



APPEAL: 84/02 WASTE MGT

J U D G E M E N T

APPEAL AGAINST WASTE MANAGEMENT PERMIT  
NO. P.A. 6602, DATED FEBRUARY 22, 1983

A Panel of the Environmental Appeal Board heard an appeal against the Waste Management Branch Permit P.A. 6602, at the Empress Hotel, Chilliwack, B.C., on January 18, 1984, at 10:00 a.m.

The Panel consisted of:

I. A. Hayward, P. Eng. - Chairman  
Dr. Brenda Morrison, Ph.D. - Member  
G. E. Simmons, P. Eng. - Member

Miss S. R. Mitchell, acting as Recorder

The Appellant in this hearing was:

Wayne Snerle,  
Wayne's Cabinet Shop,  
50711 O'Byrne Road,  
Sardis, B. C. V0X 1Y0

Mr. Snerle was represented by Counsel - Mr. Frank Mullally.

The Waste Management Branch was represented by Mr. Robert Ferguson, Director of the Waste Management Branch, and Mr. Pat Khare, Head of the Air & Industrial Section, Lower Mainland Region, Waste Management Branch.

Recognized Objectors were Mr. Ron Doerksen and his wife, Arlene Doerksen.

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At issue was whether Permit P.A. 6602 should be upheld or amended.

Mr. Mullally reminded the Panel that the Appellant's objection to the Permit (Exhibit "A") hinged on two specific points:

1. The primary issue - that the stack extension of an additional 10 metres was unnecessary and unacceptable.
2. A secondary issue - that the restriction of operating hours from 8:00 a.m. to 5:00 p.m. Mondays through Fridays, was unacceptable.

Mr. Mullally called one witness, Mr. A. Lanfranco.

Mr. Lanfranco's evidence focussed on his qualifications, which were that of an environmental technologist (B.C.I.T.-1971-1973), reinforced by employment as a chemical analyst by INCO, in Thompson, Manitoba, for a number of years. His firm, Lanfranco and Associates, has been in business approximately 8 months, and specializes in air monitoring. He had not previously conducted monitoring of a lacquer spraying operation.

Most of his evidence was concerned with his report, "Air Monitoring Survey Report Prepared for Wayne's Cabinet Shop, dated December 1983", and submitted as Exhibit "B".

He stated that, as far as he could judge, at the time of the test all of the equipment in the spraying area was in order and was properly used.

He referred to the constituent elements of the lacquer that he had tested and which Mr. Snerle apparently uses, and stated that three of these have a strong odour.

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Odour measurement is normally conducted by a group of people or by an olfactometer. At this particular site, he noted that an odour was detectable 7.5 metres from the stack on three occasions, but was not sure that it was objectionable because it was barely perceptible. He recommended that several similar tests should be taken in the vicinity of the residence of the complainants over a period of several days.

He suggested that a smaller diameter stack might achieve the same effect as a 10-metre extension, but was uncertain as to what changes would take place with the variation in stack height. The results from stack heights of 20 or 30 metres would be different to a stack height of 10 metres.

When questioned by Mr. Ferguson, Mr. Lanfranco agreed that the present filter is primarily for the removal of particulates, and would have only a small effect on the gases, and some material would continue to be emitted by evaporation. The odour in the shop was objectionable while spraying was taking place. The test was over an 80-minute period, spraying lacquer on a 4-foot x 3-foot plywood. This led to a significant lacquer buildup.

Concerning the sampling, he would have more confidence if there were more tests because this was a very difficult site. He chose to measure ambient conditions 7.5 metres from the stack because this was the distance to the property boundary, and he knew that no odour should be emitted beyond the property boundary. He was not sure that 7.5 metres gave the greatest concentration; it could be either higher or lower.

The emission plume assessment was based upon observations of a nearby chimney stack, the wind direction changed quite a bit and sometimes bent down during the course of the test. The factor of 10 introduced on Page 6 of the Report was arbitrary and was intended to compensate for the non-representative aspects of Table 1 concerning the wind direction problem. The variation recorded

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between the results of upwind and downwind ambient sampling was a surprise and is possibly due to a concentration through local conditions or a variation in stack emissions throughout the 80-minute test period.

He was quite emphatic that the inconsistencies measured in elements of the ambient values were a function of the sensitivity of the instrument used. The timing of ambient measurement in the plume, the location of the plume itself, the position within the plume, all of these were not known for certain; they were estimated.

The Workers' Compensation Board values quoted give levels for workers and have no relationship whatever to odours. He was unsure of the definition of recognition thresholds. They are not consistent with perceptability thresholds. He was not sure about all the solvents in this lacquer or in other lacquers.

Questioned by the Panel, Mr. Lanfranco conceded that variations in the temperature of the shop might cause more evaporation, but he had no idea of the relationship between odour and shop temperature.

As to the differentiation between which compound is being smelled - odour perception is very different to odour recognition.

Mr. Lanfranco assumed that the product sheet given him covered the lacquer normally used by Mr. Snerle. Other lacquers could be used and would have slightly different properties, but they would be similar. The witness confirmed that bypassing the filter would reduce the concentration of the emissions in the stack.



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The Director of Waste Management Branch, Mr. Robert Ferguson, introduced the non-conforming use of the property. He went on to elaborate upon factors such as topography, buildings and trees that affect the wind patterns, leading to some difficulty in predicting ambient conditions.

Referring to odour, he pointed out that its impact was subjective and that lacquers vary in odour. He introduced Exhibit "C" prepared by his staff and discussed the difference between TLV's, the threshold limits of odour, and the 100% recognition level of odour. He suggested that comparing the ambients recorded by Mr. Lanfranco with the factored tables in Exhibit "C" then within the limits of the accuracy of the survey the levels were approximately similar.

He stated that it was difficult to measure odour levels and that B.C. does not have an instrument to do this effectively. Consequently, the human nose is probably the best indicator. He felt that the filter does not affect the solvent emissions. It is intended to protect the operator and he believed the odour persisted after the filter was installed, and still persists.

He did not suggest that there is a health hazard but that there is interference with the use and enjoyment of the neighbouring properties. The permit was developed as a reasonable compromise between minimizing the impact on the neighbours and reducing the appellant's costs to a minimum. The same reasoning applies to the restrictive hours of operation.

He stated that a model had established that, with no obstruction, a stack extension of 5 metres would give a 75 metre point of impingement, and a 10-metre stack would double that level of impingement distance and, at the same time, would reduce the concentration at

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that point (150 metres) to a quarter of what it would be at 75 metres. However, normal modelling would not apply in this case by virtue of the obstructions previously referred to. The only certain way of achieving a precise result would be through a trial and error process which would be very difficult and time-consuming.

In conclusion, he reiterated that he was satisfied that the Doerksens were and are not adversely affected by the odour.

Under questioning by the Appellant's counsel, Mr. Ferguson agreed that the permit was based upon air contamination and the resulting material and physical discomfort, which did not extend to health impairment. He had no personal knowledge of the physical discomfort introduced by the contaminant, and was basing his decision on information provided from other sources. He agreed that the Branch is responding to complaints but that these are considered by them to be legitimate.

He acknowledged that he did not know the zoning regulations that apply and had no personal knowledge of the non-conforming use. He recognized that a high stack might impinge on the zoning regulations.

He outlined the general procedure for granting a permit which usually involves work by independent consultants at the Appellant's expense, and very rarely by Branch monitoring. In this particular case, Branch monitoring was considered to be ineffectual. He stated that a water scrubber would be an effective measure for eliminating the air contamination, but this would cost several thousands of dollars.

Mr. Ferguson agreed that the 10-metre stack extension would help alleviate but might not eliminate this particular problem. His staff could not state with certainty

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that under the circumstances that prevailed at the site, a 10-metre extension would be effective. He agreed that it was a somewhat arbitrary length and that, as an alternative, a permit might well have been refused under the circumstances. However, in fairness to all concerned - those that were affected by the contamination and those that had to pay the cost of the installation - it appeared to be a fair solution to the problem.

He agreed that 20 hours of operation a year is a low figure. He went on to define the point of impingement, its inter-relationship with stack height and dispersement patterns. He conceded that under such a 10-metre extension, the contamination may go beyond the Doerksen property, and might still be objectionable, although it would be substantially diminished.

He reiterated that he was not concerned with health hazard but with physical discomfort, and developed his theme by referring to Exhibit "C", focusing on the distinction between odour detection and recognition levels.

Mr. Ferguson concluded that the whole question of material discomfort is subjective, as is the stack height in this particular instance, and he could suggest no other solution.

Questioned by the Panel, he agreed that increasing the horsepower of the fan might project the contaminants higher and further and so achieve a greater dispersion.

The Workers Compensation Board introduced the filter to protect the operators and he understood from the appellant that occasionally he had employees in the shop. From his personal point of view, the role of the filter was not fully understood; in fact, the operator might be better off without the filter although some particulate matter might be picked up by the filter.



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He stated that the decision to increase the stack height does not affect the velocity of the contaminant; however, the height extension would help but it is hard to project just how much.

Counsel for the Appellant raised objections to the Panel hearing evidence from the Doerksens and other neighbours. After considerable discussion, this objection was overruled.

Mrs. Arlene Doerksen said that the Workers Compensation Board improvements, i.e. the filter and the present stack, have had no impact except merely to shift the direction of the fumes and the smell from the front of her property to the back.

The frequency of the spraying is now quite low but once the Appellant gets busy again, she would expect the frequency of spraying to increase. She concluded by saying that she was willing to give the permit in its entirety a chance to see whether it would work or not, because she believes she would have an opportunity to introduce additional changes as necessary to control the odour.

Questioned by the Appellant's counsel, she admitted that there had been no medical problems associated with the spray. The family physician had not been consulted with respect to the spraying.

Under questioning by members of the Panel, she stated that the emission is visible, a sort of white cloud, it goes over the property, most of it comes from the stack but some of it through the open garage door.

Spraying is intermittent under a heavy workload, but the odour persists for approximately five minutes after the spraying depending on the weather or the wind. The Workers Compensation Board improvements merely redirected the plume and did not eliminate it.



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A film or dust can be noticed on the outside of her windows but this is not necessarily a lacquer deposit.

With respect to Exhibit "G", which is a record of the hours of operation, and which was introduced by the Appellant's counsel, the witness disagreed with the dates recorded after comparing them with her own records. She agreed that she used the compressor noise as a guide and then went out to see if spraying was taking place.

The counsel for the Appellant agreed with a question from the Panel that this record of operating hours was unusual, but it was used as a check against the neighbour's suggested operating hours.

Mr. Jack Woodruff appeared as a witness for Mrs. Doerksen. He confirmed that he saw the spray from the road; he saw the cloud go over the adjacent property and, moving to the back of the property, he smelled the odour. Personally, he did not find it objectionable. The cloud came from the garage door and also from the stack.

A second witness, Mike Woodruff, said he had noted the Snerle spraying for two to three years, and that it affects his property which is beyond (to the east of) the Doerksen property. On one occasion, the cloud almost reached the road gates and spread over the Doerksen property, and they had to go indoors. He had been personally nauseated by the odour. It goes as far as his backyard, and it varies with the wind. He introduced as an exhibit a letter from the family physician, emphasizing the hazard that lacquer spraying posed to his children and his pregnant wife.

He stated that the Appellant rarely sprays with the garage door half open; it is usually wide open. Under questioning by the Appellant's counsel, he admitted that he asked the doctor for the letter and gave the doctor most of the details of the permit and the inconsistencies with the permit. He presumed that

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the doctor researched the impact of spraying before he wrote his letter.

At this point, Mr. Ferguson made a comment that the local Health Unit did not support the alleged health hazard.

In summing up, Mrs. Doerksen reiterated that the problems of the lacquer spraying interfered with the use and enjoyment of their property, the smell was nauseating and they were very concerned about the health hazard. They were sincere and their complaints had no bearing on the other aspects of the relationship with the appellant. Their only option to having the terms of the permit followed was to move.

Mr. Ferguson, in summing up, pointed out that there was plenty of evidence that the Doerksen's use and enjoyment of their property is impaired and, in setting out the terms of the permit, he tried to achieve a balance between a minimum impact in terms of expense to the appellant, the optimum impact on the control of the emissions, and the undesirable effects of the emissions on the neighbours. However, by virtue of the complex air movements which complicate dispersion model calculations, there is certainly a lack of confidence in attempting to establish the stack heights. But, on reflection, he thought that the operating hours as specified in the permit and the 10-metre stack extension are reasonable, although there are no guarantees as to the effect of either of them.

Mr. Mullally, summing up on behalf of the Appellant, noted that the Branch could not guarantee that the 10-metre extension would be effective, and asked why the Appellant should spend money, perhaps needlessly. No hard evidence had been introduced to support the efficacy of a 10-metre stack. He recognized the concern and sincerity of the objectors.

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Site Inspection

The Panel, accompanied by virtually all those associated with the hearing, visited the site for approximately 10 minutes between 1:00 p.m. and 2:00 p.m. on January 18, 1984. The weather was clear and cold, with a light wind blowing.

The Appellant's place of business lies on flat ground, surrounded on two sides by the Doerksen property; on the west side, by his mother's house, and on the south side, by the road. Beyond the road, further properties of a recreational nature lead down to the river. The area is heavily treed and there are trees on the Appellant's property.

Access to the spraying area is gained through the garage door, which is of the tilting variety, and on the opposite wall, there is a filter bank with an exhaust stack containing a fan. The gasoline driven compressor, which is used to supply the spray, was within the building but is taken outside and put between the two properties (the Doerksen's and the Appellant's property) for the purpose of spraying.

The Panel noted that smoke from an adjacent chimney changed its direction 180 degrees during the course of the site inspection. They also noticed that, while most of the time the smoke rose lazily, on one occasion a downdraft existed and the smoke plume fell towards ground level and was lost against the background of the building.

The overall impression gained by the Panel was that the properties represented a pleasant residential area in a parklike setting.



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Conclusions:

Having heard the evidence and having visited the site, the Panel reached the following conclusions:

1. That the Doerksens constructed and occupied their residence on O'Byrne Road prior to the construction and operation of Wayne's Cabinet Shop.
2. The Doerksens have a right to full use and enjoyment of their property.
3. Depending upon the state and direction of the wind, the operation of the lacquer spraying has caused and continues to cause a cloud or vapour containing particulates and an unpleasant odour to enter the Doerksen and Woodruff properties.
4. That this cloud and its related odour, in the concentrations measured, is not likely to adversely affect the health of the Doerksens and their neighbours, but would impair the enjoyment and normal use of their properties.
5. By virtue of topography, buildings and trees surrounding the premises, it is not possible to produce modelling that would predict the appropriate height of a stack that would eliminate the problem of the vapour and the odour.
6. An increase in stack height would be beneficial in minimizing the cloud and odour, but could not be guaranteed to eliminate it.
7. The Director of the Waste Management Branch has attempted in the present permit to produce a nice compromise between diminution, and possibly an elimination of the cloud and odor at the lowest possible cost to the appellant.
8. The installation of a water scrubber at a cost of several thousands of dollars is probably the most effective way to eliminate the cloud and associated odour.

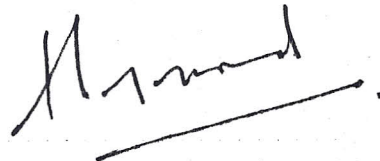


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DECISION:

The Panel's decision is as follows:

1. The Panel dismisses the appeal of Mr. Wayne Snerle, of Wayne's Cabinet Shop, against Permit PA-6602.



I. A. Hayward, P. Eng.,  
Chairman of Panel  
Environmental Appeal Board

Victoria, B. C.  
March 8th, 1984

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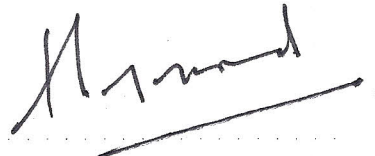
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