

ILLINOIS POLLUTION CONTROL BOARD
February 15, 1979

HOWELL ASPHALT COMPANY, INC.,)
)
 Petitioner,)
)
 v.) PCB 78-292
)
 ENVIRONMENTAL PROTECTION AGENCY,)
)
 Respondent.)

OPINION AND ORDER OF THE BOARD (by Mr. Dumelle):

Petitioner has requested a five year variance from Chapter 8: Noise Regulations. The Agency has recommended that the variance be granted subject to certain conditions. No hearing was held.

Petitioner operates a plant in Effingham which produces hot asphalt from various grades of crushed aggregate (CA). As part of this operation the CA is unloaded from an adjacent railroad siding. Most of the CA falls by gravity into an unloading pit when the doors of each hopper car are opened. The remainder is removed by shaking the hopper car. During this "car shakeout", the standards of Rule 204 of Chapter 8 (Sounds Emitted to Class B land from a Class C source) are violated. Petitioner has attempted to remedy the violations through the construction of a concrete barrier ninety feet long, twenty feet high, and eight inches thick at a cost of \$17,931.59. Although the barrier has attenuated noise levels, violations have still been recorded. Additional attempts to date have either been ineffective or have damaged the hopper car, which belongs to the Illinois Central Gulf Railroad (ICG). Neither Petitioner nor its consultants are aware of any system which will result in total compliance.

Petitioner claims that if a variance is denied, it will be forced to either reduce its plant capacity or cease operations. If the remainder of the CA was removed by hand labor, Petitioners' employees would be subject to hazards and capacity would be reduced to seven or eight loads per day instead of the present 40. Even though the hopper cars are unloaded only three days per week, Petitioner cannot use the other four days to unload by hand because the ICG requires a "substantial demurrage charge" if hopper cars are kept longer than 24 hours. Petitioner perceives "no perceptible harm to the public" if it is allowed five years to pursue improvements to the present barrier.

In its Recommendation, the Agency agrees with Petitioners' allegations. The A-weighted equivalent sound levels were 85.7 db(A) without the barrier and 70.5 db(A) with the barrier. USEPA has recommended a level of 70 db or less Leq (yearly energy average sound level) to protect against hearing loss with an adequate margin of safety. Through an equation listed in Exhibit 4 attached to the Recommendation, Leq before the barrier was installed was calculated at 66.4-72.4 db. Since the barrier, Leq has dropped to 51.2-57.2 db. Since the noise receiver in this case is a commercial establishment, no interference with sleep or recreation is anticipated. USEPA has recommended a standard of

40-45 db(A) for interior sound levels to allow 100% intelligibility of speech. Since the barrier was installed, indoor noise in the vicinity is 61 db(A) with windows open and 51 db(A) with windows closed. Consequently, some interference is expected 40 times per day, three days per week, for 1-4 minutes, during eight to nine months per year. The Agency concludes that this interference is not great and has been substantially reduced by construction of the barrier.

The Agency states that even by theoretical calculations, a 20 foot barrier would not be sufficient to comply with Rule 204. Actual reductions have shown the barrier less effective than the theoretical in the 31.5 Hz and 500-8000 Hz octave bands, more effective in the 63 Hz and 125 Hz octave bands, and equal to the theoretical in the 250 Hz octave band. The theoretical height of an adequate barrier would be 50 feet with side extensions to reduce diffraction. Costs are speculated as ". . . very high due to wind with the attendant benefits over a 20 feet barrier being moderate-a theoretical reduction of 7 db(A)". The Agency admits that a 50 foot barrier, like the present one, may fail to meet expectations.

When the Board adopted the noise standards it stated the following:

"In controlling noise one can either quiet the source directly, block the noise transmission paths either at the source or at the point of reception, or protect the individual with devices such as ear plugs. For environmental noise control only the first two methods are suitable and while quieting the noise source directly is preferred, it is often not possible so that blocking the noise transmission path becomes the technique used in many instances . . .

. . . Materials used for noise control can be subdivided into four classes (EPA Ex. 125):

- a) sound absorbing materials - porous materials that convert sound energy into heat
- b) sound barriers - dense, limp masses that reflect most sound and transmit little sound
- c) vibration isolation - resilient materials that do not transmit vibration
- d) vibration damping - materials to inhibit vibrations.

These materials can then be used in four general classes of noise control systems.

- a) mufflers and silencers - for gas flow silencing of fans, compressors or high pressure gas discharges
- b) barriers - to block sound transmissions, for example partitions or enclosures
- c) sound absorption - acoustical tile, curtains
- d) vibration isolation - pads, cushions between source and structure to reduce structureborne sound transmission."

(In the Matter of Noise Pollution Control Regulations, R72-2, 8 PCB 703, 737, July 31, 1973)

It would appear that Petitioner has followed the Board's guidance in most respects. One possible exception is the failure to mention any sound absorbing

materials that might be used to cover the present barrier. The Board is aware of the problems faced in covering an outdoor barrier and the attendant maintenance costs. In the future, this alternative should at least be explored nonetheless. The Board agrees that any harm being caused by Petitioner's present operation is outweighed by the hardship which would be incurred should this variance be denied. Although the Agency's recommended conditions are appropriate for the most part, a five year variance is not warranted. The Board would rather limit relief to three years to encourage Petitioner to investigate the use of sound absorbing materials. If further relief is necessary, it can always be requested.

Petitioner has requested a variance without specifying any particular rule or rules in Chapter 8. The Agency has specifically recommended a variance from Rule 204. The Board would rather grant relief from Rules 204 and 102 with the proviso that this variance is limited to noise from the "car shake-out" so that this matter cannot be relitigated in the next three years.

This Opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

It is the Order of the Pollution Control Board that Petitioner be granted a variance from Rules 102 and 204 of Chapter 8: Noise Pollution for three years from the date of this Order for the emissions from Petitioner's "car shake-out" operations subject to the following conditions:

A. Throughout the duration of the variance, Petitioner shall maintain the existing barrier to the specifications described in Petitioner's exhibits 9 and 10, in constant good repair and operation.

B. Throughout the duration of the variance, Petitioner shall install no new or additional railroad car shakers at the site.

C. Throughout the duration of the variance, Petitioner shall not relocate the existing railroad car shaker to any other location at the site.

D. Throughout the duration of the variance, Petitioner shall not exceed the after-barrier energy average shown in figure 2 of Exhibit 1 attached to the Agency's Recommendation.

E. Throughout the duration of the variance, Petitioner shall perform literature reviews to investigate new technology for reducing railroad car shaker noise, including the use of sound absorbing materials to cover the existing barrier.

F. Throughout the duration of the variance, Petitioner shall report every 12 months to the Agency the results of its investigation into new technology for reducing railroad car shaker noise.

G. Petitioner shall execute and forward to the Environmental Protection Agency, Division of Noise Pollution Control, Enforcement Section, 2200 Churchill Road, Springfield, Illinois 62706, within 45 days after the date of this Order, a Certification of Acceptance and Agreement to be bound to all the terms and conditions of the Variance. This 45 day period shall be held in abeyance during any period this matter is being appealed. The Certificate shall read as follows:

CERTIFICATION

Howell Asphalt Company, Inc., an Illinois Corporation, is aware of and understands the Order of the Illinois Pollution Control Board in PCB 78-292 and hereby accepts that Order and agrees to be bound by all of its terms and conditions.

HOWELL ASPHALT COMPANY, INC.

By _____
Authorized Agent

Title or Company Position

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 15th day of February, 1979 by a vote of 3-0.

Christan L. Moffett, Clerk
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Illinois Pollution Control Board