to note that the emission factor provided in the Draft U.S. EPA document for dry wood is 1, the same factor used by Dr. Ciccone in his calculation of the emission factor.

Canfor submits that other factors, rather than the beehive burners, must be major contributors to the particulate emission in the Bulkley Valley. In support of its argument, it relies on the following evidence.

- Both Mr. Johnson and the Assistant Manager agreed that January is a month that best enables one to assess the impact of the burners on air quality in the Bulkley Valley. However, a review of the Ministry's particulate matter data for Smithers and Houston indicates very modest PM_{10} levels in January for the past 6 years, and an average PM_{10} level for the last 6 years of 17 µg/24 hours. They submit that this yearly average is consistent with the average for most communities in B.C., and well below the current standard for PM_{10} set by the U.S. EPA of 150 $\mu g/m^3$.

- The Assistant Manager agreed that for the months of January 1993 to 2000, the average PM_{10} level in Smithers, taken on Sundays, was 12 $\mu g/m^3$, and on weekdays it was 17 $\mu g/m^3$. The average PM_{10} level in Houston on Sundays was 11 $\mu g/m^3$ and 12 $\mu g/m^3$ on weekdays.

- A review of the Ministry's data since 1995 shows that the 30 $\mu g/m^3$ level has only been exceeded on 2 days. The 50 $\mu g/m^3$ level has never been exceeded in January in Smithers or Houston based on this data. However, in other months, though the meteorological data and conditions improve, the air quality worsens, as other factors begin to contribute to particulate levels.

- There was no notable change in particulate matter levels during the periods between December 2, 1997 to January 31, 1998, and December 1, 1998 to January 31, 1999, when the Canfor burner was shut down.

- Both Mr. Johnson and the Assistant Manager agreed that there are sources of PM_{10} in the valley other than the burners, including road dust, wood stoves, open burning and other industrial sources.

- A 1968 study done by the Ministry in Quesnel concludes that road dust is a major contributor to air quality in the area in February and March of every year. The Prince George Region prepared a similar report with similar conclusions. Similarly, in 1996, the Ministry generated an Air Shed Study in Prince George that concluded that road dust was a major particulate contributor, and estimated that 60% of the particulates in the area were attributed to road dust. Mr. Johnson's report, *Inhalable Particulate Summary*, concludes that road dust and other factors are significant particulate contributors.

Canfor submits that the evidence supports the position that the burners are not materially affecting air quality in the Bulkley Valley, and that the upgrades required by the amendments are merely cosmetic. Therefore the permit amendments under appeal are unnecessary and unreasonable.

Houston's Submissions

Houston submits that its beehive burner is a minor contributor to air quality in the Bulkley Valley airshed, and that the operation of its beehive burner does not produce a significant impact on the communities in the valley.

In support of its submission, Houston also referred to the *Revised Jacques Whitford Report* in which it was estimated that the beehive burners of Houston, Canfor and West Fraser contributed only 7% of the total loading of PM_{10} in the Bulkley Valley in 1995. Houston further submits that, assuming that the beehive burners of Houston, Canfor and West Fraser burn an equal amount of wood residue, Houston's contribution to the total loading of PM_{10} in the Bulkley Valley would be only 2.3%. The Panel was asked to note that this conclusion was not disturbed on the cross-examination of Dr. Ciccone, and is supported by the photographs of Houston's beehive burner taken by Jason Bourguignon on February 28, 2000, indicating that during normal operation, Houston's beehive burner does not emit visible smoke.

Houston further submits that the air quality standards in B.C. are the highest in the world. In support of this, Houston referred to the evidence of Dr. Peter A. Valberg, who was qualified as an expert in the area of inhalation toxicology, lung physiology and the application of epidemiology to public health, and who testified on behalf of the Corporate Parties. Dr. Valberg testified that that B.C.'s Interim Air Quality Objective of "50 micrograms per cubic metre averaged over a 24-hour period for PM_{10} is as restrictive as any in the world." Houston compared this with the current standard for PM_{10} set by the U.S. EPA at 150 $\mu g/m^3$ (24-hour average). In general, Houston submits that the air quality in the Bulkley Valley is good. According to the data collected by the monitoring stations in Smithers and Houston, 97.5% of the daily measured concentrations of PM_{10} are below B.C.'s Interim Air Quality Objective of 50 $\mu g/m^3$.

Houston also submits that there are numerous sources of PM_{10} in the Bulkley Valley, including wind-blown dust, forest fires, wood stoves, automobile and truck traffic, paving plants, panel board plant, slash burning and beehive burners.

In support of its argument, the Panel was asked to note the following evidence:

- For Smithers, on the basis of air quality measurements for December, 1999, the hourly summaries show that the air quality was within the "Good" range of 0-25 µg/m^3 99% of the time, and within the "Fair" range of 26-40 µg/m^3 1% of the time. No readings fell below the "Fair" range.

- The Assistant Manager testified that for the months of January, 1993 to 2000, the average PM_{10} level in Smithers on Sundays was 12 micrograms per cubic metre, and on weekdays it was 17 micrograms per cubic metre. For the months of January, 1993 to 2000, the average PM_{10} level in Houston on Sundays was 11 micrograms per cubic metre, and on weekdays it was 12 micrograms per cubic metre.

- According to the Assistant Manager's evidence, there were only 2 days where the PM_{10} levels in Smithers exceeded 30 micrograms per cubic metre, and overwhelmingly, the levels were under 25 micrograms per cubic metre. When the mills of Houston, Canfor and West Fraser shut down on or around December 17, 1999, for the Christmas holidays, the PM_{10} levels in Smithers remained at constant levels.

- The air quality data for Houston for the months December 1, 1997 to January 31, 1998, and December 1, 1998 to January 31, 1999, as maintained by the Ministry, show that the shutdown of the Houston and Canfor mills over the Christmas holidays had no significant impact on the PM_{10} levels in Houston.

- The Assistant Manager stated that he could not really say that there was any effect on the ambient PM_{10} level as it was recorded in Houston that would correlate with the burner shutdown. He further admitted that, with respect to Smithers and Houston PM_{10} data, he could not see any real correlation with the periods of shutdown of the burners.

Based on this evidence, Houston asks the Panel to find that Houston's beehive burner is not a significant contributor to the PM_{10} levels in the valley.

West Fraser's Submissions

West Fraser submits that the Individual Appellants have not met the onus on them to demonstrate that the levels of ambient particulate matter in the valley are substantially attributable to emissions from the beehive burners. West Fraser adopts the submissions of Canfor in support of its position.

West Fraser submits that the ambient particulate matter in the valley can be attributed to a number of sources, both permitted and unpermitted. Further, the evidence adduced in this appeal supports the position that the effect the beehive burners have on the air quality in the valley is minimal; therefore, shutting them down will have no measurable effect on either air quality or the health of the population in the valley.

Individual Appellants' and Respondent's Reply

In response to Dr. Ciccone's evidence provided by the Corporate Parties, the Individual Appellants' submit that the conclusions expressed in the *Revised Jacques Whitford Report* are unreliable and misleading, and that the emission inventory, emission factor and modelling methodology are inaccurate and premised on several unfounded assumptions. In particular, the Individual Appellants argue as follows:

- Because Dr. Ciccone did not view the burners to verify the companies descriptions of their maintenance and condition, he failed to take into account the fact, as indicated by the evidence of Lowell Johnson, General Manager, Manufacturing, Canfor, that the Canfor beehive burner skin has holes and needs replacement. This meant Dr. Ciccone failed to take into account that the U.S. EPA's AP-42 emission factors depend in large part on the maintenance of a burner, and the percentage of excess air caused by holes in the burner skin. Dr. Ciccone also failed to take into account that the AP-42 emission factor for a burner with holes is 20 times higher than the 0.5 emission factor;

- Mr. Hrebenyk concludes in his report that the modelled emission factors are 5 to 10 times lower than the AP-42 emission factor for wood waste boilers. He indicates that the U.S. EPA has developed an emission rate limit for modern incinerators with sophisticated emission technology of 70 $\mu g/m^3$. The modelled emission rates for Canfor and Houston beehive burners are 108 $\mu g/m^3$, and the modelled emission rate for the West Fraser beehive burner is 54 $\mu g/m^3$. In Mr. Hrebenyk's opinion, it is highly unlikely that the uncontrolled emissions from the beehive burners could be lower than the emissions from wood waste boilers. Similarly, Mr. Hrebenyk concludes that it is not credible to suggest that the Canfor and Houston beehive burners perform better than wood waste boilers, and that the West Fraser beehive burner performs better than a new, modern incinerator with sophisticated emissions technology;

- Mr. Hrebenyk's adjusted inventory shows that the beehive burners generate 61% of the total transportable particulate matter, which represents the single largest source of total transportable particulate matter;

- Dr. Ciccone did not use the CALPUFF model to its full capabilities, and he failed to comply with U.S. EPA guidelines regarding grid spacing and multiple year modelling, which undermine the reliability of his work;

- Dr. Ciccone selected emission factors that produced a distorted picture of particulate matter contributions from the burners; and

- Dr. Ciccone's conclusions are inconsistent with the evidence from witnesses who testified that the smoke from the burners visibly dominates air quality in the valley, and from the photos and video footage of the dark plumes of smoke.

The Individual Appellants ask that the Panel accept Mr. Hrebenyk's conclusions with respect to the contribution and impact of the three beehive burners.

Both the Individual Appellants and the Respondent point out that the PM_{10} monitors can understate the air quality. This is because the PM_{10} monitors, the TEOMs, are stationary air quality monitors that measure PM_{10} at a single point. It is therefore misleading to suggest that the TEOM readings represent air quality conditions throughout the Bulkley Valley.

The Respondent acknowledges that the conclusions of Dr. Ciccone and Mr. Hrebenyk, both qualified as experts in the modelling of air emissions, were at variance with one another. However, the Respondent advises that this simply highlights the fact that airshed modelling is a predictive tool that relies on the accuracy of the many assumptions that are necessary to run a model as complex as CALPUFF. The Respondent submits that the model results in the *Revised Jacques Whitford Study* are not supported by the Ministry since it is not satisfied that the various input parameters have been properly derived through a consensus process. The Respondent asks the Panel to accept the eye witness evidence of beehive burner emissions and the evidence of other witnesses as sufficient evidence to establish the impact of the beehive burners on air quality and the fact they are a significant contributor to the particulate levels in the Bulkley Valley airshed.

Discussion and Analysis

The Panel heard significant conflicting evidence on the degree to which emissions from the beehive burners of the Corporate Parties are contributing to the air quality in the Bulkley Valley.

In summary, Canfor, Houston and West Fraser argue that the beehive burners are not materially affecting air quality in the Bulkley Valley. In support of this submission, they rely predominantly on the conclusions of the *Revised Jacques Whitford Report,* the testimony of Dr. Ciccone, and their review of Ministry data which, they submit, indicates that there are very modest PM_{10} levels. In particular, they rely on data that indicates little change in PM_{10} levels during periods the beehive burners were shut down, and low PM_{10} levels in January, which is the month that best enables assessment of the impact of the burners. They also refer to other sources of PM_{10} in the Bulkley Valley, other than the beehive burners, including road dust, wood stoves, open burning and other industrial sources.

The Individual Appellants, B.C. Lung and the Respondent argue the opposite point of view. They ask the Panel to accept the evidence of Douglas Johnson regarding the exceedences of PM_{10}. The Individual Appellants and B.C. Lung also ask the Panel to accept the evidence of Mr. Hrebenyk, who concluded that the probable impacts of the three burners are sufficiently high to represent a substantial or insurmountable obstacle to the achievement of the existing provincial ambient air quality objective of 50 $\mu g/m^3$ in the valley.

In response to Dr. Ciccone's evidence, the Individual Appellants, B.C. Lung and the Respondent submit that there are inaccuracies in the report with respect to the emission inventory, emission factor and modelling methodology, resulting in the report being unreliable and misleading. In particular, the Individual Appellants submit that, based on Mr. Hrebenyk's adjusted inventory, the beehive burners

contribute 61% of the total transportable particulate matter, in contrast to 9%, as presented by Dr. Ciccone.

Both the Respondent and the Individual Appellants also point out that the PM_{10} TEOMs can understate the air quality because the air quality at a given point in the valley can often be worse than what the TEOMs report. In support of this, they refer the Panel to the testimony of witnesses regarding visual observations and impact, including the video evidence of Mr. Simpson and the photographs of Mr. Hrebenyk.

The Panel also notes that there is a wide variance between the modelling findings of Dr. Ciccone versus Mr. Hrebenyk regarding maximum contributions to air quality due to the beehive burner emissions.

B.C. Lung also asks the Panel to note that it has been recognized since the 1970's that beehive burners create unacceptable levels of air pollution, and that this recognition has resulted in the elimination of beehive burners in the United States and the enactment of the *Amended Regulation*.

The Panel accepts the submissions of the Individual Appellants and the Respondent that air quality may be worse at locations other than the PM_{10} monitor locations, and that the eye witness evidence of beehive burner emissions, and the observations of various witnesses should be taken into account in determining the impact of the beehive burners on air quality in the Bulkley Valley.

The Panel accepts the evidence of Douglas Johnson on the meteorological conditions in the valley that produce temperature inversions, and that create conditions where there is a limited capacity to disperse emissions, and can result in stagnant air masses that flow along the valley bottom. The Panel also accepts that there have been regular exceedences of air quality objectives since 1994, if the Federal-Provincial Working Group recommended 24-hour reference level for PM_{10} of 25 $\mu g/m^3$ is accepted as the threshold level. (The Panel addresses this issue later in this decision.) The Panel further accepts that there has been a general recognition that beehive burners create unacceptable levels of air pollution, as is evidenced by the elimination of beehive burners in the United States and the enactment of the *Amended Regulation*.

Although the Panel agrees with the Corporate Parties that there are difficulties in the collection, analysis and modelling of data with respect to levels of particulate matter, as indicated by some of the Ministry data, the first *Jacques Whitford Study*, and the submissions of the Individual Appellants and the Respondent on this issue, the Panel finds that, based on the totality of the evidence, the three beehive burners at issue in these appeals are, on a balance of probabilities, significant contributors, individually and as a group, to the air quality in the Bulkley Valley. The Panel accepts the evidence of Douglas Johnson in this regard. Even assuming that his conclusions may be on the "high-side," the Panel accepts that the burners are the largest permitted sources of particulate emissions in the valley.

The Panel's conclusion with respect to this issue is consistent with the actions of regulatory authorities in B.C. and other jurisdictions, where steps have been taken to regulate and/or eliminate beehive burners. The Panel is of the view that the intent of the B.C. government to phase-out these beehive burners is also based on recognition of the impact of beehive burners on air quality.

The Panel also acknowledges that other sources also contribute negatively to the air quality in the Bulkley Valley. However, the existence of other sources of particulate matters, such as road dust, wood stoves, open burning and other industrial sources, does not alter the Panel's conclusion on this. Rather, the Panel recognizes that the regulatory initiatives undertaken by the Ministry with respect to the beehive burners is one aspect in its attempts to improve air quality in the Bulkley Valley.

b. Whether the particulate matter from the beehive burners will cause an adverse effect on the environment and human health.

Individual Appellants' Submissions

The Individual Appellants submit that the pollution produced by the three beehive burners is an identified health hazard and known harmful pollutant, making the air in the Bulkley Valley unhealthy. In particular, the Individual Appellants submit that the beehive burners produce large volumes of PM_{10}, and that PM_{10}, and in particular, PM_{10} produced by combustion, is an identified health hazard and known harmful pollutant.

In support of this argument, the Individual Appellants rely on the evidence of a number of residents who testified about the impacts of the air quality on their health. Laurie Mutschke testified that both she and her daughter, Emily Dodd, are diagnosed asthmatics. When they lived in the Bulkley Valley, Emily needed twice-daily asthma treatments. Since they moved to Terrace, B.C., this has not been the case. The Panel was also provided with several letters from local citizens, expressing personal and general concern about the impacts of the emissions from the beehive burners on their health.

The Individual Appellants also rely on the evidence of Dr. Bowering, the Medical Health Officer ("MHO") for the Northwest Region of B.C. and CEO of the Northwest Community Health Services Society, whose responsibility is protection of the health of the public. Dr. Bowering is a medical doctor with a Masters in Health Science, and was qualified as an expert by the Panel in the area of public health and epidemiology. The Individual Appellants submit that it is the responsibility of Dr. Bowering to take steps to address concerns that a pollutant is harmful to health, where evidence (including epidemiological evidence) establishes such concerns.

Dr. Bowering testified, based on his review of PM_{10} literature, that there is a strong case to be made that fine particulates from smoke do have a negative impact on respiratory health and particularly on the health of children and elderly people with asthma. He testified that the data collected by his office shows hospitalization rates for asthma among the children and the elderly in the Bulkley Valley to be the

highest amongst the Local Health Areas in the Northwest region, and that the consistency in this data cannot be explained away statistically. Dr. Bowering further testified that the PM_{10} monitoring data shows that the Bulkley Valley possibly has the worst record of air pollution for PM_{10} particulates in his region. He, therefore, concludes that "an increased hospitalization rate for young and elderly asthmatics in the same region with the highest levels of PM_{10} air pollution gives rise to a real concern that the pollution is adversely affecting those most vulnerable to its effects." Dr. Bowering urged the Board to "do what it can" to eliminate or minimize it.

Dr. Elizabeth Bastian, a local physician who has worked in the Bulkley Valley since 1982, was qualified by the Panel to give expert evidence in the recognition, diagnosis and treatment of illnesses, including cardiovascular and respiratory illness**.** She testified that a significant number of her patients have respiratory problems and cardiovascular disease, and that, in her view, the incidence of these disorders, particularly in the young, is higher than she has observed elsewhere in her practice. She also testified with respect to the resulting adverse effects on the lifestyles of her young patients, and that her patients have reported to her an association between poor air quality and a worsening of their respiratory conditions. Based on work as an emergency room physician, she observed that there is a frequent incidence of admissions for health problems related to PM_{10} exposure, and that the most significant numbers of admissions for PM_{10} related effects come from the young and the elderly. Dr. Bastian also gave evidence with respect to the Physicians Environmental Concerns Committee that was formed by herself and other physicians to address issues, including air quality issues in the Bulkley Valley. She testified that it is her view, and other members of the Physicians' Committee view, that the air quality in the Bulkley Valley "was a significant contributor to the ill health of this community."

Dr. David Bates, Professor Emeritus of Medicine and Physiology, University of British Columbia, was qualified by the Panel as an expert in the fields of respiratory medicine, including the effects of air pollution on human health, and epidemiology. The Individual Appellants ask the Panel to note that Dr. Bates is a recognized expert in these areas, whose assistance on air quality issues has been sought by Canadian and U.S. regulatory authorities. In his report, in the form of a letter to Mr. Howard, dated January 18, 2000, Dr. Bates states that studies demonstrate in at least 35 different regions on five continents, there is a consistent association between the level of particulate matter and a host of adverse health effects, including:

- daily respiratory and cardiovascular mortality;
- hospital admissions for acute respiratory disease and cardiovascular disease;
- emergency visits for acute asthma in children and adults;
- fluctuation in the pulmonary function, and cough incidence in children; and
- family practice consultations for asthma and respiratory disease.

Dr. Bates concludes, based on his review of PM_{10} monitoring data for the Bulkley Valley, that "taken in conjunction with the hourly data quoted above, these levels are likely to be causing some or all of the adverse health impacts," as listed above. Dr. Bates further concludes that the permits offer no protection against adverse health effects. They allow the "unabated production of fine particulate with no differentiation in size, and with no assessment of the impacts of these particles on adjacent populations." He states:

> We now know enough about the effects of particulate pollution to be confident that particles emitted from these burners create a health risk. Accordingly, from a public health perspective, reasonable steps should be taken to eliminate or reduce their emissions. In my opinion, therefore, these emission licences in the form in which they are stated, do not protect the local population from the adverse impact on health which the particulate emissions may be expected to have.

The Individual Appellants also submit that Dr. Bates' opinion regarding the adverse health effects associated with PM_{10} generally, and the particular adverse effects suffered by sensitive sub-groups, is supported by the conclusions of Health Canada and the U.S. EPA. In support of this, the Individual Appellants rely on the document, *National Ambient Air Quality Objectives for Particulate Matter, Part 1: Science Assessment Document* prepared by the Canadian Environmental Protection Act Federal/Provincial Working Group on Air Quality Objectives and Guidelines, 1999;[5] the *Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information*, Office of Air Quality Planning and Standards Staff Paper, U.S. EPA, July 1996; and on Volume 1 of the *Air Quality Criteria for Particulate Matter*, U.S. EPA, October, 1999.

The Individual Appellants dealt with, in summary form, the evidence of Dr. Sverre Vedal, who was tendered as a witness by B.C. Lung, and was qualified by the Panel as an expert in respiratory health, epidemiology and the health effects of air pollution. In particular, the Individual Appellants submit that Dr. Vedal's evidence is that exposure to PM_{10} and $PM_{2.5}$ is associated with the same health effects identified by Dr. Bates. Dr. Vedal also testified that neither the B.C. guideline nor the U.S. EPA standard is fully protective of human health.

In summary, the Individual Appellants submit that they have proved on a balance of probabilities, that PM_{10} is harmful to human health, and that actual PM_{10} levels observed in the Bulkley Valley are harmful to the health of the residents in the valley.

B.C. Lung's Submissions

B.C. Lung submits that PM_{10} and its subsidiary $PM_{2.5}$ are known to have adverse effects upon human health.

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[5] This Working Group will hereinafter be referred to as the "CEPA/FRPAC Working Group."

As noted above, B.C. Lung tendered Dr. Vedal as a witness. He testified that there is sufficient information in the scientific community to accept a causal relationship between PM_{10} levels and adverse health effects. In particular, the Panel was referred to the study of Dr. Vedal, *Acute Effects of Ambient Inhalable Particulates in Asthmatic and Nonasthmatic Children*, 1998 (the "*Port Alberni Study*"). According to Dr. Vedal, particles generated by combustion are now being found to be more harmful to human health that particles of crustal origin.

B.C. Lung submits that Dr. Vedal's *Port Alberni Study* clearly demonstrates that asthmatic children suffer adverse health impacts at PM_{10} levels below the B.C. standard of 50 $\mu g/m^3$. In the study, health effects were observed only in the particle size range 0.5 $\mu g/m^3$ to 5 $\mu g/m^3$, supporting the view that the symptoms experienced by the children studied were combustion related. As well, B.C. Lung submits that this evidence was affirmed by the testimony of Dr. Bates and is reflective of the conclusion reached by the World Health Organization and The National Research Council Special Committee on Particulate Pollution.

B.C. Lung submits that, based on the evidence of Dr. Bates and Dr. Vedal, there is no known "threshold" level for a positive association between particle concentrations and adverse health effects. There is a linear increase in human health consequences associated with increases in PM_{10} concentrations. Persons most sensitive to these impacts include the elderly, those with pre-existing lung and heart disease, including asthma, and children.

Dr. Vedal testified that the range of effects following exposure to PM_{10}, and in particular $PM_{2.5}$ include:

- decrease in levels of pulmonary lung function in children and adults with obstructive airway disease;
- increase in daily prevalence of respiratory symptoms in children and adults;
- increase in functional limitations as reflected by school absenteeism and restricted activity days;
- increase in physician and emergency room visits for asthma and other respiratory conditions;
- increase in hospitalizations for respiratory and cardiac conditions; and
- increase in cardiac and respiratory mortality on days after those with high particulate matter levels.

B.C. Lung submits that Dr. Vedal's evidence supports the conclusion that the current B.C. guideline of 50 $\mu g/m^3$ (on a 24-hour average) is not protective of human health. It submits that scientific recognition of the inability of the current B.C. guideline to protect health is further supported by the CEPA/FRPAC Working Group's recommendation of a reference level for PM_{10} of 25 $\mu g/m^3$. This Working Group consists of representatives of federal, provincial and territorial departments

of environment and health who review and recommends ambient air quality objectives.

B.C. Lung submits that both Dr. Bates and Dr. Vedal confirmed in evidence that the particle concentrations in the Bulkley Valley regularly exceed the levels at which one would expect adverse health effects.

Respondent's Submissions

The Respondent briefly refers to the medical evidence of Dr. Bates and Dr. Vedal, as supporting the Assistant Manager's belief that the air quality objective of 50 $\mu g/m^3$ is not adequate in the context of the Bulkley Valley airshed. In support of this argument, the Panel is referred to a previous decision of the Board, *Rustad et al.* v. *Deputy Director* (Appeal No. 94/39, September 27, 1995) (unreported). In that case, the Board remitted the amended permits back to the regional waste managers, directing the managers to consider site-specific information before amending the permits. This was a case where the Board found the managers had fettered their discretion by rigidly applying a province-wide policy.

The Respondent argues that the evidence of the Individual Appellants, and the many complaints received from the public regarding the air quality in the Bulkley Valley, also support the Assistant Manager's views.

The Panel also notes that Douglas Johnson, in his report, *Inhalable Particulate Summary*, addressed issues related to the potential health impacts of inhalable particulates. Mr. Johnson concludes, based on the conclusions of the Provincial Health Officer in 1993, that the B.C. Ministry of Health subsequently characterized airborne small particulate from combustion sources as being the single greatest air pollution problem in B.C. He also specifies several effects that can result from exposure to inhalable particulate matter.

West Fraser's Submissions

West Fraser submits that the Individual Appellants have not met the onus on them to demonstrate that emissions from the beehive burners are causing adverse health effects in the Bulkley Valley. In support, West Fraser submitted a report by Dr. Valberg and tendered him as a witness at the hearing. As previously indicated, Dr. Valberg was qualified to give expert opinion on inhalation toxicology, lung physiology and the application of epidemiology to public health.

Dr. Valberg testified that there are four lines of evidence required to demonstrate that a particular exposure to particulate would have a toxic effect on the lung. It was his opinion that in order to make a definitive statement that a certain level of particulate exposure is harmful to health, one needs to look at all "the lines of evidence," which are: statistical evidence (epidemiological evidence presented by the Individual Appellants); human evidence, including voluntary exposure to controlled atmosphere, occupational exposure, accidental exposure to high concentrations (case reports) and data on smokers; exposure of animals to high levels of particulate; and mechanistic toxicology.

Dr. Valberg also testified that:

- The weakness of statistical analysis is that there is no information on individual exposure to particulate. In addition, statistical studies that show associations may be explained by a number of confounding factors, related to things such as weather and human activity;

- Human evidence, exposure of animals to high levels of particulate and mechanistic toxicology do not have the same weaknesses as statistical analysis;

- We do not need to have proof from all of the lines of evidence in order to take action on a public health issue, however, we do need to see if there is supporting or contradictory evidence;

- With respect to particulate and health effects, there is contradictory evidence: "The difficulty in human evidence whether it is from controlled atmospheres, occupational exposure, cigarette smokers or exposure to animals, you have to go much higher concentrations than the ambient concentrations used in most of those associations to get effect. So those are contradictory to the idea that there may be strong causal link;"

- The final step in the four lines of evidence was to confirm the findings by examining the chemical components of a substance to ascertain if the observed health effect is mechanically plausible;

- An association, which is demonstrated in a statistical study, does not necessarily mean there is a causal relationship;

- In his opinion, the U.S. EPA standard for PM_{10} of 150 $\mu g/m^3$ is protective of human health. The 1997 Clean Air Science Advisory Committee did not recommend a change to this standard; and

- Dr. Valberg has serious reservations about the incremental impact approach as put forward by Dr. Vedal in his *Port Alberni Study*. In particular, he says that the study is outdated and was never published in a health journal or peer-reviewed; the study made assumptions that statistical associations from epidemiological studies are causal; Dr. Vedal assumed a threshold of 30 $\mu g/m^3$, which he applied to a variety of health outcomes and which, in Dr. Valberg's opinion, did not make sense toxicologically; Dr. Vedal assumed that the associations were completely due to particulate emissions, and failed to take other substances into account; and the U.S. EPA chose not to rely on this study in its 1997 criteria document.

With respect to the question of whether combustion particulates are more closely related to adverse health effects than crustal particulates, Dr. Valberg was of the opinion that this question is only answerable through the examination of a number of variables. In his view, what is needed is knowledge of the chemical composition of the particulate in question. Although he did confirm that certain combustion

particles are more toxic than certain crustal ones, he also testified that he did not see any evidence from the chemical composition of wood smoke that would suggest that it has any particular toxicity.

The Corporate Appellants also adopted Dr. Valberg's evidence.

Response to Dr. Bates' Evidence

In response to Dr. Bates' evidence, West Fraser submits:

- Dr. Bates' evidence should be given little weight with respect to the effect of the ambient particulate levels in the Bulkley Valley on the health of the population in the valley;

- Dr. Bates' testimony was flawed by his lack of objectivity, was vague and provided little in the way of specific results;

- Despite Dr. Bates' approval of the process in the U.S., he inexplicably does not prefer its outputs, and does not believe the standards the U.S. EPA process sets as a result are protective of human health;

- Dr. Bates described a number of epidemiological studies, which he claimed demonstrate that there are associations between ambient levels of PM_{10} and adverse health effects. However, for most of these studies, Dr. Bates provided no information on the ambient levels at which these health effects were shown;

- Dr. Bates based his opinion with respect to specific levels of PM_{10} exposure in the Bulkley Valley primarily on Dr. Vedal's *Port Alberni Study;*

- Dr. Bates' comparison of graphs of the average rates of PM_{10} for Houston and Smithers and Port Alberni can result in no definitive statement that levels in the Bulkley Valley were higher than those in Port Alberni; and

- In Dr. Bates' report, he lists a number of outcomes which he says have been demonstrated to be associated with exposure to PM_{10}, but does not provide any information as to what levels of PM10 are believed to cause these outcomes.

West Fraser also submits that it is clear from Dr. Bates' testimony that the effect of various particle sizes and types is dependent on a variety of factors, rather than a simplistic differentiation between combustion and crustal. Further, it submits that the Individual Appellants have overstated Dr. Bates' evidence with respect to whether there are adverse health effects from short-term exposure to high levels of particulates. West Fraser submits that there is insufficient evidence to confirm this assertion. This is confirmed by the fact that there are no national standards for hourly measurements of particulate matter, unlike other substances such as ozone.

Response to Dr. Vedal's Evidence

With respect to Dr. Vedal's evidence, West Fraser concludes that it does not provide the proof necessary to make the connection between any emissions from the beehive burners and health effects in the Bulkley Valley. West Fraser further submits that, while Dr. Vedal's work provides some theories as to the different health effects of particulates, depending on their size, composition and concentration, it does not go so far as to demonstrate that there are any effects on Bulkley Valley residents.

Further, West Fraser submits that Dr. Vedal's hypothesis that there are a number of health effects associated with particulate pollution in B.C. is, by his own admission, based on assumptions and is "a novel approach."

West Fraser further submits that Dr. Vedal's study, which claims that rates of cough in children with diagnosed asthma rise as the levels of ambient PM_{10} increase, is fatally flawed, and cannot be used to support any assertion that there are proven health effects on asthmatics from exposure to particulate. Further, West Fraser submits that the *Port Alberni Study* does not provide the necessary link between observed health effects and emissions from the pulp mill, and thus cannot be used as a model on which to base an assertion that there are health effects in the Bulkley Valley from emissions from the beehive burners. With respect to Dr. Vedal's opinion that he would expect to see adverse health effects in Smithers and Houston, West Fraser submits that his conclusion is not supported by any of his studies or any of the evidence adduced at the hearing.

Response to Dr. Bowering's Evidence

In response to the evidence of Dr. Bowering, West Fraser submits that the foundation for Dr. Bowering's testimony was a report, *Age Specific Hospitalization Rates for Asthma*, Cumulated Data 1994-1999, Ministry of Health, which he claimed demonstrates that there are higher levels of hospitalisation for asthma related problems for residents of the Bulkley Valley under the age of 15 and over the age of 65, when compared to other areas in his health region. The Individual Appellants and B.C. Lung rely on this as proof that asthmatics in the Bulkley Valley are more adversely affected than others by levels of ambient PM_{10}. West Fraser asks the Panel to view his evidence in light of the following evidence:

- He confirmed that his comparisons were only in relation to other northern communities and not to the rest of the province;
- He admitted that there are no epidemiological or clinical studies on the rates of asthma or the characteristics of pollutants in the lungs of Bulkley Valley residents;
- He admitted that it is impossible to describe the rates of asthma related hospitalisations as statistically significant given the small population of the Bulkley Valley;

- He confirmed that there had not been any studies, which showed any correlation between increases of any kind of respiratory disease occurrences during incidences of known heavy smoke lying in the Bulkley Valley; and

- He testified that his statistical analysis demonstrated no examples of elevated rates of other respiratory related illnesses, other than hospitalisations due to asthma.

Response to Dr. Bastian's Evidence

In response to Dr. Bastian's evidence, West Fraser submits:

- Dr. Bastian provided no statistical evidence to support her views regarding illnesses in the Bulkley Valley, or with respect to the percentage of children in Smithers with asthma;

- Dr. Bastian's evidence provides the Panel with no specific facts on which it can make a determination that there are increased levels of respiratory illnesses in the Bulkley Valley, whether related to beehive burner emissions or any other factors;

- Dr. Bastian has no specific data, which relates episodes of poor air quality to visits to doctors' offices by persons complaining of respiratory illness;

- Dr. Bastian's evidence that there are increased instances of patients with a range of respiratory problems contradicts that of Dr. Bowering, who testified that asthma was the only illness where elevated levels of hospitalizations could be identified in the Bulkley Valley;

- Dr. Bastian listed a number of factors, which the physicians in the Bulkley Valley believed were affecting their patients' health, including wood smoke from wood stoves, beehive burners, backyard burning and agricultural burning. She admitted that the beehive burner issue was only one of the issues they examined; and

- Dr. Bastian confirmed that there are seasonal fluctuations in the incidences of patients with problems with respiratory ailments.

Response to Douglas Johnson's and the Assistant Manager's Evidence

In response to the evidence of Mr. Johnson and the Assistant Manager , West Fraser submits:

- Mr. Johnson's report, *Inhalable Particulate Summary*, contains statements regarding the potential health effects of particulate matter;

- Mr. Johnson presented a number of graphs which depict exceedences of the PM_{10} level in Houston and Smithers, based on a recommended reference level which he takes from the Federal-Provincial Working Group on Air Quality

Objectives and Guidelines (1997) and the work of Dr. Vedal. He also provided alternative graphs which are based on the B.C. Interim Air Quality Objective of 50 µg/m^3. In particular, Mr. Johnson's Report states: "In 1995, British Columbia proclaimed an Interim Air Quality Objective for fine particulate: 50 µg/m^3 (24 hour average concentration) …in the Skeena Region, BC Environment has identified an annual air quality objective of 20 µg/m^3 to complement a 50 µg/m^3 daily objective." West Fraser submits that Mr. Johnson's reference to the Skeena Region's choice of an air quality objective is, in fact, his own work; and

- The Assistant Manager testified that, in his opinion, the B.C. Interim Air Quality Objective for 50 µg/m^3 is not an acceptable standard and is not protective of public health. West Fraser's submits that this is the Assistant Manager's personal view, which is at odds with the standards, guidelines and policy of the Ministry.

Response to Laurie Mutschke's Evidence

With respect to the evidence of Laurie Mutschke, West Fraser submits:

- No weight should be given to her evidence with respect to the role that beehive burner emissions play in the health of persons in the Bulkley Valley, because no medical evidence was led with respect to Laurie Mutschke's or her daughter's [Emily Dodd's] condition; no expert evidence with respect to potential triggers which may have led to her daughter's asthma attacks, or medical discussion of her daughter's pre-disposition to asthma related to hereditary factors;

With respect to the letters from citizens in the Bulkley Valley stating that they have experienced compromised health related to poor air quality, West Fraser submits that these letters should be given no weight as there has been no opportunity to examine the proponents to establish the veracity of the comments, and there has been no medical evidence led to confirm these alleged health effects.

Summary of West Fraser's Submissions

In summary, West Fraser submits that at present, there is considerable uncertainty about the relationship between particulate matter and respiratory health, and in particular, there is a dearth of evidence with respect to the health effects of low levels of ambient PM_{10} and $PM_{2.5}$. The testimonies of Dr. Bates, Dr. Vedal and Dr. Valberg confirm that the study of the relationship between particulate and respiratory health is in a state of flux, and there is much uncertainty with respect to the following:

- The effect of exposure to ambient levels of particulate matter on human health;

- The threshold at which adverse health effects may be felt;

- The effect of the size, composition and source of the particulates;
- The effect of exposure to high doses of particulate matter over short periods of time; and
- What members of society are most likely to be affected by exposure to ambient levels of particulate matter.

Furthermore, West Fraser submits that the evidence adduced has not established any specific adverse health effects in the Bulkley Valley arising from the operation of the burners, either to healthy individuals or to individuals who may be predisposed to respiratory illness such as children, asthmatics or the elderly.

In fact, West Fraser submits that the levels of ambient PM_{10} in the Bulkley Valley remain consistently below the B.C. guideline of 50 $\mu g/m^3$ for PM_{10}, which is the most stringent regulatory criteria in the world. Thus, there is no evidence by which this Panel should apply a different standard related to the emissions from the beehive burners in the Bulkley Valley.

West Fraser does not ask the Panel to make a finding that there are *no* health effects associated with PM_{10} exposure. Rather, it submits that such health effects have not been demonstrated at the levels of ambient particulate matter experienced in the Bulkley Valley. In response, the Individual Appellants and B.C. Lung argue that a case for causation can be made on the basis of the large amount of epidemiological findings and that action should be taken even if biological plausibility of the epidemiological findings has not been proven. They also claim that history is replete with public health threats that would have been compounded and still not solved, had Dr. Valberg's views been adopted.

West Fraser submits that, to the contrary, Dr. Valberg's evidence should be preferred, and that the Panel should adopt Dr. Valberg's opinion that action should not be taken when there is evidence that the findings of epidemiology have been directly contradicted by the toxicological studies, and that the case of causation is, in fact, in considerable doubt.

Further, West Fraser submits that this Panel cannot make a finding, based on the evidence before it, that there are increased health effects on asthmatics, children and the elderly from emissions from beehive burners in the Bulkley Valley, on the basis of a "general notion" that some sub-groups are more sensitive to particulate pollution than others.

With respect to standards, West Fraser submits that the CCME elected not to adopt a standard for PM_{10}. Instead, the following statement in the November 29, 1999 document remained unchanged:

> Reductions in ambient PM_{10} levels will occur as ancillary benefits from reducing $PM_{2.5}$. In addition, some jurisdictions currently have ambient air quality objectives, guidelines or standards related to the coarser fraction

> of PM [particulate matter]. These should continue to be used to design air quality management programs for PM_{10}.

West Fraser submits that although Dr. Bates testified that the B.C. objective standard of 50 µg/m^3 for PM_{10} is not protective of human health, he also testified that the question of how effective a standard of 50 µg/m^3 is, cannot be answered. In contrast, West Fraser submits that Dr. Valberg testified that the U.S. EPA standard of 150 µg/m^3 for PM_{10} exposure is protective of human health.

Lastly, on this issue, West Fraser submits that it would not be appropriate for this Panel to base its decision on a standard higher than the Guidelines set by the province merely because Dr. Bates or Dr. Vedal do not believe it is protective of human health. Furthermore, West Fraser notes that Mr. Johnson's *Inhalable Particulate Summary* demonstrates that the standard of 30 µg/m^3 for $PM_{2.5}$, which has recently been endorsed by the CCME, has already been achieved for the Bulkley Valley.

Similarly, with respect to the Individual Appellants' request for "Directions to the Regional Waste Manager" with respect to an "air quality episode" (defined as a period of time during which ambient PM_{10}, as measured on a 24 hour average, is exceeding, or in the opinion of the manager, may exceed 25 µg/m^3), West Fraser submits that it would be inappropriate for the Panel to make a direction based on a standard twice as stringent as the provincial guideline.

West Fraser also asks the Panel to note that, in two previous decisions of the Board, the Board recognised the B.C. Air Quality Guideline of 50 µg/m^3 for PM_{10}, *Louisiana* and *Fleischer*. West Fraser asks the Panel to note that in *Louisiana Pacific Canada Ltd.* v. *Assistant Regional Waste Manager* (Appeal No. 96/30, December 23, 1997) (unreported) (hereinafter *Louisiana*), the Board overturned a finding by the Deputy Director of Waste Management on the basis that the connection between health effects and the emissions from the Appellant's plant had not been established.

In conclusion, West Fraser argues that the Individual Appellants have not met the onus on them to demonstrate that there are proven health impacts in the valley related to ambient particulate matter.

Canfor's Submissions

Canfor submits that both the Individual Appellants and the Ministry have relied on studies and reports, of Douglas Johnson and Dr. Vedal, about the health effects of particulate matter which are not peer reviewed, and which ignore regulatory and health standards applied elsewhere in the province, in the country and in the world. Canfor also submits that the Respondent and the Individual Appellants have presented the lowest possible level of PM_{10} at which health effects can be measured as the appropriate level against which to assess ambient particulate matter levels and health effects in the Bulkley Valley when such analysis is not done anywhere else in the world or adopted by any other regulatory body. Further, they have presented statistics about respiratory health in the Bulkley Valley in complete

ignorance of similar data for other areas in B.C., in the country and in the world. It submits that the net result is a false impression about the degree of health problems in the Bulkley Valley.

Canfor submits that through its cross-examination of witnesses for the Individual Appellants and the Respondent, and its evidence concerning health and PM_{10} standards and levels elsewhere, it has demonstrated clearly that the propositions and cases asserted by both the Individual Appellants and the Respondent are untenable.

Canfor argues that the Respondent's submission that the appropriate PM_{10} standard for this region should be lower than 50 $\mu g/m^3$, is premised on the Respondent's acceptance and reliance on the work of Dr. Vedal and his *Port Alberni Study*, and on the evidence of Dr. Bates, Dr. Bowering and Dr. Bastian. Canfor submits that no causative link can be established between particulate matter from beehive burners and human health, and more specifically, no causative link can be established between the Corporate Parties' burner emissions and the health of the residents of the Bulkley Valley.

In particular, in response to Mr. Johnson's evidence and Dr. Vedal's evidence with respect to "exposure increments" method of calculating air quality measurements, Canfor refers to the evidence of Dr. Valberg that, in 1997, the U.S. EPA expressly rejected Dr. Vedal's incremental approach in determining the appropriate way to assess risk from particulate matter. Mr. Johnson admitted in cross-examination that Dr. Vedal is the only person who uses 20 $\mu g/m^3$ as a reference level for health effects related to particulate matter. Mr. Johnson further admitted that, in respect of the *Canada-Wide Standards* which are now being contemplated by the CCME, there is no recommended standard for PM_{10}, and a standard of 30 $\mu g/m^3$ is being recommended for $PM_{2.5}$ on a 24-hour average basis to be phased in by the year 2010.

Canfor also asks the Panel to note that, based on Mr. Johnson's report, the 30 $\mu g/m^3$ standard fixed for $PM_{2.5}$ has never been exceeded in the Bulkley Valley.

Response to Dr. Vedal's Evidence

In response to Dr. Vedal's evidence, Canfor submits that Dr. Vedal's evidence does not establish that combustion particulate matter adversely affects human health, and particularly the health of the elderly, children and asthmatics, and ultimately, that emissions from the beehive burners are a significant cause of respiratory problems in residents of the Bulkley Valley. Canfor submits that Dr. Vedal had concerns about the quality and reliability of the data he collected during the study, and that his study did not ultimately prove his hypothesis that the pulp mill in Port Alberni was the cause of increased respiratory problems in children and asthmatics. Canfor submits that Dr. Vedal conceded that no epidemiologic study can prove causality in evaluating the association between an exposure and an outcome. Further, Dr. Vedal would never be able to confidently diagnose a patient with respiratory effects as a result of PM_{10} exposure.

Canfor also expressed concern about Dr. Vedal's use of the data and results of his *Port Alberni Study*, and Ministry documentation concerning PM_{10} levels in Smithers and Houston, to draw conclusions about the likelihood of the effect of PM_{10} in Smithers and Houston on the health of residents in those towns. It asked the Panel to note that, on cross-examination, Dr. Vedal conceded that the reliability of the data he collected for the study was called into question for a number of reasons, including that he was unable to draw any association between PM_{10} and three of the four symptoms of asthma.

Canfor submits that Dr. Vedal's *Port Alberni Study* can not be accepted by the Panel as being demonstrative that PM_{10} or $PM_{2.5}$ adversely affects health, and certainly not demonstrative of the effect of the burners in question on the health of the residents of the Bulkley Valley.

In summary, Canfor submits that Dr. Vedal's conclusion is not supported by the studies he has done or by any of the other evidence adduced in this hearing.

Response to Dr. Bates' Evidence

In response to Dr. Bates' evidence, Canfor submits that Dr. Bates agreed as follows:

- The U.S. EPA process of setting standards is a much more exacting, rigorous and superior process than the Canadian standard setting process;
- In 1997, after a rigorous review and critique of the science and health and environmental information available on PM_{10}, the U.S. EPA fixed the standard for PM_{10} at 150 $\mu g/m^3$ and for $PM_{2.5}$ at 65 $\mu g/m^3$;
- While the standards set in 1997 by the U.S. EPA are currently under review, they have not yet been changed;
- In the last 5 years, the science with respect to the effects of PM_{10} and $PM_{2.5}$ on human health has flourished rapidly. In 1997, there was no concern with $PM_{2.5}$;
- There remains a lack of definitive understanding about how PM_{10} and $PM_{2.5}$ fluctuates on an hourly basis and what the health effects may be;
- The reality is that in every city, PM_{10} and $PM_{2.5}$ exist and affects at risk populations as do other confounding factors;
- Asthma has many triggers, not just PM_{10} or $PM_{2.5}$; and
- It is not yet clearly understood how PM_{10} or $PM_{2.5}$, or components thereof, affect asthmatics.

With respect to Dr. Bates' evidence, Canfor states:

- Dr. Bates admitted that he was not an expert on the source of PM_{10} and would have to defer to a study which examined that. He also admitted that he has had no experience with beehive burners in B.C. and he admitted that there is still much uncertainty with respect to what the epidemiological studies confirm about the effects of particulate matter on human health, about the importance of particle size and composition and about who are the people who are affected by it.

Canfor submits that the only material conclusions that can be drawn from Dr. Bates' evidence are:

1. The regulatory process entails a rigorous process of peer review of many studies relating to the matters to be regulated and whose conclusions are not always uniform. It is not adequate or appropriate simply to rely on one or two studies or opinions and to base a regulatory standard on that study or opinion;

2. There is a great deal of uncertainty in the scientific world about the effects of PM_{10} and $PM_{2.5}$ on human health and on certain segments of population in various areas. There are general assumptions which have been made as a result of epidemiological studies, but there are no definitive conclusions; and

3. The reality of living in any populated area in the world, large or small, is that people will be affected by particulate matter in the air and those in every city, large or small, who are more vulnerable, such as children, the elderly and asthmatics will also suffer, and likely more than the rest.

Canfor concludes with the following comment on Dr. Bates' evidence:

> While Canfor recognizes that Dr. Bates is highly qualified in his area of expertise, he is simply one physician or scientist. To accept his views over the formal standards established by the U.S. EPA or the Canadian regulatory authorities is to adopt the very hazard which the rigorous U.S. EPA process seeks to guard against and which both Dr. Bates and Dr. Valberg agree is necessary. Dr. Bates is clearly an advocate of more rigorous air quality standards. That issue is not one that this Panel can entertain.

Response to Dr. Bowering's Evidence

Canfor submits that through Dr. Bowering's evidence, the Individual Appellants and the Respondent attempt to persuade the Panel that the Northern region has the highest percentage of children and elderly with respiratory diseases and asthma than any other region in the province, and that the Skeena region has the second highest rate of hospitalizations for asthma than any other local health area in the Northern region. The inference they would like the Panel to draw is that Bulkley Valley residents are more at risk, are suffering more from asthma and respiratory illness than residents in any other part of the province and that the Corporate Parties' burners must be the cause. They sought to do so by adducing evidence

from Dr. Bowering only with respect to the Northern region of B.C., and in total disregard of the PM_{10} levels and standards anywhere else in the province. Canfor further argues that Dr. Bowering's evidence does not support the propositions advanced by the Respondent and Individual Appellants because:

- Dr. Bowering does not have any expertise concerning PM_{10}, and relied solely on the evidence of others such as Dr. Bates and Dr. Vedal concerning the effect of PM_{10} on human health. Accordingly, he conceded that he could not offer any reliable or useful opinions about the cause of asthma or respiratory problems in children or the elderly in the Bulkley Valley. It is apparent from the evidence and work of these gentlemen that no conclusions can fairly be drawn from their evidence that the burners, and not other sources of particulate matter, are the cause of health deficiencies;

- In a population as small as that in the Bulkley Valley, it is not possible to demonstrate cause and effect between particulate matter and adverse health effects because the population is too small to derive any statistically valid numbers;

- Dr. Bates concludes in his report that it is reasonable to assume that between 5%-8% of children on average in a community will have asthma. Dr. Bowering's data indicates that, in Smithers, the average percentage of children with asthma is approximately 4%. This is significantly lower than what is reasonably expected; and

- Dr. Bowering did not confirm the asthma rates of all the local health authorities in the province, and he has done no comparison of these rates nationally, before emphasizing the Skeena region as the second worse community in the region for asthma hospitalizations. An examination of the epidemiological analysis, *Respiratory Disease Patterns in Northern B.C.: Focus on Skeena Health Unit*, Dr. Robert Fisk et al, January 2, 1995, shows that many other areas in the province have higher respiratory mortality rates that the Skeena Region.

- While he noticed increased hospitalization and mortality rates with respect to asthma, he did not notice any difference for other respiratory illnesses or even for asthmatic residents of the Bulkley Valley between 14 and 65 years of age.

Having regard to this evidence, Canfor submits that the theory that the Bulkley Valley residents suffer more than those in any other part of the Province is untenable.

Response to Dr. Bastian's Evidence

Canfor submits that Dr. Bastian openly acknowledges that there are important sources other than the beehive burners which contribute to the airshed, and that no one really knows the extent to which the beehive burners and these other sources

are contributing to the airshed. Canfor further submits that Dr. Bastian's evidence must be questioned for the following reasons:

- She was the only medical doctor from the Bulkley Valley to be called as a witness;

- Dr. Bastian's evidence is inconsistent with that of Dr. Bates and Dr. Bowering. Their evidence does not lead to the conclusion that there are substantially more incidents in Smithers than anywhere else in B.C. or Canada of respiratory problems as a result of particulate matter exposure;

- Dr. Bastian is not a trained opacity reader. Uncontradicted evidence from both the Corporate Appellants and the Respondent indicates that, without special training, it is extremely difficult to know whether smoke or steam is being emitted from the burners; and

- There was ample uncontradicted evidence that establishes that photographs of burner emissions can be very deceptive in determining the difference between smoke and steam.

In summary, Canfor submits that:

- There are sources of wood smoke and particulate matter of serious concern other than the beehive burners in the Bulkley Valley; and

- It is impossible to establish a causal link between adverse health effects in the Bulkley Valley and the beehive burners.

Houston's Submissions

Houston submits that the emissions from Houston's beehive burner are not expected to cause elevations of mortality and morbidity for the inhabitants of the Bulkley Valley. In support of its argument, Houston refers to the evidence of Dr. Valberg. Dr. Valberg testified that, while epidemiological statistical studies have found statistical associations between PM_{10} levels and health effects, the relationship has not been shown to be causal and the association is in contradiction to other toxicological evidence. As well, Dr. Valberg testified that there is no biological support for Dr. Vedal's suggestion that adverse health effects begin to occur at 20 $\mu g/m^3$.

Response to Dr. Vedal's Evidence

In response to Dr. Vedal's evidence, Houston refers to Dr. Valberg's evidence as follows:

- In formulating the incremental approach, Dr. Vedal took the statistical associations from epidemiological statistical studies and assumed that those statistical associations were completely causal. No confounders were taken into account;

- Dr. Vedal assumes that the statistical association was completely due to particulate matter. He did not attempt to correct for the possible influences of other substances, such as ozone or sulphur dioxide;

- Dr. Vedal used the same threshold of 30 $\mu g/m^3$ for a wide range of health outcomes, such as death or cough, which does not make a lot of sense toxicologically;

- Dr. Vedal's study was never published in a peer reviewed academic journal; and

- In 1997, when the U.S. EPA was examining ways to characterise risk from airborne particulate matter, it chose not to rely on the incremental approach advocated by Dr. Vedal.

Houston further submits that the B.C. Interim Air Quality Objective of 50 $\mu g/m^3$ is protective of public health, contrary to the Assistant Manager's evidence that it is not an acceptable standard and is not protective of public health. Houston also refers to the Assistant Manager's evidence that, if he were writing to a member of the public, he would not simply rely on the B.C. Interim Air Quality Objective of 50 $\mu g/m^3$, but would make reference to the recommended level from the Federal/Provincial Task Force, which is 25 $\mu g/m^3$. The Assistant Manager also testified that he would like to see, not just zero exceedences of 50 $\mu g/m^3$, but zero exceedences of a lower level.

Like West Fraser, Houston submits that the Assistant Manager's view that B.C.'s Interim Air Quality Objective of 50 $\mu g/m^3$ is not an acceptable standard and is not protective of public health is a personal view, which is at odds with the standards, guidelines and policies of the Ministry. Therefore, the Board should accord the Assistant Manager's view little or no weight.

Houston further submits that by failing to adhere to the B.C. Interim Air Quality Objective, and by imposing a more restrictive standard in the Skeena Region, the Assistant Manager is acting outside his jurisdiction.

Individual Appellants' and B.C. Lung's Responses to Dr. Valberg's Evidence

In response to the evidence of Dr. Valberg, the Individual Appellants submit that his opinion with respect to the impact on human health from the beehive burners is entitled to little weight. The Individual Appellants submit that his evidence did not involve an examination of the precise matters at issue before the Panel. They also ask the Panel to note that Dr. Valberg is a senior scientist with a private consulting firm, and a physicist and physiologist, rather than a medical doctor. Further, he has not been the principal investigator of an epidemiological study, or any study of human lung function.

As well, the Individual Appellants note that Dr. Valberg does not seriously dispute the merit or correctness of the epidemiological studies that Dr. Bates, Dr. Vedal, Environment Canada, the U.S. EPA and others rely on to link particulate exposure

with adverse health effects. Although Dr. Valberg disputed the evidence with respect to *causal* connection, he did not dispute the fact that the statistical evidence is there with respect to whether health effects could be observed at increments above 20 µg/m^3. The Individual Appellants also argue that Dr. Valberg's opinion that action to control PM_{10} sources is premature and unnecessary is at variance with his colleagues, the precautionary principle and environment and health protection agencies. The "precautionary principle" that has been adopted by the Ministry states that, "the lack of full scientific certainty will not be used as a reason for postponing measures to prevent environmental harm."

The Individual Appellants also refer the Panel to a previous Board decision which concluded that PM_{10} is a threat to public health, *Louisiana,* and to the *Fleischer* decision. In the *Fleischer* decision, the Board concluded:

> With regard to particulate matter, the Panel finds that there is no dispute that particulate emissions can cause adverse health impacts. The Panel agrees with Dr. Martiquet that it is in the community's best interest to reduce emissions as soon as possible.

B.C. Lung submits that Dr. Valberg's opinion is completely unsupported by the weight of scientific evidence in this area. In particular, B.C. Lung referred to Dr. Valberg's opinion with respect to the margin of safety of the 150 µg/m^3 National Ambient Air Quality ("NAAQ") guideline set by the U.S. EPA, unmeasured confounders which weaken the causative plausibility of epidemiological associations between PM_{10} and adverse health effects, and the lack of supporting evidence from human, animal and toxicological studies indicating that further study is required before accepting a causal association between adverse health effects and PM_{10}.

B.C. Lung submits that the experiences of the local residents of the Bulkley Valley with respect to compromised health resulting from poor air quality validate the conclusions drawn by Dr. Vedal and Dr. Bates.

B.C. Lung also submits that the Assistant Manager has the obligation to protect human health from air contaminants, which are defined in section 1 the *Act*, in part, as:

> a substance that is emitted into the air and that
>
> (a) injures or is capable of injuring the health or safety of a person…
>
> …
>
> (c) interferes or is capable of interfering with visibility…
>
> …
>
> (e) causes or is capable of causing material physical discomfort to a person.

B.C. Lung concludes that the overwhelming weight of evidence precludes any conclusion other than that PM_{10} and $PM_{2.5}$ are health hazards, and air contaminants, which have severe, negative implications for human health. The severity of the impact increases with any pre-existing compromised health such as respiratory disease. The elderly are also at greater risk of more severe impacts from high levels of particle pollution.

It submits that there is no question that the particles emitted from the three beehive burners in question meet all three definitions of an "air contaminant." The only issue is whether the Assistant Manager was correct in amending the permits to allow the burners to continue to operate into the future, albeit with some minor modifications.

Discussion and Analysis

The first issue for the Panel to consider is whether there is sufficient evidence to conclude that particulate matter from the Corporate Parties' beehive burners has an adverse effect on human health in the Bulkley Valley. The Panel heard considerable conflicting evidence on this issue.

In summary, the Individual Appellants and B.C. Lung submit that the expert evidence of Dr. Bowering, Dr. Bates and Dr. Vedal establishes that the combustion particulate matter produced by the three beehive burners of the Corporate Parties in the Bulkley Valley, PM_{10}, is an identified health hazard and known harmful pollutant. They also submit that such particulates have a negative effect on respiratory health, particularly on children and elderly people with asthma, and that this is confirmed by the evidence of Dr. Bastian, and the local residents.

On the other hand, the Corporate Parties submit that no causative link can be established between the Corporate Parties' burner emissions and the health of the residents of the valley, and that there is considerable uncertainty about the relationship between particulate matter and respiratory health. They ask the Panel to accept the evidence of Dr. Valberg that, when scientific research demonstrates contradictory conclusions to epidemiological findings, then action should not be taken. They conclude that the Individual Appellants have failed to meet the onus on them to demonstrate that emissions from the beehive burners are causing adverse health effects in the Bulkley Valley.

However, the Panel also notes that West Fraser clarified its submission, stating that it does not ask the Panel to make a finding that there are no health effects associated with PM_{10} exposure, but rather that health effects at the levels of ambient particulate matter experienced in the Bulkley Valley have not been demonstrated.

The Panel finds the evidence of Dr. Bates, a Professor Emeritus of Medicine and Physiology who has assisted both Canadian and U.S. regulatory authorities on air quality issues, compelling. Dr. Bates testified that enough is known about "the effects of particulate pollution to be confident that particles emitted from these burners create a health risk," and that, "accordingly, from a public health

perspective, reasonable steps should be taken to eliminate or reduce their emissions." In reaching his conclusions, Dr. Bates specifically reviewed the PM_{10} monitoring data for the Bulkley Valley.

Although the Panel acknowledges, based on the evidence of the Corporate Parties, that there may still be some uncertainty in the scientific world about the effects of PM_{10} and $PM_{2.5}$ on human health and on some segments of the population, the Panel accepts Dr. Bates' evidence that studies demonstrate in at least 35 different regions on five continents that there is a consistent association between the level of particulate matter and adverse health effects.

The Panel also finds that Dr. Bates' evidence was confirmed by the evidence of Dr. Bowering, the MHO for the Northwest region of B.C., who is also a medical doctor with expertise in public health and epidemiology. Dr. Bowering concluded that, based on his familiarity with PM_{10} literature, there is a strong case to be made that fine particulates from smoke do have a negative impact on respiratory health, and particularly on the health of children and the elderly with asthma. The Panel accepts the evidence of Dr. Bowering that the PM_{10} monitoring data shows that the Bulkley Valley possibly has the worst record of air pollution for PM_{10} particulates in his region.

Similarly, the Panel accepts Dr. Vedal's evidence on the range of effects after exposure to PM_{10} and $PM_{2.5}$.

The Panel accepts Dr. Bowering's evidence, despite West Fraser's submission that Dr. Bowering's evidence was not supported by any epidemiological or clinical studies on the rates of asthma or the characteristics of pollutants in the lungs of Bulkley Valley residents, or studies on the correlation between increases in respiratory disease occurrences during incidences of heavy smoke lying in the Bulkley Valley. Similarly, the Panel was not persuaded by Canfor's argument that Dr. Bowering does not have any expertise concerning PM_{10}, and relied solely on the evidence of others.

The Panel also accepts the evidence of Dr. Bastian, a local physician who has worked in the Bulkley Valley since 1982, who testified that she is of the view that the air quality in the Bulkley Valley "was a significant contributor to the ill health of this community." Dr. Bastian's evidence was confirmed by the testimony of local residents.

The Panel does not accept Dr. Valberg's evidence that there is an insufficient causal relationship between particulate and health effects, and that action to control PM_{10} sources is premature. This evidence directly contradicts the medical and scientific evidence of Dr. Bates, Dr. Bowering and Dr. Bastian, and the testimony of the Assistant Manager. In particular, Dr. Vedal specifically stated that there is sufficient information in the scientific community to accept a causal relationship between PM_{10} levels and adverse health effects.

Further, the Panel is of the view that adopting Dr. Valberg's approach could result in the failure of officials to take regulatory action to prevent or minimize

environmental impact until gaps in scientific research are eliminated. The Panel notes that this approach would be inconsistent with the *Act*, and the precautionary principle that forms part of Ministry Policy. Based on B.C. Lung's submission regarding the definition of "air contaminant," the Panel notes that a person is prohibited from introducing waste, which includes an "air contaminant," into the environment in a manner that causes pollution. The definition of "air contaminant" could clearly include PM_{10} or $PM_{2.5}$, and hence are within the scope of the *Act*.

As well, on this point, the Panel agrees with the findings of the Board in *Louisiana*, where the Board stated:

> Although the Board recognizes the gap in scientific findings with respect to the actual mechanism whereby particulates cause health effects, nonetheless there is significant and compelling epidemiological data linking the presence of particulates with overall health effects. Although this is a method of scientific inference which does not satisfy Dr. Pirages, nonetheless given the potential for widespread and serious health effects, the Ministry of Environment, Lands and Parks must take steps to minimize where possible the production of small particulates.

The Panel also notes that the Board in *Fleischer* concluded that there is no dispute that particulate emissions can cause adverse health impacts, and that, "it is in the community's best interest to reduce emissions as soon as possible." This is consistent with Dr. Bowering's testimony in which he urged the Panel to do what it could do to eliminate or minimize levels of PM_{10}.

In making its decision on this issue, the Panel has taken into account that the regulatory authorities in B.C. and other jurisdictions have taken steps to limit particulate matter discharges, as well as to regulate and/or eliminate beehive burners. In particular, the Panel notes that these actions were confirmed by the B.C. government when it continued with its proposal to phase-out beehive burners, albeit within an extended timeframe.

PM_{10} Criteria for Adverse Health Effects

In connection with the above issue, the Panel heard extensive evidence regarding what air quality objectives should be applied in determining whether the emissions of the beehive burners are causing adverse health effects in the Bulkley Valley.

The Panel notes that the Parties do not disagree on what the objectives or standards are for B.C., the U.S. EPA, and what is proposed in the *Canada-Wide Standards*. What is in disagreement is the criteria that should be applied by the Assistant Manager in amending the permits under section 13(1) of the *Act*.

B.C. Lung submits that the evidence of both Dr. Bates and Dr. Vedal indicates that there is no known threshold for effects of PM_{10} exposure, and that the current B.C. guideline of 50 $\mu g/m^3$ is not protective of human health. As well, B.C. Lung refers the Panel to the CEPA/FRPAC working group's recommendation of a reference level for PM_{10} of 25 $\mu g/m^3$.

The Assistant Manager testified that B.C.'s Interim Air Quality Objective of 50 $\mu g/m^3$ is not an acceptable standard and is not protective of human health. In the Skeena region, the Ministry identified an annual air quality objective of 20 $\mu g/m^3$ to complement a 50 $\mu g/m^3$ daily objective.

The Corporate Parties submit that in 1997, the U.S. EPA fixed the standard for PM_{10} at 150 $\mu g/m^3$ and for $PM_{2.5}$ at 65 $\mu g/m^3$, and that although this standard is under review, it has not been changed. They argue that the Assistant Manager's view that B.C.'s Interim Air Quality Objective of 50 $\mu g/m^3$ is not protective of human health is a personal view that is at odds with the standards, guidelines and policies of the Ministry, and that he is acting outside his jurisdiction. West Fraser also noted that the 50 $\mu g/m^3$ objective is the most stringent applied in the world, and that the levels of ambient PM_{10} in the valley remain consistently below the B.C. guideline of 50 $\mu g/m^3$.

Mr. Johnson's report, *Inhalable Particulate Summary*, reports on B.C.'s and Canada's air quality assessment criteria. Exceedences of the provincial Interim Air Quality Objective of 50 µg/m3 characterize very serious air quality episodes. Level A criteria are designed for long-term protection for all environments and represent a conservative approach of protecting the most sensitive receptor, thereby providing a wide margin of safety to protect other less sensitive receptors. A Maximum Desirable equivalent level (Level A) has not yet been proclaimed. Ministry staff have denoted the Fair/Good air quality breakpoint for PM_{10} at 25 µg/m3.

On this issue, the Panel notes the findings of the Board in *Rustad*, and the general law against fettering which prohibits a decision-maker such as a regional waste manager from exercising his discretion in a manner which is unduly influenced by policy, whether it is national policy, provincial policy or objectives.

In this case, the Ministry identified an annual air quality objective of 20 $\mu g/m^3$ to complement a 50 $\mu g/m^3$ daily objective. The Panel notes that the Assistant Manager's view that the provincial air quality objective of 50 $\mu g/m^3$ is not adequate in the Bulkley Valley airshed is supported by expert medical evidence provided to the Panel. As well, the Panel notes that 50 $\mu g/m^3$ is an "objective" rather than a "standard."

Furthermore, the Panel notes that a threshold of less than 50 $\mu g/m^3$ is consistent with B.C.'s and Canada's air quality assessment approach noted earlier. Level B exceedences (daily concentrations greater than 50 $\mu g/m^3$) characterize very serious air quality episodes. Ministry staff have denoted the Fair/Good air quality index breakpoint for PM_{10} at 25 $\mu g/m^3$. Thus, 25 $\mu g/m^3$ is effectively defined as a reference level below which no statistically significant human health impacts can be observed. Based on North American studies examining hospitalization and mortality relationships with air pollution, the Federal Provincial Working Group in Air Quality Objectives and Guidelines (1997) have recommended a 24 hour Reference Level for PM_{10} of 25 $\mu g/m^3$ and 15 $\mu g/m^3$ for $PM_{2.5}$. A "Reference Level" represents a concentration from which human health impacts can be demonstrated.

It is the Panel's view that it is reasonable for the Ministry (and therefore the Assistant Manager) to set objectives for specific areas of the province, taking into account provincial objectives and regional air quality and health considerations. The Assistant Manager has considered the specific characteristics of the Bulkley Valley and has made his decision in accordance with those characteristics. The Panel, therefore, finds that it is reasonable and appropriate to apply an air quality objective of 25 ug/m3 for PM10 for the Bulkley Valley.

Conclusion

For all of the above-noted reasons, the Panel concludes that the particulate matter from the beehive burners contributes to the air quality of the Bulkley Valley, and that the particulate matter from the three beehive burners will cause an adverse effect on the environment and on human health. For this reason, the Panel concludes that it is clearly within the jurisdiction of the Assistant Manager, and hence the Panel, to amend the permits with respect to the beehive burners for the protection of the environment. The next step is for the Panel to consider whether the specific amendments are beyond the jurisdiction of the Assistant Manager.

3. Whether the Assistant Manager has the jurisdiction to amend

(i) Canfor's permit PA-01543;

(ii) Houston's permit PA-05339;

(iii) West Fraser's permit PA-01691; and if so,

whether the Assistant Manager's specific amendments are reasonable under the circumstances.

Canfor's Submissions

Canfor submits that the amendments to its permit are unreasonable, discriminatory and were made in excess of the jurisdiction of the Assistant Manager on the grounds that:

(a) the amendments were not made for the protection of the environment and will not result in any measurable improvement to the environment, but were made instead for the purpose of appeasing the public, making enforcement easier, and raising the public profile of and politicizing the beehive burner issue;

(b) the amendments are discriminatory because they are not broadly imposed on all burner operators in the province; and

(c) the improvements required by the amendments are unfair in light of the current government policies and regulation regarding the phase-out of the burners.

In considering these issues, Canfor submits that consideration of evidence relating to the following issues is integral:

(a) The policy and conduct of the Government concerning the beehive burners;

(b) The wishes of the community relating to the beehive burners;

(c) The *bona fides* of Canfor in seeking to achieve a value-added option;

(d) Particulates (PM_{10} and $PM_{2.5}$) in the Bulkley Valley and the impact of the burners on particulate emissions;

(e) How particulate levels in Smithers compare with levels in other places and the impact of burner emissions on human health;

(f) Whether residents of Smithers are treated in a discriminatory fashion;

(g) Evidence not called by the Assistant Manager and Individual Appellants; and

(h) Canfor's particular concerns with the permit amendments and the Ministry's response to the same.

Canfor submits that the amendments were imposed for the purposes of raising public awareness and outrage in respect of the burner issue and influencing the Province's decision about the fate of the burners.

It argues that the exercise of discretionary power must conform with the policies and objects of the *Act*, and that the courts have frequently held that it is an exceedence of jurisdiction for a statutory delegate to use a power for a purpose that is unauthorized by the empowering legislation, or for some ulterior purpose, in bad faith, or acting on irrelevant considerations. Canfor submits that the Assistant Manager's evidence indicates that the amendments were made for an ulterior or irrelevant purpose. It argues that their inclusion in Canfor's permit would be an abuse of the regulatory and administrative process.

Canfor submits that its concerns with respect to each amendment are as follows:

Section 1.3.1 (Restriction on Maximum Discharge from the Power Boilers)

This provision requires that the maximum authorized rate of discharge from the hog fuel power boilers be 1,700 m^3/min. Canfor argues that this rate of discharge is not achievable on a consistent basis, and therefore it is unfair and unreasonable to impose the term. Canfor submits that the only way that it can comply is to cease operating. For these reasons, Canfor submits that this amendment is *ultra vires* the jurisdiction of the Assistant Manager and the Board.

In support of this argument, Canfor refers the Panel to *Dundurn Foods Ltd.* v. *Allen*, [1964] 2 O.R. 75 (H.C.J.) @ 78, af'd [1964] 2 O.R. 75n (C.A.), and *Re McCormick and the Township of Toronto*, [1948] O.W.N. 425 (H.C.J.) @ 427-8.

Section 1.7.2 (Opacity)

This provision requires that the smoke discharge opacity from the beehive burner not exceed 40% at any time. Canfor submits that it is impossible to comply with this because there are inevitably periods of smoke which exceed this limit on start-up. Canfor further submits that this provision is discriminatory and unreasonable because only two of a number of burner operators in the region are subject to this requirement. It argues that there is nothing in the *Act* that expressly allows the Assistant Manager to treat burner operators differently.

Section 7 (Upgrading of Works)

This provision requires Canfor to implement improvements to the burner system and related operational procedures to allow for:

(a) continuous controlled fuel feed which will allow a maximum of one start-up and one shut-down per week and optimization of burner temperature for clean burning of wood residues;

(b) the ability to provide supplementary fuel as needed to cover shift changes, breakdowns, meal breaks, shifts during which less wood residue is produced, periods of extreme cold or wet conditions and other circumstances when the regular fuel feed rate is inadequate to sustain optimum burning conditions, and

(c) the capacity to divert wood residue from the mill to a temporary storage facility thereby allowing the burner to be shut down for up to 5 consecutive days of normal production when so directed by the Regional Waste Manager in order to prevent or minimize episodes of poor ambient air quality.

As well, Canfor was required to submit a plan to the Regional Waste Manager by February 10, 1999, which outlines how the above requirements will be met and by what date(s).

The Panel notes that, at the time of the hearing, Canfor's main concern was not with the costs associated with the upgrades but that, having regard to the *Regulation* in effect at that time and the uncertainty about what the Province would ultimately decide about the December 31, 2000 deadline (that was in effect at that time), the upgrades, once completed, would be in place only for a very short period of time. As previously noted, since then, the deadline has been extended to December 2003/2004.

Canfor submits that it has three main concerns about implementing the required upgrades. These concerns relate to whether the upgrades would significantly improve air quality in the valley, whether the energy and funds to be expended on the improvements could be put to better use if applied to the implementation of a value-added solution, and Canfor's need to know with some certainty how long the burners will be operating, and what the Ministry will require in terms of an alternative system upon phase-out of the burners.

Canfor also submits that these amendments were made, not for the protection of the environment, but to raise the public profile on the beehive burner issue.

Section 8 (Burner Phase Out Progress Reporting)

Section 8 states the following:

> The Permittee shall submit progress reports to the Regional Waste Manager by June 30 and December 31 of each year in a format suitable for publication in local newspapers and distribution to local public libraries. Reports shall include but not necessarily be limited to the following:
>
> …
>
> (b) beehive burner phase out plan development progress, …

Canfor submits that this amendment does nothing to protect the environment.

In particular, Canfor expressed concern about the placing of annual reports in the libraries, and that this requirement is not broadly applied in the Province, and is not constructive in achieving the phase-out of the burners.

Section 9 (Visual Monitoring of Beehive Burner Emissions)

Section 9 states:

> In a cost-shared arrangement with Houston Forest Products Company, the Permittee shall implement a continuous emissions monitoring system consisting of a video camera and computer system [the "Webcam system"] which will enable Pollution Prevention staff and members of the general public to view a real-time video image of the beehive burner and power boiler emissions via the Internet. Equipment and location selections shall be to the satisfaction of the Regional Waste Manager. An implementation date will be specified in a separate letter by the Regional Waste Manager.

Canfor argues that such monitoring is not necessary for the protection of the environment, and is discriminatory and highly prejudicial to Canfor. Canfor expressed concern that only it and Houston were subject to this requirement. Canfor also submits that there is a very serious risk that the public will misunderstand what they are seeing, and the publication over the Internet creates the potential for eco-terrorism and economic harm to the business of the Corporate Parties.

In support of its arguments, Canfor argues that the Assistant Manager's discretion to impose terms and conditions in, and/or to amend a permit is limited by the purpose and objects for which the discretion is conferred.

Section 10 (Environmental Protection Plan)

Section 10 states as follows:

> …Based on these inspections, monitoring data or any other relevant information, the Regional Waste Manager may require the Permittee to submit an Environmental Protection Plan. The Plan shall detail specific action(s) to be implemented by the Permittee to protect the environment such as:
>
> (a) undertaking additional monitoring,
>
> (b) repairing/upgrading existing pollution prevention works,
>
> (c) installing new pollution prevention works, and
>
> (d) implementing other pollution prevention measures.

Canfor submits that the language of the amendment is unclear and although it does not specifically refer to episode management, it is Canfor's view, based on the evidence, that it is related to episode management.

Further, Canfor submits that this amendment is discriminatory because it is only applied to Canfor and Houston in the Province, and the implementation of episode management has the potential to seriously affect the ability of Canfor to do business in B.C. It also submits that there is no evidence to suggest that this provision will protect the environment. Canfor also submits that there is a lack of information on whether and how much the burners are contributing to poor air quality in the Bulkley Valley.

Accordingly, it asks the Panel to rescind the amendments.

Houston's Submissions

Houston submits that the amendments to its permit are not necessary for the protection of the environment, and that no evidence has been adduced at the hearing to establish that the amendments will result in any significant improvement to the air quality in the valley.

The amendments, which are the subject of Houston's appeal and Houston's concerns with them are as follows:

Section 7 (Burner Phase-Out Progress Reporting)

Under section 7 of its amended permit, Houston is required to submit progress reports to the Regional Waste Manager by June 30 and December 31 of each year in a format suitable for publication in local newspapers and distribution to local libraries. This provision is the same as section 8 in Canfor's permit.

Houston submits that the protection of the environment does not require that information on the wood residue generated by the mill, the progress of the beehive burner phase-out plan, or interim prevention and utilisation initiatives be published in local newspapers and distributed to local public libraries. In support of its argument, Houston refers to the Assistant Manager's testimony that the reasons for imposing the requirement of public reporting were:

- to monitor the progress towards compliance with the beehive burner phase-out deadline;
- because there is a lot of public interest in this issue;
- to foster better communication with the public;
- to use public accountability as an incentive for Houston "to be actively busy on these issues"; and
- to educate the public on their own responsibilities with respect to PM_{10}.

Houston submits that none of these reasons makes public reporting necessary for the protection of the environment, as stipulated by section 13(1) of the *Act*. Accordingly, Houston submits that the Assistant Manager lacked the jurisdiction to amend its permit to include the public reporting requirement.

However, Houston also submits that it does not oppose public reporting, and publicly reports on a non-mandatory basis.

Section 8 (Visual Monitoring of Beehive Burner Emissions)

This provision requires Houston to implement a Webcam system, which would enable Pollution Prevention Staff and members of the general public to view a real-time video image of the beehive burner emissions via the Internet. It is the same as section 9 in Canfor's permit.

Houston submits that the Webcam system requirement is not necessary for the protection of the environment, and would be of no utility whatsoever. Houston objects to having the images of its beehive burner placed on the Internet where anyone in the world will have access to the images because of possible erroneous conclusions on the basis of the images.

Accordingly, Houston submits that it would be unreasonable to impose on Houston a requirement to implement a Webcam system. Houston further submits that the Assistant Manager lacked the jurisdiction to amend Houston's permit to include this requirement. However, Houston also submits that it has no objection to the continuous real-time monitoring of its beehive burner by the Ministry, for example, by closed-circuit television, or a videotape system.

Section 6(c) (Upgrading of Works - Episode Management)

Under section 6(c) of its permit, Houston is to shut down its beehive burner for up to 5 consecutive days "when so directed by the Regional Waste Manager in order to prevent or minimise episodes of poor ambient air quality." This provision is the same as section 7(c) of Canfor's permit.

Houston submits that the amendments to section 6(c) of its permit are unreasonable because the conditions under which episode management will be administered have not been worked out and the terms on which the Assistant Manager may invoke episode management have not been specified in the amended permit. Houston argues that the amended permit does not specify the scientific basis of the Regional Waste Manager's decision to order the shut down of the beehive burner, or the environmental conditions that must exist before the Regional Waste Manager will order a shut down.

Houston further submits that it does not object to the concept of episode management, but to the terms of the amended permit which confer on the Regional Waste Manager unfettered discretion to invoke episode management and to shut down Houston's beehive burner for 5 days.

Therefore, Houston asks the Board to direct the Assistant Manager to engage in meaningful negotiations with Houston with a view to reaching agreement on the specific terms under which episode management will be administered. As well, Houston asks the Board to preserve the status quo and enable the Assistant Manager and Houston to negotiate the terms of any amendments to Houston's permit.

Cost of Amendments

Houston submits generally that the amendments are vague and uncertain. As well, Houston submits that the amendments to its permit are unreasonable because they call for a capital investment in the amount of almost $2.1 million for the modification of Houston's beehive burner which is to be phased-out by December 31, 2000 (now December 31, 2003/04). Houston suggests to the Board that this money would be better spent on a long-term solution for the disposal of its wood residue, whether co-generation or high efficiency incineration. However, Houston further submits, in its June 2000 written submissions, that it is prepared to make the $2.1 million investment in its beehive burner to allow continuous feed, provided that it is entitled to use the upgraded beehive burner for a reasonable period of time.

Accordingly, Houston asks the Panel to rescind the amendments to its permit and to provide direction to the Assistant Manager as mentioned above.

West Fraser's Submissions

West Fraser submits that the Board lacks jurisdiction to make the requested amendments to West Fraser's permit, because they are not consistent with the

Amended Regulation, its purposes and objects. West Fraser also argues that the timing of the amendments to the *Amended Regulation* and the implementation of the *Rebate Regulation* demonstrates that Cabinet has turned its mind to the issues in this appeal, and has decided that they must be dealt with through regulatory amendment, rather than by this Board.

West Fraser also submits that the decision by the Individual Appellants to pursue these appeals has unfairly exposed West Fraser to public scrutiny notwithstanding that West Fraser has fully complied with the amendments made to its permit, and continues to fully cooperate with the Respondent to minimize the emissions from the beehive burners by keeping its beehive burner in good running order, installing works to allow it to operate at high temperatures 24 hours per day, installing storage facilities for the implementation of episode management, and by pursuing value-added solutions to the wood residue issue.

Individual Appellants' Submissions

The Individual Appellants have maintained throughout the hearing that the Assistant Manager has the jurisdiction to amend the permits of the Corporate Parties, and hence, the Board has the power to amend the permits. However, the Individual Appellants submit that they are opposed to the amendments made by the Assistant Manager. They ask the Panel to amend the permits of the Corporate Parties in accordance with their Proposed Amendments, provided to the Panel on August 18, 2000. In the alternative, they ask the Panel to amend the permits of the Corporate Parties in accordance with the Respondent's Proposed Amendments, provided to the Panel on September 7, 2000. These matters will be dealt with under Issue 4 of this decision.

In particular, the Individual Appellants submit that they are opposed to the Assistant Manager's amendments on the following grounds:

- The continued use of the burners represents a serious, potentially insurmountable obstacle to maintaining good air quality in the Bulkley Valley;

- The permits fail to adequately address the public health problems caused by the burners;

- The beehive burners are an obsolete technology, incapable of being retrofitted with pollution abatement technology necessary to protect public health;

- The continued authorization of the burners contradicts the Ministry's Guidelines and Standards Policy governing pollution, dated October, 1997, including reliance on the precautionary principle, pollution prevention, the use of best available technology, and polluter pays the full environmental and social costs of their pollution;

- The episode management regime is an inadequate temporary measure that cannot protect the public against long continuous air quality episodes, nor

against repeated air quality episodes over the course of a couple of weeks, and hence, against public health risks;

- The provisions in the permits requiring continuous feed do not adequately protect public health. A continuous burn at a high temperature produces less visible smoke dominated by the small particulate fraction that is of greatest concern from a health perspective. As well, even when burning at a continuous high temperature, the burner produces a pall of smoke that hangs over town. Continuous feed would not reduce or eliminate the phenomena of the twice-daily periods of high ambient concentrations discussed by Mr. Hrebenyk, caused by burner emissions coming down to earth in morning and evening fumigation events that produce unhealthy hourly and multi-hour PM_{10} levels; and

- The failure of the permits to impose any mandatory phase-out plan is unreasonable, because all parties have known for close to 10 years that the burners have to be phased-out in the interests of public health.

B.C. Lung's Submissions

B.C. Lung agrees with the Individual Appellants that the amendments of the Assistant Manager should not be upheld, and that the Panel should amend the permits to require the elimination of permitted discharges from the burners by December 31, 2000 (now December 31, 2003/2004). It argues that the economic and logistic difficulties reported by the companies cannot override the obligation of the Assistant Manager to protect human health.

In the alternative, B.C. Lung supports the detailed amendments proposed by the Individual Appellants.

Respondent's Submissions

As previously noted, at the hearing on September 7, 2000, the Respondent provided its Proposed Amendments, and asked the Panel to order that the permits be amended in accordance with those amendments, rather than the amendments that were actually made to the permits. The Panel will consider this issue under Issue 4. However, the Panel will first consider the Assistant Manager's 1999 amendments that gave rise to this appeal.

The Respondent submits that the three requirements of the permit amendments, related to continuous feed and supplementary fuel, progress reports and an environmental protection plan, do not conflict with the conditions set forth in the *Amended Regulation*, and that these further conditions should be confirmed by the Board, as operating requirements as per section 2(2.1) of the *Amended Regulation*.

With respect to the Corporate Parties' submissions that the amendments are either unreasonable or excessive, the Respondent submits that the additional details in the permit amendments will simply optimize benefits from the changes mandated by the *Amended Regulation*.

The Respondent also submits that the Panel only has jurisdiction in this appeal to consider the new or additional requirements imposed by the 1999 permit amendments. Under the *Act*, the jurisdiction of the Board does not extend to the review of prior permit conditions made to Canfor's permit, such as maximum authorized rate of discharge and smoke opacity since both of these permit conditions predated the January 27, 1999 amendments at issue in these appeals. Based on this, the Respondent argues that matters under consideration in the appeal should be limited to the following matters:

(a) modification of the beehive burners to accomplish continuous control fuel feed;

(b) modification of the beehive burners to provide a supplementary fuel as needed in certain circumstances;

(c) the submission of progress reports to the Regional Waste Manager to document progress made in increasing wood residue utilization (section 10(1)(f) of the *Act*) and phasing-out of beehive burners as required by the *Amended Regulation*; and

(d) the submission of an environmental protection plan detailing specific action to be implemented by the permittee for the protection of the environment.

Based on the evidence, the Respondent submits that there is no dispute that the permit amendments will be effective to reduce emissions from the beehive burners and are designed to encourage and ensure an increased awareness and diligence in operation of the beehive burners in order to minimize environmental impact. Further, the Respondent indicates that the evidence of Lowell Johnson and Mr. Newman, former Director of Technical Services for Weldwood Canada, who gave evidence on behalf of Houston, was that the burner operates most efficiently somewhere in the range of 700 to 1000 degrees Fahrenheit and the burner's emissions can be reduced by maintaining temperatures within this range.

The Respondent argues that the evidence of both Gerald Vandergaag, Area Manager for West Fraser, who gave evidence for the Respondent, and the Assistant Manager outline the benefits of continuous controlled fuel feed and episode management. By limiting burner start-up to once per week and having a continuous fuel feed from storage, the number of burner temperature fluctuations can be reduced and the burner can also be operated for "episode management." This will avoid operation of the burner in meteorological conditions that are unfavourable to the dispersion of burner emissions.

In support of the Respondent's arguments, the *Revised Jacques Whitford Report* was referred to, estimating the emission factor for the West Fraser burner at one-half of the emission factor of the mills of the Corporate Appellants who have not, like West Fraser, implemented the permit amendments.

The Respondent asks the Panel to note the inconsistency in the Corporate Appellants' argument that the amendments are unreasonable and discriminatory

because they are imposed on all beehive burners in the Skeena region, while arguing at the same time that the amendments are discriminatory because requirements such as episode management and webcam technology have not been applied on a province-wide basis. The Respondent submits that the evidence is clear that the Assistant Manager has no authority to set operating conditions for beehive burners outside the Skeena region, and that the amendments in question derive from concerns over local air quality and resource utilization.

The Respondent submits that the permit amendments regarding progress reporting was designed to realize environmental benefits in the larger scheme of things. First, it was to encourage the efforts of the permittees to be "actively busy on these issues" (source control), and second, to educate the public on the importance of protecting air quality. The Assistant Manager testified that he would expect public accountability to result in measures to improve air quality.

With respect to the environmental protection plan, the Assistant Manager testified that it was a revision of an existing permit condition referred to as "Environmental Impact." The plan requirement is to enhance the manager's ability to respond to circumstances that presented risk to the environment, and is something that a manager may require. He states that, if and when such a provision is implemented, it would constitute an appealable decision in its own right.

Discussion and Analysis

In dealing with the jurisdictional issues raised by the Parties, it may be helpful to set out the statutory authority of the Assistant Manager to amend permits.

Under section 13 of the *Act*, a manager has the power to amend the requirements of a permit, on the manager's own initiative or on application of the permit holder, subject to the provisions in section 13 and the regulations, and for the protection of the environment. The Panel has already ruled that the wording, "and for the protection of the environment" should be broadly interpreted.

It is the Panel's finding that the following permit amendments are within the scope of this appeal:

(a) Upgrading of Works: This includes modification of the beehive burners to accomplish continuous control fuel feed, provide supplementary fuel, and allow burner shut-down for up to 5 consecutive days.

(b) Burner Phase-Out Progress Reporting: This includes the submission and format of progress reports to the Regional Waste Manager on progress made in increasing wood residue utilization and on beehive burner phase-out plan development progress.

(c) Visual Monitoring of Beehive Burner Emission: This involves consideration of the requirement regarding the equipment and location of the video camera and computer system (i.e., the Webcam system).

(d) Environmental Protection Plan: This would require submission of a plan detailing specific action to be implemented by the permittees for the protection of the environment.

The Panel finds that it does not have the jurisdiction to consider the issues relating to the maximum discharge from the power boilers and opacity that were raised by Canfor in its submissions. These issues are beyond the scope of this hearing because these issues involve prior permit conditions that were not amended by the Assistant Manager.

Next, the Panel will consider whether the above-noted amendments are within the jurisdiction of the Assistant Manager. Each amendment will be dealt with separately, considering the matters raised by the Parties, whether the specific amendment is in conflict with the *Amended Regulation*, and whether the amendment is reasonable under the circumstances.

Upgrading of Works

With respect to continuous controlled fuel feed, the Panel notes that the *Amended Regulation* specifies that both Canfor and Houston are required to upgrade the burner as follows:

> Burner upgrade to continuous feed and residue diversion to allow burner shut down for a period of up to 5 operating days.

However, the Panel accepts the evidence of the Respondent that the permit amendments go beyond what is specified in the *Amended Regulation* by allowing a maximum of one start-up and shutdown per week and optimization of burner temperature for clean burning of wood residues. Therefore, this amendment supplements and is not in conflict with the *Amended Regulation*.

Similarly, the Panel accepts the evidence of the Respondent that the upgrades required by the permit amendments also include the ability to provide supplementary fuel as needed to cover shift changes, breakdowns, meal breaks and periods of extreme weather when regular fuel feed rate is inadequate to sustain optimum burning conditions, and therefore, finds that these additional permit provisions also go beyond and do not conflict with the *Amended Regulation*. The Panel notes that the *Amended Regulation* does not specify any requirements with respect to supplementary fuel.

With respect to the jurisdictional matter, Canfor submits that that these amendments were not made for the protection of the environment, but rather to raise the public profile on the beehive burner issue.

The Panel accepts the evidence of the Respondent and finds that, based on the evidence, the purpose of these particular amendments is to reduce the emission of air contaminants from the beehive burners, and hence, reduce environmental impact. This conclusion is supported by the evidence of Mr. Lowell Johnson and

Mr.Newman It is further supported by the *Revised Jacques Whitford Report* that estimates the emission factor for West Fraser, which has implemented the permit amendments, at one-half the emission factor of the mills of Canfor and Houston.

With respect to episode management, the Panel notes that the evidence of both Mr. Vandergaag and the Assistant Manager indicates that the number of burner temperature fluctuations can be reduced by limiting burner start-up to once per week and having a continuous fuel feed from storage. Through "episode management," operation of the burner in meteorological conditions that are unfavourable to the dispersion of emissions from the burner can be avoided.

For these reasons, it is the Panel's view that the reduction of emissions from the beehive burners is clearly within the meaning of the words, "for the protection of the environment," as specified in section 13 of the *Act*.

Houston submits that the amendments to section 6(c) of its permit requiring Houston to shut down its beehive burner for up to 5 consecutive days when directed to do so by the Regional Waste Manager are unreasonable because the conditions under which this would take place and the basis on which the Manager would make the decision have not been specified in the permit. Houston also expressed concern about capital cost investments, given the uncertainty on the phase-out date of the burner that existed at that time.

With respect to Houston's submissions regarding the shutting down of its beehive burner, the Panel notes that this provision has been specified in the *Amended Regulation*. However, the Panel agrees that the conditions under which it can be done are not specified. While this is not fatal, it would be of assistance. The Panel will deal with this further below.

Therefore, the Panel finds that the Assistant Manager has the jurisdiction to amend the permits with respect to U*pgrading of Works*, and that these amendments are reasonable under the circumstances. The Panel will consider the arguments of the Corporate Parties with respect to uncertainty and vagueness in considering whether to vary the Assistant Manager's amendments.

Burner Phase-Out Progress Reporting

The Panel notes that this matter was not dealt with in the *Amended Regulation*.

Both Canfor and Houston submit that the purpose of this amendment is not for the protection of the environment, and hence, is beyond the jurisdiction of the Assistant Manager. Houston, however, also submits that it does not oppose public reporting, and does so on a non-mandatory basis.

In response, the Respondent submits that this provision was to encourage source control, and to educate the public on the importance of protecting air quality.

The Panel finds that it is clearly within the scope of the *Act* and section 13 to address matters related to reporting on operations, and to make such reports

available to the public. Specifically, section 13(4)(j) says that a manager's power to amend a permit includes, "changing or imposing any procedure or requirement that was imposed or could have been imposed under section 10 or 11. Section 10(1)(d) says that a manager may issue a permit to, "require the permittee to conduct studies and to report information specified by the manager in the manner specified by the manager."

In the Panel's view, these are matters, "for the protection of the environment" within the meaning of section 13. The Panel agrees with the testimony of the Assistant Manager that public accountability could result in measures to improve air quality. As well, the Panel notes this amendment could assist in alleviating public concerns by facilitating a structured phase-out of the beehive burners in accordance with the terms of the *Amended Regulation*. Therefore, the Panel finds that the Assistant Manager has the jurisdiction to amend the permits with respect to *Burner Phase-Out Progress Reporting*, and that these amendments are reasonable under the circumstances.

Visual Monitoring of Beehive Burner Emissions

The Panel notes that the installation of a Webcam system has been addressed with respect to Canfor and Houston in Schedule 1 of the *Amended Regulation*, as follows:

> Install webcam to monitor burner only, with viewing access restricted to Manager.

The Panel finds that some of the amendments to Canfor's and Houston's permits with respect to the Webcam system would be in conflict with the *Amended Regulation*, and therefore, in accordance with section 2(2.1), the *Amended Regulation* applies. However, the Panel notes that some of the provisions in the amended permits have not been addressed in the *Amended Regulation*. These provisions are as follows:

> Equipment and location selections shall be to the satisfaction of the Regional Waste Manager. An implementation date will be specified in a separate letter by the Regional Waste Manager.

Whether these non-conflicting provisions should be included in the amendments to the permits will be addressed when the Panel considers whether the permit amendments should be varied.

Environmental Protection Plan

The Panel notes that the issue of an environmental protection plan was not addressed in the *Amended Regulation*.

Canfor submits that the language of this amendment is unclear, and is concerned that it could allow implementation of episode management. In this regard, Canfor

is concerned about the potential negative impact on its ability to do business in B.C. Houston does not make specific submissions on this issue.

The Panel notes the evidence of the Assistant Manager that this amendment was a revision of a previous permit provision respecting environmental impact. The Respondent submits that the purpose of this amendment is to create administrative efficiencies, thus enhancing the Assistant Manager's ability to respond to circumstances that present risk to the environment. The Panel was advised that if the Assistant Manager implemented this provision, it would be an appealable decision.

The Panel finds that the submission of the environmental protection plan would provide action to be implemented by the permittee with respect to monitoring, pollution prevention works and pollution prevention measures. There is insufficient evidence before the Panel to establish that this provision is intended to deal with episode management, and the Panel notes that, if this were the case, it would be a matter that could be appealed to the Board. Given the nature of this amendment, the Panel finds that it is for the protection of the environment, within the meaning of section 13 of the *Act*, and hence, is within the jurisdiction of the Assistant Manager.

Canfor and Houston also raised two additional arguments that apply to all of the amendments. These arguments are that the amendments are discriminatory because they are not broadly imposed on all burner operators in the province, and that the improvements required by the amendments are unfair because of costs and uncertainty resulting from current government policy and regulation regarding the phase-out of the burners.

The Panel finds that each of these permit conditions are for the protection of the environment. The overall objective of the amendments is to reduce emissions from the beehive burners, and to assist the Assistant Manager in regulating the beehive burners to ensure that emissions are reduced, and that the beehive burners are operated in a manner that minimizes environmental impact.

The Panel does not accept the argument that the amendments are discriminatory because they are not imposed on all beehive burners in the province. The Assistant Manager only has the jurisdiction to deal with permits within his region. As well, it is the Panel's view that regional concerns are justifiably taken into account in making decisions with respect to permits and permit amendments. However, when exercising his discretion, the Assistant Manager is required to make decisions by considering the particular facts. Further, the Panel notes, that in amending the *Regulation*, Cabinet supported this approach by not imposing the same requirements on West Fraser that it did on the Corporate Appellants.

Regarding the Corporate Appellants' last argument on the government policy and regulation regarding phase-out, the Panel notes that this argument was submitted before the *Regulation* was amended. Because Cabinet has subsequently, through the *Amended Regulation* extended the phase-out of the beehive burners, it is unnecessary for the Panel to address this argument.

Therefore, the Panel finds that the Assistant Manager's amendments with respect to the environmental protection plan are within the jurisdiction of the Assistant Manager, and are, for the above-noted reasons, reasonable under the circumstances. However, the Panel will review the concerns of Canfor regarding the lack of clarity in the language of the amendment in considering whether the permit amendments should be varied.

In summary, the Panel finds that all of the Assistant Manager's amendments to Canfor's and Houston's permits were within his jurisdiction and were reasonable. The Panel also finds that they are not in conflict with the *Amended Regulation*, except for the amendment requiring the Webcam system. Where that amendment conflicts with the *Amended Regulation*, the *Amended Regulation* applies.

Their appeals of the 1999 permit amendments are, therefore, dismissed, with the exception of the amendment related to the Webcam system.

4. Whether the Panel should vary the Assistant Manager's decision with respect to each permit.

a. Whether there would be a breach of procedural fairness or a denial of natural justice for the Panel to consider and impose any or all of the Individual Appellants' Proposed Amendments or the Respondent's Proposed Amendments.

Background

Because of the number of variables in these appeals, including the changes to the 1995 *Regulation* and hence, the changing submissions of the Parties, it may be helpful to set out the background events chronologically with respect to this issue.

As was previously indicated, in their closing argument the Individual Appellants provided suggested changes to the permit amendments at issue in these appeals. However, after the 1995 *Regulation* was amended on July 14, 2000, the Individual Appellants provided new wording in their August 18, 2000 Proposed Amendments, which states in full:

APPENDIX A - PROPOSED AMENDMENTS TO THE PERMITS

The Appellants seek the following amendments to the terms of the three Permits:

Operational restrictions (to be inserted into the sections of each permit governing the operations of the burners)

1. If the Permittee does not complete the modifications set out in Column 3 of the Wood *Residue Burner and Incinerator Regulation* by July 31, 2001 as required, the Permittee shall immediately cease to operate the beehive burner until such time as the modifications are complete.

2. The beehive burner shall be operated on a continuous feed 24 hour basis, and the Permittee is authorized to have only one start-up and one shut-down of the beehive burner per calendar week.

3. The Permittee shall cease to operate the beehive burner when ordered to by the Regional Waste Manager or his designate for the protection of the environment.

4. If ambient PM_{10} concentration exceeds 50 µg/m^3 running 24 hour mean, as determined using TEOM particulate monitor(s) identified by the Regional Waste Manager or his designate, the Permittee shall cease to use the beehive burner and shall not recommence use of the burner until permitted to by the Regional Waste Manager.

The Permittee shall at all times take all reasonable measures to minimize the amount of woodwaste burned in the beehive burner, including the provision of some or all of that waste to third parties capable of making beneficial use of the same

The Permittee shall cease to use the beehive burner altogether, and shall divert its wood waste to other means of beneficial use and/or disposal by no later than December 31, 2003 or such other date as is determined pursuant to s. 2(6) of the Regulation.

Reporting and phase out requirements (to be inserted into sections 7 of HFP and West Fraser's Permits and section 8 of Canfor's Permit)

7. By no later than February 30, 2001 the Permittee shall provide the Regional Waste Manager with a report detailing the status of the proposed co-generation power production facility (the "Cogen Project"). That report shall be in electronic form and shall contain, in addition to such further information as may be specified in writing by the Regional Waste Manager and in a manner and format suitable for public review:

   a) A detailed explanation of the feasibility assessment of the Cogen Project, including copies of any studies or reports in that regard; and

A clear and unequivocal undertaking, provided by a senior executive of the Permittee, that the Permittee will commit financial and other resources, including its wood waste, to the Cogen Project to ensure that it is constructed and operational by no later than December 31, 2003, or an explanation for the Permittee's decision to not make that commitment of resources.

8. In any event, in order to ensure that that the Permittee continues to make timely progress toward reduction and elimination of the pollution from the burner as required by the *Regulation,* the company is required to submit the following information to the Regional Waste Manager on or before the dates specified, in electronic form and in a format suitable for public review:

   a) By July 31, 2002, preliminary design of works capable of recycling or recapturing energy potential from the woodwaste as required to comply with the closure deadline of December 31, 2003 pursuant to s. 2(2) of the Regulation (the "Closure Deadline").

   b) By November 30, 2002, detailed design of such works.

   c) By January 15, 2003 a written corporate commitment of a senior executive officer of the Permittee to proceed with the installation and construction of, and/or financial contribution to the works in compliance with the Closure Deadline.

   d) By March 31, 2003 copies of legal agreements and delivery schedules for key elements of the works specified above necessary to achieve compliance with the Closure Deadline.

   e) By June 1, 2003 a schedule for the installation of the works specified above.

   f) By December 31, 2003 written confirmation that the works required to comply with the Closure Deadline are functional and that the beehive burner is no longer operating,

which date may be extended by the Regional Waste Manager pursuant to s. 2(6) of the *Wood Residue Burner and Incinerator Regulation.*

9. In the event that the Permittee fails to comply with any of the deadlines imposed above, the authorization contained in this Permit for the operation of the beehive burner shall be suspended, and the burner shall not operate, until such time as the Permittee complies with its obligations under this Permit.

APPENDIX B - DIRECTIONS TO THE REGIONAL WASTE MANAGER

[The Appellants still seek the following direction from the Board to guide the exercise of the Manager's discretion under the Permits to order closures during air quality episodes.]

Pursuant to s. 47(a) of the *Waste Management Act,* the Board directs that the Regional Waste Manager (the "Manager") or his designate shall exercise his authority under Permits PA-01691, PA-05339 and PA-01543, as amended by the Order of this Board made on _____ (the "Permits"), to direct a shut down of the beehive burner in order to prevent or minimize episodes of poor ambient air quality in accordance with the following principles:

1. An "air quality episode" shall be defined as a period of time during which ambient PM_{10}, as measured on a 24 hour average, is exceeding or, in the opinion of the Manager, may exceed 25 $\mu g/m^3$.

2. Where an air quality episode is occurring or in the opinion of the Manager is likely to occur, and where the Manager is of the opinion that the wood smoke from the beehive burner is a significant contributor to ambient PM_{10}, the Manager shall exercise his power under the Permit to order that the beehive burners authorized pursuant to the Permit cease to operate for the duration of the air quality episode.

3. In exercising his powers under the Permit to order the closure of the beehive burners, the Manager shall consider the protection of public health through the maintenance of air quality at or below the level of 25 $\mu g/m^3$ PM_{10} on a 24 hour average as the paramount objective.

On September 7, 2000, during the presentation of closing arguments, the Corporate Appellants made a submission to the Panel, arguing that the presentation of the Individual Appellants' Proposed Amendments after the close of evidence raised new issues that the Corporate Appellants had not been able to address in evidence. Because of this, the Corporate Appellants argued that the Panel should refuse to consider the Individual Appellants' Proposed Amendments. In response, the Panel said that it would be prepared to reopen the hearing of evidence to allow the Corporate Parties the opportunity to call evidence to meet the Individual Appellants' case. The Corporate Parties declined at that time to call any further evidence.

On September 8, 2000, also during the presentation of closing arguments, the Respondent entered as an exhibit, the Respondent's Reply to the Individual Appellants Proposed Amendments, which included his Proposed Amendments. In this document, the Respondent indicated its support for insertion of some terms into Canfor's and Houston's permits, with the modifications indicated in the document. The Respondent's modifications to the Individual Appellants' Proposed Amendments show up in "bold" and are reproduced below:

2. Effective August 1, 2001, to minimize the emission of air contaminants from the beehive burner authorized in Section ____, the Permittee shall employ a

continuous controlled fuel feed system which will allow, ordinarily, a maximum of one start up and one shut down per week and optimization of burner temperature for clean burning of wood residues. Under exceptional circumstances beyond the Permittee's control which prevent this mode of operation or which result in more than one start up and shut down per week, the Permittee shall notify the Regional Waste Manager as soon as possible and shall provide a brief written explanation of any such situation in the monthly monitoring report. The Permittee shall obtain authorization from the Regional Waste Manager prior to restarting the burner in such circumstances.

3. **To minimize burner smoke emissions and to reduce the number of burner operating days, the Permittee shall provide supplementary fuel from a managed stockpile to the beehive burner as needed to cover shift changes, breakdowns, meal breaks, shifts during which less wood residue is produced, periods of extreme cold or wet conditions and normal production conditions when the fuel feed rate from the mill is inadequate to sustain optimum burning conditions.**

4. **The Permittee shall submit a plan to the Regional Waste Manager by February 30, 2001 which outlines how the above requirements will be met.**

5. The Permittee shall **shut down** the beehive burner **in a manner acceptable to the Regional Waste Manager** when ordered to by the Regional Waste Manager or his designate for the protection of the environment.

6. If ambient PM_{10} concentration exceeds 50 $\mu g/m^3$ running 24 hour mean, as determined using TEOM particulate monitor(s) identified by the Regional Waste Manager or his designate, the Permittee shall **shut down** the beehive burner **in a manner acceptable to the Regional Waste Manager** and shall not recommence use of the burner until permitted to by the Regional Waste Manager.

7. **Subject to the requirement to optimize burner performance and minimize emissions,** the Permittee shall at all times take all reasonable measures to minimize the amount of woodwaste burned in the beehive burner, including the provision of some or all of that waste to third parties capable of making beneficial use of the same.

10. In any event, in order to ensure that that the Permittee continues to make timely progress toward reduction and elimination of the **emissions** from the burner as required by the *Regulation,* the company is required to submit the following information to the Regional Waste Manager on or before the dates specified, in electronic form and in a format suitable for public review:

    a) By July 31, 2002, preliminary design of works capable of recycling or recapturing energy **and/or other value-added** potential **(e.g. production of ethanol, charcoal, fibreboard, barkboard, bio-oil, phenolic resins or other useful products)** from the woodwaste as required to comply with the closure deadline of December 31, 2003 pursuant to s. 2(2) of the Regulation (the "Closure Deadline").

DIRECTIONS TO THE REGIONAL WASTE MANAGER

2. Where an air quality episode is occurring or in the opinion of the Manager is likely to occur, and where the Manager is of the opinion that the wood smoke from the beehive burner is a significant contributor to ambient PM 10 **and shutdown of the burner would have a net beneficial effect on air quality**, the Manager shall exercise his power under the Permit to order that the beehive burner cease to operate for the duration of the air quality episode.

3. In exercising his powers under the Permit to order the closure of the beehive burners, the Manager shall consider the protection of public health through the maintenance of air quality at or below the level of 25 $\mu g/m^3$ PM 10 on a 24-hour average as the paramount objective.

Additional Permit Modifications Requested by the Respondent:

1. **Opacity limit specification.... simplify and clarify as follows:**

   "Discharge smoke opacity shall not exceed 20% under normal operating conditions and shall not exceed 40% at any time. Abnormal conditions shall be reported to the Regional Waste Manager in accordance with Section 3 of this permit. For fuel feed shutdowns of more than 1/2 hour, a variance from the above requirement to a maximum opacity of 40% is permitted. The maximum duration of this variance is 1 hour for shutdowns of more than 4 hours and 1/2 hour for all other shutdowns."

2. **A continuous emissions monitoring system consisting of a video camera and computer system (webcam) shall be installed to the satisfaction of the Regional Waste Manager by _____ (within 60 days of the Board's decision).**

3. **Install $PM_{2.5}$ (TEOM) monitors in Houston and in Smithers adjacent to existing PM_{10} monitors by _____ (suggest 3 months from date of Board's decision).**

West Fraser's Permit

With respect to West Fraser Permit (PA 1691), considering the Permittee's history of good cooperation with Ministry pollution prevention efforts in the Bulkley Valley airshed, and in light of the adequacy of the most recent amendment issued in December 1999, we see no need for further permit amendments with the exception of the requirement for a $PM_{2.5}$ TEOM installation on a similar cost-shared basis as applies for the PM_{10} TEOM in Smithers. Other permittees in the Smithers area have yet to be advised of this forthcoming requirement.

In response, the Corporate Appellants argue that it would be a breach of procedural fairness for the Panel to consider the Respondent's Proposed Amendments. The Individual Appellants submit that the Panel should include the Individual Appellants' Proposed Amendments in all three permits, and in the alternative, support the proposed amendments put forward by the Respondent.

At the hearing, after considering the differences between the Individual Appellants' Proposed Amendments and the Respondent's Proposed Amendments, and deciding that the differences were not substantial, the Panel ruled that the Corporate Appellants, having waived their rights to call evidence in response to the Individual Appellants' Proposed Amendments, had waived their rights to call further evidence with respect to the Respondent's terms. However, the Panel further ruled that the Corporate Appellants would be provided an opportunity to file written submissions in respect of the Respondent's Proposed Amendments. Written arguments were provided by all the Parties on this issue.

Canfor's Submissions

Canfor submits that the Panel should not impose the terms in the Respondent's Proposed Amendments because the imposition would give rise to a denial of procedural and substantive fairness.

Canfor submits that the law requires that the issues in dispute between the parties be properly identified prior to the commencement of any hearing. It submits that such defining of the issues is dealt with through the Notices of Appeal and through the Statement of Points. Canfor further submits that without clear identification of the issues in dispute, the fundamental rights of the parties to know and be in a position to meet the case against them are in jeopardy and each party is at risk of being ambushed. In support of its argument, the Panel was referred to a decision of the B.C. Supreme Court, *Solicitor* v. *Law Society of British Columbia* (1995), 128 D.L.R. (4th) 562 @ 570 (hereinafter "*Solicitor*") as authority for the proposition that in administrative proceedings, it is a violation of procedural fairness where particulars of the appeal are not disclosed in sufficient time to allow the party to meet its case, and where new matters and evidence are raised in the proceedings after a party has closed his or her case.

Canfor also submits that where a proposed amendment introduced at the close of a case raises new issues for the opposing party and the opposing party's right to meet those new issues in evidence or cross-examination is effectively curtailed, such amendment will not be permitted. The Panel was referred to the decision in *MacDonald Construction Company* v. *Ross* (1980), 17. C.P.C. 142 (P.E.I.S.C.)(hereinafter *MacDonald Construction*), for the application of this principle in the civil context.

The Panel was also referred to a decision of the B.C. Supreme Court, *Nanaimo, Duncan and District Labour Council* v. *British Columbia (Environmental Appeal Board*), [1983] B.C.J. No. 729 (hereinafter *Nanaimo*) as authority for the proposition that the failure of an administrative tribunal to adjourn a hearing for an adequate amount of time to allow the parties to deal with new issues which are raised during a hearing amounts to an excess of jurisdiction by the tribunal which may result in the quashing of the tribunal's decision.

Canfor submits that, in this case, the Respondent consistently sought to uphold the 1999 amendments appealed by the Corporate Appellants and the Individual Appellants. Canfor submits that the Respondent did not lead or rely on any evidence with respect to the Respondent's Proposed Amendments.

Canfor further submits that the Individual Appellants raised the prospect of new or more stringent terms after all parties had filed their closing arguments, and the Respondent waited until after all other parties had completed their closing arguments. Canfor submits that the Respondent is attempting to change Canfor's case by changing the substance of its appeal and the relief it is seeking through the introduction of the Respondent's Proposed Amendments, which raise new issues and call for new evidence, and are much more stringent than the 1999 amendments.

As well, Canfor asks the Panel to note that it did not have the opportunity to lead evidence regarding the Respondent's Proposed Amendments. As well, although Canfor cross-examined witnesses on the January 1999 amendments, it did not have an opportunity to cross-examine any witnesses on the Respondent's proposal.

Canfor refers the Panel to section 13(3) of the *Act* in support of its arguments. This section provides as follows:

> **13** (3) If a permit or approval is subject to conditions imposed pursuant to a decision made in an appeal to the appeal board under Part 7, those conditions must not be amended except
>
> (a) by the appeal board, and
>
> (b) after the appeal board has given the parties an opportunity to be heard on the question of whether the conditions should be amended.

Accordingly, Canfor submits that the Panel is statute-barred from imposing permit terms which the permittee has not had a proper opportunity to speak to and would be acting in excess of its jurisdiction if it were to impose such terms without allowing the parties to be heard with respect to those specific terms.

The Panel notes that Canfor also opposed both Parties' Proposed Amendments on the basis that they are not required for the protection of the environment, that they are discriminatory, that they are vague and uncertain and that they fail to recognize and conflict with the terms of the *Amended Regulation*.

Houston's Submissions

Houston submits that, if the Panel adopts the relief, or a variation thereof, of the Respondent's Proposed Amendments, the Panel would be acting unfairly and in breach of the rules of natural justice. It argues that the Respondent is attempting to use these appeals to add further terms into the permit that were not included in the 1999 permit amendments, and were not in issue throughout the hearing of these appeals. It submits that any attempt by the Panel to implement the relief now being sought by the Respondent would have the effect of depriving Houston of its right to appeal from the amendments proposed by the Respondent and inserted into its permit by the Panel. Such action by the Panel would constitute a breach of the rules of natural justice. Houston submits that, if the Respondent wanted to introduce new amendment terms to implement the requirements of the *Amended Regulation*, the Respondent ought to have issued a further amended permit to Houston, after Cabinet passed the *Amended Regulation*.

Houston submits that, throughout the hearing, the Respondent maintained the position that the 1999 amendments were reasonable and for the protection of the environment, and that the Corporate Appellants' and the Individual Appellants' appeals ought to be dismissed. The Respondent maintained this position in its final argument, until September 8, 2000.

Houston also argues that the Respondent's Proposed Amendments raise new issues that were not the subject of evidence at the hearing, are not for the protection of the environment, punish Houston and conflict with the *Amended Regulation*.

In summary, Houston asks that the relief sought by the Respondent, as set out in the Respondent's Proposed Amendments, or a variation, should be refused.

West Fraser's Submissions

West Fraser makes similar arguments to the above. West Fraser further notes that the Respondent states in his Proposed Amendments as follows:

> With respect to West Fraser Permit (PA 1691), considering the Permittee's history of good cooperation with Ministry pollution prevention efforts in the Bulkley Valley airshed, and in light of the adequacy of the most recent amendment issued in December 1999, *we see no need for further permit amendments with the exception of the requirement for a* $PM_{2.5}$ *TEOM installation* on a similar cost-shared basis as applies for the PM_{10} TEOM in Smithers. Other permittees in the Smithers area have yet to be advised of this forthcoming requirement. [emphasis added]

As well, West Fraser asks the Panel to note that, as a Third Party, it did not elect to participate as fully in the hearings as it would have, had it been an appellant. However, had West Fraser been aware of the potential for the Proposed Amendments, its examination of Mr. Vandergaag would likely have been more extensive. West Fraser may also have elected to appeal those terms, had it been aware of them.

West Fraser also opposes the Respondent's Proposed Amendments on the grounds that it would ignore the cooperative approach of West Fraser, and the Proposed Amendments are not required or necessary for the protection of the environment, they are vague and uncertain and thus give rise to a number of practical and enforcement problems, and they are in conflict with the *Amended Regulation*.

Should the Panel decide that the Respondent's Proposed Amendments are reasonable, West Fraser submits that the Panel should accept the Respondent's request not to impose them upon West Fraser (with the exception of the requirement for a $PM_{2.5}$ monitor).

Individual Appellants' Submissions

The Individual Appellants submit that there has been no deprivation of natural justice in these appeals. They submit that the issues addressed in their Proposed Amendments have been fully engaged throughout the course of these appeals, and the companies have been afforded a full opportunity to present and cross-examine on all evidence relevant to their proposals . As well, the Individual Appellants submit that the companies are barred from now raising these arguments because they waived the opportunity to call further evidence in response to their Proposed Amendments.

As well, the Individual Appellants submit that the companies' decision to waive any right to call further evidence in response to their Proposed Amendments applies equally to the Respondent's revisions to those amendments. They submit that the two sets of proposed amendments are substantively identical in purpose and effect, and do not raise evidentiary or procedural concerns, and that this was acknowledged by counsel for Canfor. They note that the issues that could have been the subject of cross-examination identified by Houston and Canfor arise from the Individual Appellants' Proposed Amendments, which Houston and Canfor decided did not require further evidence. Having waived their rights to call new evidence, the companies are precluded from now arguing that they have been deprived of natural justice. They further argue that this same argument applies to West Fraser, despite its status as a Third Party.

With respect to the substantive aspects of both proposed amendments, the Individual Appellants argue that the issues raised in the Individual Appellants' Proposed Amendments have been engaged throughout these appeals. They submit that the Proposed Amendments, are based on a record of evidence accumulated over 11 days of thorough examination and cross-examination. The factual issues upon which the amendments are founded were raised and addressed in the course of the appeals and therefore apply equally to the Respondent's Proposed Amendments.

In response to the decisions in *Solicitor* and *MacDonald Construction*, the Individual Appellants submit that the finding of a breach of procedural fairness depended on a failure to comply with the procedural obligations imposed by specific rules, which have no application to this situation. They also submit that the decision in *Nanaimo* is of limited assistance because the decision is unclear.

The Individual Appellants also note that the Respondent's Proposed Amendments is just one factor that the Board must consider in arriving at its decision on these appeals.

In conclusion, the Individual Appellants submit that the Panel has the jurisdiction to consider both the Individual Appellants' amendments and the modifications made to them by the Respondent.

B.C. Lung's Submissions

B.C. Lung adopts and relies upon the submissions of the Individual Appellants.

Respondent's Submissions

The Respondent submits that the Panel's consideration of the August 18 proposals of the Individual Appellants and his September 7th Proposed Amendments would not constitute a breach of the rules of procedural or substantive fairness for several reasons. In summary, these reasons are:

- The Proposed Amendments do not substantially change the original position of the Assistant Manager, but simply include refinements to reflect the

requirements of the intervening *2000 Regulation*.. Furthermore, the Respondent takes the position that his revisions are fully supported by the evidence already on the record and this is not a case of asking the Panel to consider new evidence during final argument.

- The Corporate Appellants were given the same opportunity as the Respondent to speak to the Individual Appellants' Proposed Amendments, and were further provided the opportunity by the Panel to re-open the evidentiary portion of the hearing relating to them, and the Respondent's suggested changes. The Corporate Appellants declined this opportunity and are now estopped from alleging any breach of procedural fairness in relation to the Panel's consideration of these matters.

- The Respondent has not proposed any changes to the West Fraser permit for the reasons provided in its closing argument, including that the original amendments had already been implemented at West Fraser's mill in Smithers. With respect to the imposition of the $PM_{2.5}$ monitoring requirement, West Fraser agreed at the oral hearing to undertake $PM_{2.5}$ monitoring. It is the Respondent's submission that that should conclude the disposition of the appeal as it relates to West Fraser.

- The Respondent's Proposed Amendments have a strong co-relation to the 1999 permit amendments with the exception of the incorporation of episode management as permit conditions rather than as a freestanding document (as was proposed by the 1999 amendments). The Assistant Manager submits that including episode management as a permit condition would achieve a more comprehensive resolution of matters under appeal.

- The Respondent submits that the addition of $PM_{2.5}$ monitoring arises as a result of medical evidence lead at the hearing and the Assistant Manager's recognition that the Corporate Appellants' beehive burners are likely to remain operational for a number of years. The Respondent asks the Panel to note that this new requirement relating to $PM_{2.5}$ monitoring has been accepted by West Fraser.

- The proposed revisions meet the judicial standards adopted by Canfor, in that the provisions are consistent with the 1999 amendments, and secondly, are consistent with the evidence of the Respondent's witnesses, which was to the effect that emissions from the beehive burners of the Appellant should be curtailed to the extent possible to preserve air quality within the Bulkley Valley.

- In response to Canfor's reference to *MacDonald Construction*, the Respondent submits that even if the Corporate Appellants were able to establish prejudice, that can and has been compensated for by the ample opportunity provided by the Panel to allow the introduction of new evidence.

- The Respondent says that the Panel is not "statute barred" from imposing additional permit conditions as alleged by Canfor. He submits that under

section 47 of the *Act*, the Board's powers on appeal include the power to make any decision that the person whose decision is appealed could have made and that it considers appropriate in the circumstances.

- The Respondent submits that the present circumstance is not a case of the Respondent leading additional evidence, but simply modifying the relief sought by the Individual Appellants to reflect intervening changes in the law. Any perceived lack of notice is fully explained by the timing of the legislative changes, which occurred after the submission of the Statement of Points, but prior to final oral submissions. Even if the Corporate Appellants' submissions had merit, any procedural deficiencies have been fully addressed by the Panel's offer to reopen the evidentiary portion of the hearing, which was declined by the Corporate Appellants.

Discussion and Analysis

Having considered the facts with respect to this issue, the evidence before it and the submissions on this matter, the Panel finds that there would not be a breach of procedural fairness or a denial of natural justice for the Panel to consider and impose any or all of the Individual Appellants' Proposed Amendments. The Panel notes that all Parties have had adequate notice of the Individual Appellants' Proposed Amendments which were provided on August 18, 2000. As well, the Panel offered to re-open the hearing to allow the Corporate Appellants and the Third Party the opportunity to call evidence to address issues of concern to them. The Corporate Appellants and the Third Party declined to call any further evidence. Therefore, the Panel finds that there was adequate notice and an opportunity to be heard.

The Panel also finds that Canfor's argument regarding section 13(3) of the *Act* does not apply to this case. Section 13(3) of the *Act* deals with the situation under which amendments made by the Board may be further amended.

With respect to the Respondent's Proposed Amendments, the Panel is not convinced that there would be a breach of procedural fairness or a denial of natural justice for the Panel to consider and impose any or all of the Respondent's Proposed Amendments, given the similarity to the Individual Appellants' Proposed Amendments. However, there are some differences in the two sets of Proposed Amendments and the Panel acknowledges that the Respondent's Proposed Amendments came at a very late date in the hearing process.

In considering this matter, the Panel notes that it is not uncommon at an environmental appeal hearing for one or more of the Parties to provide suggestions to the Panel on how the outstanding issues can be resolved, after they have had an opportunity to hear all of the evidence. The Panel is of the view that this practice should be encouraged and can be of great assistance to a Panel, particularly where there is lengthy evidence and the issues are complex, as they are in this case. However, fairness must not be compromised.

Because the Respondent's Proposed Amendments were first provided to the Parties at the close of the hearing, and taking into consideration the relative concerns expressed by Canfor and Houston, the Panel is of the view that the Respondent's Proposed Amendments should not be considered. Further, the Panel does not have sufficient information on the actual evidence that would be called by the Parties, should the hearing have been re-opened. As well, the Panel is of the view that there is sufficient evidence before it on which to base its decision, without considering those proposals.

Therefore, the Panel will consider the 1999 amendments by the Assistant Manager, the evidence presented at the hearing, and the Individual Appellants' Proposed Amendments in responding to the relief requested by the Individual Appellants, under the next issue. The Panel will not consider the Respondent's Proposed Amendments.

b. Whether it is reasonable under the circumstances for the Panel to grant the Individual Appellants' remedy by varying the Assistant Manager's amendments to the permits.

Individual Appellants' and B.C. Lung's Submissions

The Individual Appellants submit that the Assistant Manager (and this Panel) has the power to insert terms, as set out in the Individual Appellants' Proposed Amendments, in each of the permits of the Corporate Parties to achieve the elimination of the emissions from the beehive burners, and should exercise that power. Further, the Individual Appellants submit that, because the pollution produced by the beehive burners makes the air in the Bulkley Valley unhealthy, the Corporate Parties should be required to implement concrete and final steps to eliminate the pollution from their beehive burners, and the permits should be amended to achieve that goal.

B.C. Lung supports the detailed amendments proposed by the Individual Appellants, as an alternative to the Panel amending the permits to require the elimination of the burners.

Respondent's Submissions

The Respondent asks that the Assistant Manager's amendments be upheld by the Panel.

Corporate Parties' Submissions

The Corporate Appellants and the Third Party argued that the Panel should disregard the Individual Appellants' Proposed Amendments for several other reasons. In summary, these arguments are that they are not required for the protection of the environment, are discriminatory, vague and uncertain, are unenforceable and are in conflict with the *Amended Regulation.* West Fraser also submits that these proposed amendments are inconsistent with the *Rebate Regulation*.

Discussion and Analysis

Value-added Solution

The Panel heard a great deal of evidence about the operation of beehive burners in the Bulkley Valley, and concerns about adverse health impacts resulting from exposure to particulate matter from the beehive burners. Throughout the hearing, and in closing submissions, matters were raised by the Parties with respect to efforts at finding a long-term solution for the disposal of wood residue that would provide value-added benefits to the communities of the Bulkley Valley.

Generally, the Parties agreed that, the most desirable solution would be a value-added solution for the disposal of wood residue from the sawmills. The Parties also agreed that, at present, the most viable value-added solution is co-generation, a process by which wood residue is burned and electricity is generated as a result.

Generally, the Parties also agreed that although incineration is one solution, it is not the solution preferred by the communities of the Bulkley Valley, the provincial government, and the Parties. This view was supported in the evidence of Tom Euverman, the Mayor of the District of Houston, who testified that under almost no conditions would the District of Houston agree to incineration. The Town of Smithers also supported the initiatives of the Parties.

As well, additional evidence was provided to the Panel regarding alternatives to the disposal of wood residue generated by sawmills in B.C. in general, and the Bulkley Valley in particular. The Panel was referred to the first Bridges' Report, *Wood Residue Generating Projects in British Columbia: Opportunities for Strategic Initiatives*, which was released in 1993. A second Bridges' Report, dated October 1997 was commissioned by the Ministry and other provincial agencies to examine strategies for utilising wood residue generated by sawmills in B.C. This latter Report concluded that co-generation was the best option for the disposal of wood residue.

Lowell Johnson, for Houston, submits that a feasibility study on the viability of co-generation in the Bulkley Valley, funded by Houston, Canfor, West Fraser, the Northern Development Commissioner's office and B.C. Hydro is currently being conducted, and the results will be released in early autumn, 2000.

In its written submission provided on June 15, 2000, Houston submits that if B.C. Hydro's feasibility study indicates that co-generation is a viable option and Cabinet decides to extend the deadline for the shut-down of Houston's beehive burner, Houston will negotiate with the Assistant Manager for acceptable modifications to its beehive burner that will address the issues of continuous feed and episode management pending the completion of the co-generation plant. As well, Houston indicated to the Panel that it was seeking an Order from the Board that would provide the Assistant Manager and Houston with the flexibility to deal with the uncertain outcomes of the feasibility study on co-generation and Cabinet's decision on the shut-down of Houston's beehive burner.

The Corporate Parties also gave evidence regarding the individual initiatives that had been undertaken in an attempt to find a value-added solution for the disposal of wood residue. As well, evidence was provided about the consultation processes that had taken place with regard to such initiatives.

In particular, Houston submits that it has diligently searched for a solution for the disposal of its wood residue that will bring value-added benefits to the residents and the communities of the Bulkley Valley. It asks the Panel to give B.C. Hydro, Houston and the other participants in the co-generation project the opportunity to fully investigate the viability of this long-term solution.

As part of the background of this hearing, the Parties gave evidence about the context in which this appeal has taken place, namely the attempts of the government to eliminate beehive burners in B.C. As Houston submits, since the early 1990's the Ministry's policy has been to eliminate the beehive burning of wood residue from the sawmill industry and to phase-out the Tier 1 beehive burners in B.C. The Panel notes that all three of the beehive burners that are the subject of these appeals are Tier 1 beehive burners.

The Panel acknowledges that considerable efforts to find alternative solutions to dispose of the wood residue have been made by all of the Parties, and that efforts were ongoing at the time of the hearing. The Panel also notes that all of the Parties ultimately support implementation of a value-added solution that will benefit the community and industry. For reasons that are beyond the scope of this hearing, the attempts to find a value-added solution, or an alternative solution that the Parties can agree on, have, unfortunately, not been successful. Several of the Parties have suggested that more time is needed to allow exploration of the co-generation model in conjunction with BC Hydro. The Panel will take these submissions into account in making its decision on whether it is reasonable to grant the remedy sought by the Individual Appellants.

Based on the evidence before it, and the Panel's previous findings, the Panel finds that, as long as the beehive burners continue to operate, as they are legally entitled to do until December 2003/2004, it is prudent to take steps to eliminate and/or minimize particulate emissions from those burners, wherever possible. With this objective in mind, the Panel has undertaken a review of the Individual Appellants' Proposed Amendments to determine whether the proposals could assist in accomplishing the elimination and/or minimization of particulate emissions from the beehive burners in a manner that is consistent with the *Amended Regulation*. At the same time, the Panel is of the view that, as part of this review, the concerns of the Corporate Parties regarding vagueness and the need for clarity and certainty should be addressed, where possible.

With respect to West Fraser, the Panel notes that the Individual Appellants have requested that its Proposed Amendments be included in West Fraser's permit. The Panel also notes that this is contrary to the position of the Assistant Manager and that Cabinet, in the *Amended Regulation*, chose not to include additional operating conditions with respect to West Fraser. Further, there was evidence before the

Panel respecting the cooperation that West Fraser had demonstrated in minimizing emissions from its beehive burner. The Panel finds that there is insufficient evidence before it on specific amendments that should be included in West Fraser's permit, except with respect to a $PM_{2.5}$ monitor. For these reasons, the Panel dismisses the Individual Appellants' appeal with respect to West Fraser.

Next, the Panel will consider the Individual Appellants' Proposed Amendments under the headings that the Assistant Manager's amendments were dealt with. To simplify things, the Panel has identified any changes or differences between the Individual Appellants' Proposed Amendments and the Assistant Manager's amendments.

Upgrading of Works

In summary, the Individual Appellants have requested that the following provisions be added with respect to the *Upgrading of Works*:

- The continuous feed operation should be on a 24 hour basis;
- The start-up and shut down should be per "calendar" week, rather than "week";
- The permittee shall take all reasonable measures to minimize the amount of woodwaste burned in the beehive burner, including the provision of some or all of the waste to third parties capable of making beneficial use of the same;
- If the permittee does not complete the modifications set out in column 3 of the *Amended Regulation* by July 31, 2001 as required, the permittee shall immediately cease to operate the beehive burner until the modifications are complete;
- The permittee shall cease to operate the beehive burner when ordered to do so by the Regional Waste Manager or his designate for the protection of the environment; and
- If the ambient PM_{10} concentration exceeds 50 $\mu g/m^3$ running 24 hour mean, as determined using TEOM particulate monitor(s) identified by the Regional Waste Manager or his designate, the permittee shall cease to use the beehive burner and shall not recommence use of the burner until permitted to do so by the Regional Waste Manager.

In order to eliminate and/or minimize the emissions from the beehive burners, in a manner that is consistent with the *Amended Regulation* and the amendments of the Assistant Manager, the Panel finds that the amendments with respect to the burner system and operational procedures should include the following amendments proposed by the Individual Appellants, as modified by the Panel:

- The permittee shall take all reasonable measures to minimize the amount of woodwaste burned in the beehive burner, including the provision of some or all of the waste to third parties capable of making beneficial use of the same;

- If the ambient PM_{10} concentration exceeds 50 $\mu g/m^3$ running 24 hour mean, as determined using TEOM particulate monitor(s) identified by the Regional Waste Manager or his designate, the permittee shall cease to operate the beehive burner for up to 5 consecutive days of normal production when so directed by the Regional Waste Manager.

It is unclear to the Panel why it is necessary to specify "calendar" week, or why continuous feed should be on a 24-hour basis. Further, there is no need to impose permit requirements authorizing the Regional Waste Manager to shut-down the operations for the protection of the environment since he already has those powers under section 31 of the *Act*.

The Panel finds that all other amendments of the Assistant Manager related to upgrading of works, including the continuous controlled fuel feed system, supplementary fuel and submission of a plan on how and when the requirements shall be met, should be maintained in Canfor's and Houston's permits. The Panel finds that the date for submission of the plan needs to be changed, at the discretion of the Assistant Manager.

However, in order to address Houston's concerns regarding "episode management," the Panel also directs the Assistant Manager to consult with Houston (and Canfor and the other Parties) to discuss Houston's specific concerns, and following such consultations, consider and make any further amendments to those provisions, at the discretion of the Assistant Manager, to provide greater certainty with respect to the conditions under which the Regional Waste Manager will exercise his discretion to order the shut-down of the beehive burner.

Burner Phase-Out Progress Reporting

In summary, the Individual Appellants have requested that the following provisions be added with respect to the *Burner Phase-Out Progress Reporting*:

- The requirement for provision of a report by February 30, 2001 to the Regional Waste Manager detailing the status of the proposed co-generation power production facility (the "Cogen Project"). The form of the report shall be electronic, shall contain any additional information specified in writing by the Regional Waste Manager and be provided in a manner and format suitable for public review. In particular the report shall contain

  (a) a detailed explanation of the feasibility assessment of the Cogen Project, including copies of any studies or reports in that regard; and

  (b) a clear and unequivocal undertaking, provided by a senior executive of the permittee, that the Permittee will commit financial and other resources, including its wood waste, to the Cogen Project to ensure that it is constructed and operational by no later than December 31, 2003, or an explanation for the permittee's decision not to make that commitment of resources.

- The requirement for submission of information to the Regional Waste Manager on or before the specified dates, in electronic form and in a format suitable for public review, as follows:

  (a) by July 31, 2002, a preliminary design of works capable of recycling or recapturing energy potential from the woodwaste as required to comply with the closure deadline of December 31, 2003 pursuant to section 2(2) of the *Amended Regulation* (the "closure deadline");

  (b) by November 30, 2002, a detailed design of such works;

  (c) by January 15, 2003, a written corporate commitment of a senior executive officer of the permittee to proceed with the installation and construction of, and/or financial contribution to the works in compliance with the closure deadline;

  (d) by March 31, 2003, copies of legal agreements and delivery schedules for key elements of the works specified above, that are necessary to achieve compliance with the closure deadline;

  (e) by June 1, 2003, a schedule for the installation of the works specified above;

  (f) by December 31, 2003, written confirmation that the works required to comply with the closure deadline are functional and that the beehive burner is no longer operating, which date may be extended by the Regional Waste Manager pursuant to section 2(6) of the *Amended Regulation*.

- A requirement that if the permittee fails to comply with any of the deadlines imposed above, the authorization contained in the Permit for the operation of the beehive burner shall be suspended, and the burner shall not operate, until such time as the permittee complies with its obligations under the permit.

In deciding whether to impose the proposals of the Individual Appellants with respect to *Burner Phase-Out Progress Reporting*, the Panel has considered the submissions of the Parties with respect to the attempts to find a solution for the disposal of the wood residue that would provide value-added benefits to the communities of the Bulkley Valley. In particular, Houston asked the Panel to provide the participants in the co-generation project the opportunity to fully investigate the viability of the project. The Panel has already noted the considerable efforts made by all of the Parties, and that these efforts are ongoing. In order to provide some assurances to the residents of the Bulkley Valley that these efforts will continue in the future, the Panel finds that the amendments with respect to *Burner Phase-Out Progress Reporting* should include the following amendments proposed by the Individual Appellants, as modified by the Panel:

- A requirement for provision of a report to the Regional Waste Manager by a date to be specified by the Regional Waste Manager detailing the status of the proposed co-generation power production facility. The form of the report shall be electronic, shall contain any additional information specified in writing by the

Regional Waste Manager and be provided in a manner and format suitable for public review. In particular, the report shall contain

(a) a feasibility assessment of the proposed co-generation facility, including copies of any studies or reports in that regard; and

(b) a statement on whether the permittee intends to proceed with the proposed co-generation facility, and if so, whether the construction of the facility will be completed and will be operational by no later than December 31, 2003, or December 31, 2004 where the requirements of section 2(6) have been met.

- The requirement for provision of information to the Regional Waste Manager, by the dates specified by the Regional Waste Manager, in electronic form and in a format suitable for public review, and containing any additional information specified in writing by the Regional Waste Manager, with respect to:

  (a) a preliminary design of works capable of recycling or recapturing energy potential from the woodwaste, in order to comply with the closure deadline of December 31, 2003 pursuant to section 2(2) of the *Amended Regulation* or December 31, 2004, pursuant to section 2(6) of the *Amended Regulation* (the "closure deadline");

  (b) a detailed design of such works;

  (c) a report from the permittee outlining the intent of the permittee to proceed with the installation and construction of the works in compliance with the closure deadline; and

  (d) a schedule for the installation of the works specified above.

Visual Monitoring of Beehive Burner Emissions/Environmental Protection Plan

Because the Individual Appellants did not provide any proposed amendments with respect to *Visual Monitoring of Beehive Burner Emissions* and the *Environmental Protection Plan*, the Panel does not intend to address this issue.

With respect to the permit amendments regarding the *Environmental Protection Plan*, the Panel finds that the concerns of Canfor regarding the vagueness of these provisions should be addressed. Therefore, the Panel is sending this provision back to the Assistant Manager with directions to consult with Canfor, Houston and the other Parties, prior to specifying what terms and conditions on *Environmental Protection Plans* will be included in the permits.

The Panel has also considered the Corporate Parties' arguments with respect to the Individual Appellants' Proposed Amendments, namely that they are not required for the protection of the environment, are discriminatory, are unenforceable and are in conflict with the *Amended Regulation*. Applying the same reasoning that it did when considering these issues in connection with the Assistant Manager's

amendments, the Panel does not accept the arguments, except where otherwise noted above.

5. Whether the terms of the permits are a violation of section 15(1) of the *Charter*.

Individual Appellants' and B.C. Lung's Submissions

The Individual Appellants submit that the permits of the Corporate Parties discriminate against asthmatics and the elderly, in violation of their equality rights under section 15(1) of the *Charter*. Section 15(1) states:

> **15 (1)** Every individual is equal before and under the law and has the right to the equal protection and equal benefit of the law without discrimination and, in particular, without discrimination based on race, national or ethnic origin, colour, religion, sex, age or mental or physical disability.

The Individual Appellants submit that the permits of the Corporate Parties authorize the production of pollution that unfairly and unlawfully affects the health of sensitive members of the general population. Health problems are created for the disabled (asthmatics) and the elderly, who suffer adverse effects at pollution levels that do not necessarily affect other members of the community. The permits, therefore, deny these sub-groups the benefit of the equal protection of the law, and in so doing violate section 15(1) of the *Charter*.

In summary, the Individual Appellants submit that there are three reasons for the Panel to base its decision on section 15(1) of the *Charter*:

(i) The seriousness of the health harm occasioned by PM_{10} in the Bulkley Valley is not just "bad", "serious", or "unacceptable", but outright discriminatory;

(ii) As part of the Constitution, the *Charter* is the highest law, higher than the *Act*, which must conform to it. An order under section 15 of the *Charter* will be a useful direction to waste managers that they must also respect the *Charter* when applying the *Waste Management Act*…; and

(iii) Because a breach of the Constitution is a very serious violation of law, an order under the *Charter* would illustrate to the Governor-in-Council the severity of the problems that PM_{10} from beehive burners can pose.

In particular, the Individual Appellants submit that because they have established the following three facts, they have established a violation of section 15(1) of the *Charter*:

(a) First, that "Asthma" and "age" are personal characteristics that gain constitutional protection from discrimination;

(b) Second, that the permits authorize the Corporate Parties' beehive burners to contribute significantly to ambient PM_{10} in the Bulkley Valley; and

(c) Third, that this authorization creates ambient conditions that fail to equally protect asthmatics and the elderly, when compared to well-bodied population persons.

The Individual Appellants submit that once the Ministry intends to protect the public health, and issues permits to do so, then it must be prepared to protect the health of the elderly and the disabled. Once the permits include health protective measures (such as opacity limits, continuous fuel feed and episode management), those measures must be sufficiently stringent that they protect the health of the asthmatic and the elderly, not just the mainstream population.

Having established these three facts, the Individual Appellants submit that the burden then shifts to the Crown and the Corporate Parties to justify the violation under section 1 of the *Charter.*

B.C. Lung adopted and relied on the submissions filed by the Individual Appellants.

Corporate Parties' Submission

Houston provided detailed submissions in response to the Individual Appellants' *Charter* argument. In summary, Houston's argument was as follows:

- Because the Individual Appellants' failed to adduce evidence of "age", none of the Individual Appellants has standing to argue that his or her equality rights have been infringed on the ground of "discrimination based on … age";

- Based on the Supreme Court of Canada's decision in *Law v. Canada (Minister of Employment and Immigration)* [1999] 1 S.C.R. 497, Houston submits that a section 15 analysis requires that determination of discrimination claim must be grounded in three broad inquiries: whether the impugned law imposes differential treatment between the claimant and others; whether this differential treatment is based on one or more enumerated or analogous grounds set out in section 15 of the *Charter*; and whether the impugned law has a purpose or effect that is substantially discriminatory;

- The purpose of the section 15 analysis will make clear the inapplicability of the *Charter* to the facts of these appeals;

- The purpose of the section 15 analysis is to determine whether the claimant has suffered discrimination, and that discrimination is not merely differential treatment but rather the infringement of the claimant's human dignity; and

- The Individual Appellants have not demonstrated that they have suffered differential treatment as a result of the issuance of the permits, and they have not alleged or demonstrated that their human dignity has been infringed by the issuance of the permits.

Both Canfor and West Fraser adopt and rely upon the submission of Houston. In addition, West Fraser submits that because the Individual Appellants' claim of adverse health effects on sensitive subgroups of the population of the Bulkley Valley directly related to the operation of the beehive burners has not been proved, there is no basis on which the Individual Appellants can argue that section 15(1) of the *Charter* has been violated.

Respondent's Submissions

The Respondent submits that the Individual Appellants have mischaracterized the nature and scope of the appeal by assuming that the Board has jurisdiction to deal with the permit as a whole rather than with the 1999 decisions of the Assistant Manager.

In the context of the permit amendments, the Respondent submits that the decisions in question will not discriminate against asthmatics and the elderly but will provide increased protection for them by reducing ambient levels of particulate in the Bulkley Valley airshed thereby reducing health impact. Although the Respondent agrees with the submissions of the Individual Appellants that the operation of the beehive burners under the present conditions has a significant impact on particulate levels in the Bulkley Valley airshed, and that asthma and age are personal characteristics that attract constitutional protection from discrimination, the Respondent disagrees that there is discrimination.

In order to establish discrimination in the context of the 1999 decisions, it would be necessary for the Individual Appellants to demonstrate that asthmatics and the elderly are being denied the benefits conferred by the permit amendments. The Respondent submits that the only reasonable conclusion based on the medical evidence is that both asthmatics and the elderly will be advantaged above and beyond the benefits conferred on the average person due to reductions in particulate loading that will result from the permit amendments.

Discussion and Analysis

The Panel agrees with the submissions of the Respondent and Houston (adopted by Canfor and West Fraser) in connection with this issue. First, it finds that the Individual Appellants' argument goes to the permits themselves. As stated earlier, the permits authorizing the beehive burners are beyond the jurisdiction of the Panel. Considering the argument in the context of the decisions, which have been appealed, the Panel finds that the *Charter* argument fails. In order for the Appellants' argument to succeed, the Panel is of the view that the Individual Appellants would have to establish that there is discrimination against the elderly and asthmatics, in that they are denied the benefits resulting from the permit amendments.

Based on the expert medical evidence before it, contrary to the argument of the Individual Appellants, the Panel is satisfied that the elderly and asthmatics will likely benefit more from the reductions in particulate emissions resulting from the amendments than the average person. The Panel, therefore, finds that the

Individual Appellants have failed to establish that any of the Individual Appellants have suffered discrimination, and hence, the Individual Appellants' argument with respect to this issue must fail.

6. Whether costs should be awarded against Canfor with respect to the revisions made to the *Jacques Whitford Report*.

In a letter dated September 13, 2000, to the Board, the Individual Appellants asked the Board to order costs in the amount of $2,187.29 to the Individual Appellants in respect of expert fees. The request for costs was made on the basis of errors in the first *Jacques Whitford Report*. In a letter dated September 29, 2000, to the Board, Canfor agreed to pay these costs, in the interests of resolving this matter without the involvement of the Board.

Based on these submissions, and the commitment of Canfor to pay these costs, the Panel will not deal with this issue further.

DECISIONS

In making this decision, the Panel has carefully considered all the evidence and testimony provided, whether or not specifically reiterated herein.

The appeal by Canfor is dismissed.

The appeal by Houston is dismissed.

The Individual Appellants' appeal against West Fraser's amended permit is dismissed.

The Individual Appellants' appeals against the amended permits of Canfor and Houston are allowed, in part, as follows:

The Panel orders that the this matter be referred back to the Assistant Manager to include the following types of provisions in Canfor's and Houston's permits, with the wording and specific provisions to be determined by the Assistant Manager:

(1) The burner system and operational procedures shall include the following requirements:

   (a) The permittee shall take all reasonable measures to minimize the amount of woodwaste burned in the beehive burner, including the provision of some or all of the waste to third parties capable of making beneficial use of the same;

   (b) If the ambient PM_{10} concentration exceeds 50 $\mu g/m^3$ running 24 hour mean, as determined using TEOM particulate monitor(s) identified by the Regional Waste Manager, the permittee shall cease to operate the beehive burner for up to 5 consecutive days of normal production when so directed by the Regional Waste Manager.

(2) The burner phase-out progress reporting provisions shall include the following requirements:

(a) A requirement for provision of a report to the Regional Waste Manager by a date to be specified by the Regional Waste Manager detailing the status of the proposed co-generation power production facility. The form of the report shall be electronic, shall contain any additional information specified in writing by the Regional Waste Manager and be provided in a manner and format suitable for public review. In particular, the report shall contain

(i) a feasibility assessment of the proposed co-generation facility, including copies of any studies or reports in that regard; and

(ii) a statement on whether the permittee intends to proceed with the proposed co-generation facility, and if so, whether the construction of the facility will be completed and will be operational by no later than December 31, 2003, or December 31, 2004 where the requirements of section 2(6) have been met.

(b) A requirement for provision of information to the Regional Waste Manager, by the dates specified by the Regional Waste Manager, in electronic form and in a format suitable for public review, and containing any additional information specified in writing by the Regional Waste Manager, with respect to:

(i) a preliminary design of works capable of recycling or recapturing energy potential from the woodwaste, in order to comply with the closure deadline of December 31, 2003 pursuant to section 2(2) of the *Amended Regulation* or December 31, 2004, pursuant to section 2(6) of the *Amended Regulation* (the "closure deadline");

(ii) a detailed design of such works;

(iii) a report from the permittee outlining the intent of the permittee to proceed with the installation and construction of the works in compliance with the closure deadline; and

(iv) a schedule for the installation of the works specified above.

In order to address Houston's concerns regarding "episode management," the Panel directs the Assistant Manager to consult with Houston (and Canfor and the other Parties) to discuss Houston's specific concerns, and following such consultations, consider and make any further amendments to those provisions, at the discretion of the Assistant Manager. In particular, such consultations should be with respect to how greater certainty could be achieved with respect to the conditions under which the Regional Waste Manager will exercise his discretion to order the shut-down of the beehive burner.

In order to address Canfor's concerns regarding the vagueness of the permit amendments with respect to the *Environmental Protection Plan*, the Panel directs the Assistant Manager to consult with Canfor, Houston and the other Parties, and following the consultations, consider whether any additional terms or revisions should be made to the permits to provide greater clarity.

Further, the Panel finds that the amendments to the permit with respect to the Webcam system would be in conflict with the *Amended Regulation*. In accordance with section 2(2.1) of the *Amended Regulation*, the *Amended Regulation* applies. Therefore, those portions of the permit amendments relating to the Webcam system that are in conflict with Schedule 1 of the *Amended Regulation* are accordingly rescinded.

As well, because the Panel agrees with the Parties that many of the issues underlying this appeal are political or economic in nature, and will require the cooperation of all of the Parties in finding a long-term solution to the disposal of the wood residue from the sawmill industry, the Panel recommends that the provincial government initiate a process, in consultation with the communities, individuals residing in the communities and industry to identify and implement one or more value-added solutions as an alternative to the beehive burners. This process should be undertaken as soon as possible to enable identification and implementation of a value-added solution before the phase-out date for the beehive burners that is specified in the *Amended Regulation.*

Marilyn Kansky, Panel Chair
Environmental Appeal Board

April 25, 2002