ILLINOIS POLLUTION CONTROL BOARD
October 17, 1996

DOROTHY L. HOFFMAN,	)	
	)	
Complainant,	)	
	)	
v.	)	PCB 94-146
	)	(Enforcement-Noise)
CITY OF COLUMBIA,	)	
	)	
Respondent.	)	

MATTHEW J. MARLEN APPEARED ON BEHALF OF THE COMPLAINANT:

THOMAS D. ADAMS OF ADAMS AND HUETSCH, APPEARED ON BEHALF OF RESPONDENT.

OPINION AND ORDER OF THE BOARD (by J. Yi):

This matter is before the Illinois Pollution Control Board (Board) pursuant to a complaint filed by Dorothy L. Hoffman (complainant) against the City of Columbia (City or respondent) on May 5, 1994. Ms. Hoffman filed this citizen enforcement action pursuant to Section 31(b) of the Environmental Protection Act (Act). (415 ILCS 5/31(b)(1994).)

Ms. Hoffman alleges that the City violated the prohibition of noise pollution set forth in Sections 23 and 24 of the Act and the Board's regulation at 35 Ill. Adm. Code 900.102, in the operation of the City's maintenance facility located southeast of Ms. Hoffman's property at 523 Giffhorn Street, Columbia, Illinois. (415 ILCS 5/23 and 5/24 (1994).) Several hearings were held in this matter before Board Hearing Officer John Hudspeth on October 25, 1994, October 31, 1995, December 11, 12 and 21, 1995. The parties filed briefs on March 28, 1996, May 20, 1996 and June 3, 1996. For the reasons stated below we find respondent in violation of Section 24 of the Act and 35 Ill. Adm. Code 900.102.

Applicable Laws

The specific sections of the Act and the Board regulations on which Ms. Hoffman bases her complaint are: Sections 23 and 24 of the Act, and 35 Ill. Adm. Code Section 900.102 of the Board's regulations.

Section 23 of the Act states that: "[t]he General Assembly finds that excessive noise endangers physical and emotional health and well-being, interferes with legitimate business and recreational activities, increases construction costs, depresses property values, offends the

senses, creates public nuisances, and in other respects reduces the quality of our environment. It is the purpose of this Title to prevent noise which creates a public nuisance."

Section 24 of the Act states that "[n]o person shall emit beyond the boundaries of his property any noise that unreasonably interferes with the enjoyment of life or with any lawful business or activity, so as to violate any regulation or standard adopted by the Board under this Act."

Section 25 of the Act states that the Board, "pursuant to procedures prescribed in Title VII of the Act, may adopt regulations prescribing limitations on noise emissions beyond the boundaries of the property of any person and prescribing requirements and standards for equipment and procedures for monitoring noise and the collection, reporting and retention of data resulting from such monitoring". (415 ILCS 5/25 (1994).)

Section 900.102 of the Board regulations states that "[n]o person shall cause or allow the emission of sound beyond the boundaries of his property, as property is defined in Section 25 of the Act, so as to cause noise pollution in Illinois [Section 900.101 has defined noise pollution to be "the emission of sound that unreasonably interferes with the enjoyment of life or with any lawful business or activity], or so as to violate any other provisions of this chapter."

In determining whether noise rises to the level of a nuisance, the unreasonable interference with complainant's enjoyment of life, the Board takes into consideration Section 33(c) of the Act which states that "[i]n making its orders and determinations, the Board shall take into consideration all the facts and circumstances bearing upon the reasonableness of the emissions, discharges, or deposits involved including, but not limited to:

1. The character and degree of injury to, or interference with the protection of the health, general welfare and physical property of the people;

2. The social and economic values of the pollution source;

3. The suitability or unsuitability of the pollution source in the area in which it is located, including the question of proximity of location in the area involved;

4. The technical practicability and economic reasonableness of reducing or eliminating the emissions, discharges or deposits resulting from such pollution source; and

5. Any subsequent compliance.

(415 ILCS 5/33(c) (1994).)

The Board in determining a remedy must consider Section 42(h) of the Act which states that "[i]n determining the appropriate civil penalty to be imposed, the Board is authorized to

consider any matters of record in mitigation or aggravation of penalty, including but not limited to the following factors:

1. The duration and gravity of the violation;

2. The presence or absence of the diligence on the part of the violator in attempting to comply with the requirements of this Act and Regulations thereunder or to secure relief therefrom as provided by the Act;

3. Any economic benefits accrued by the violator because of delay in compliance with requirements;

4. The amount of monetary benefit which will serve to deter further violations by the violator and to otherwise aid in enhancing voluntary compliance with this Act by the violator and other persons similarly subject to the Act; and

5. The number, proximity in time, and gravity of previously adjudicated violations of this Act by the violator.

(415 ILCS 5/42(h) (1994).)

Preliminary Matter

At hearing complainant entered into the record a video tape as Comp. Ex#38. (Tr. at 104.) The hearing officer allowed the video tape to be entered into the record for the purpose "of how the facility appears". (Tr. at 104.) The hearing officer stated "I don't think that any of the noise emanating from the tape are properly considered by the Board in this case". (Tr. at 104.) Then the hearing officer pursuant to continuing objections directed the parties to argue the issue before the Board. (Tr. at 105.) Respondent, in its brief, argues that the video tape should not be entered into the record because if it is for the purpose of visual description it is cumulative and if it is for the purpose of describing the noise there is no foundation that the recorded levels are accurate and cites to Annino v. Browning-Ferris Industries of Illinois, (August 18, 1988), PCB 87-139 and Kvatsak v. St. Michael's Lutheran Church, (August 30, 1990), PCB 89-182. (Resp. at 5-7.)[1] Complainant argues that the tape is not being admitted for the purposes of the quantity of sound but for the quality of the type of sounds and cites to Madoux v. Straders Logging and Lumber, (May 21, 1991), PCB 90-149. (Reply at 1-2.)[2]

The Board will allow the tape to be entered into the record for the visual depiction of the facility while in operation and for a description of the types of noise, but not for the purpose of characterizing the volume of the noise level. As the Board found in Madoux the video tape can be utilized to demonstrate the noise, the sound of a warning device or the roar of an engine, but not for any substantive purposes. Additionally, the video is not cumulative

[1] The respondent's brief will be referenced to as "Resp. at ".
[2] The complaint's reply brief will be referenced to as "Reply at ".

evidence because the photographs are static representations and the video provides visual conception of the operations at the facility.

Procedural Background

On October 25, 1994 a hearing was held at the offices of Columbia City Hall, Columbia, Illinois. At the hearing the parties entered opening statements and discussed a settlement agreement. At the close of the settlement agreement discussion, the hearing officer continued the cause and directed both parties to file the settlement papers by November 30, 1994, pursuant to the applicable Board procedural requirements at 35 Ill. Adm. Code 103.180 and Section 31(b) of the Act.

The settlement papers were not executed and on May 19, 1995 complainant filed a motion to enforce settlement and a memorandum in support of the motion to enforce settlement. On May 31, 1995 respondent filed a response to the motion to enforce. The Board, on August 24, 1995, denied complainant's motion to enforce and directed the parties to proceed to hearing. As stated above additional hearings were held October 31, 1995, December 11, 12 and 21, 1995.

General Background

Ms. Hoffman lives in a single family residence in a residential area of the City of Columbia. (Tr. at 27-28, Brief at 1.)[3] Ms. Hoffman has been at this residence since 1959. (Tr. at 28, Brief at 1.) In 1959 the area where the City currently operates its maintenance facility, which is the source of the noise in question, was an open area with some cedar trees, berry bushes and other vegetation. (Tr. at 28, Brief at 1.) The City built a brick pump house sometime before 1967 on the property behind Ms. Hoffman's property. (Tr. at 29, Brief at 1, Comp. Ex.#4.)[4] In 1967, the City built a large brick shed on the same piece of property. (Tr. at 29, Brief at 1, Resp. Ex.#34 (brick portion only).)[5]. During the time period starting in 1967 until the present the City added to the facility including a salt bin and asphalt bin (Comp. Ex.#10), aggregate piles (Comp. Ex.#11 and 20), earth pile (Comp. Ex.#12 and 15), expansion to the brick shed (Comp. Ex.#21, Resp. Ex.#34) and various other improvements (Comp. Ex.#21). (Tr. at 50-65.) The southwest corner of Ms. Hoffman's house is approximately 191 feet (ft.) from the large shed made up of the brick shed built in 1967 and the expansion. (Tr. at 209, Comp. Ex.#39.) The salt and asphalt bins are approximately 247 ft. from the southwest corner of Ms. Hoffman's house. (Tr. at 211, Comp. Ex.#39.) Ms. Hoffman's house is located roughly 26 ft. in from the property line. (Tr. at 212, Comp. Ex.# 39.) The maintenance facility is situated on a triangular piece of land which abuts complainant's residence and others on one side, a cemetery on another side and a park along the final side. (Resp. at 4, Comp. Ex.#2.)

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[3] The transcript of the hearings will be referenced to as "Tr. at .", and the complainant's post-hearing brief will be referred to as "Brief at .".

[4] The complainant's exhibits will be referenced to as "Comp. Ex# .".

[5] The respondent's exhibits will be referred to as "Resp. Ex#.".

The City maintenance facility utilizes several different trucks to perform various road and other maintenance tasks around the City. Also the City owns and operates several different machines such as backhoes, dozers and an endloader which assist in carrying out the maintenance functions for the City. (See Resp. Ex.#12, 26, 28, 29 and 34.) Finally, there are also several other pieces of equipment stored at the facility such as a street sweeper, a "Bomag" roller and several trucks used for spreading oil on streets. (See Comp. Ex.#5, 18 and 22, Resp. Ex.#2 and 28.) The normal business hours of the facility are 8:00 a.m. to 4:30 p.m. (Tr. at 725.) However, due to emergencies, such as snow storms and water main breaks, the facility is used anytime throughout a 24-hour period depending on when the emergency occurs. (Tr. at 738.)

Arguments

Complainant

Although complainant did not specifically argue the factors of Section 33(c) of the Act in its brief, the Board, for ease of the readers, will summarize complainant's argument which tend to be related to one of the factors.

> The character and degree of injury to, or interference with the protection of the health, general welfare and physical property of the people.

Ms. Hoffman testified that the dump trucks make a lot of noise due to metal clanging, truck beds dragging on the asphalt, and engines roaring. (Brief at 2, Tr. at 65-66, Comp. Ex.#3, 4, 6, 12, 16 and 22.) Furthermore, Ms. Hoffman testified that this equipment, referred to as the "Cats" (equipment manufactured by Caterpillar), generate noise from the loading and unloading of aggregate, the roaring of the engines, and the backup bell or warning device. (Brief at 2, Tr. at 51, 72-74 and 87, and Comp. Ex.#37.) Additionally, Ms. Hoffman testified that the street sweeper "sputters and stutters" before it warms up. (Brief at 2, Tr. at 66, Comp. Ex.#37 at 9 (10/3/94).) Finally, Ms. Hoffman testified that an air horn occasionally blasts while the oil is being boiled and that the engine creates a noise while it is heating and circulating the oil prior to application all of which creates noise. (Brief at 3, Tr. at 61, 66, 71, Comp. Ex.#37 at 7 (8/15/94).)

Next complainant sets forth how the above described noise interferes with her enjoyment of life. (Brief at 3-7.) Ms. Hoffman testified that before 1988 the neighborhood had a quiet and peaceful reputation. (Brief at 3, Tr. at 116.) Ms. Hoffman testified that the operation of these trucks occur occasionally after midnight or early in the morning. (Brief at 3, Tr. at 50, 69, Comp. Ex.#37.) From 1993 until 1995, Ms. Hoffman kept a journal describing the noises and the time of occurrence, which was submitted as complainant's exhibit number 37. (Comp. Ex.#37.) On several occasions the journal lists the disturbances as happening early in the morning or late at night. (Reply at 2-3, generally Comp. Ex.#37.) The majority of the entries concern noise generated by engine roaring, backup bells or warning devices, and the loading and unloading of aggregate. (generally Comp. Ex.#37.) Ms. Hoffman testified that the noise prohibited her from enjoying her backyard and disturbs her

sleep. (Brief at 3-4, Tr. 116-117.) Complainant asserts result of the noise from the maintenance facility has been stress, fatigue from the lack of sleep, irritability and depression from having to listen to the noise. (Brief at 4, Tr. at 119.)

To substantiate the testimony of Ms. Hoffman complainant called Mrs. Schuler, Ms. Hoffman's daughter. (Brief at 4-5, Tr. at 246.) Mrs. Schuler and her family lived at Ms. Hoffman's house periodically from 1973 to 1994. (Tr. at 247.) During those periods of time Mrs. Schuler and her family lived in the basement of the house. (Tr. at 247.) Mrs. Schuler testified that you could not converse outside when there was activity at the facility due to the roar of the engines and that the backup warning devices were not the only annoyance. (Brief at 4, Tr. at 248-249.) Mrs. Schuler stated that the noise from the site would wake her husband and occurred during odd hours of the day and not just during normal working hours. (Tr. at 250.) Mrs. Schuler stated that the working hours were not restricted to 8:00 a.m. to 5:00 p.m. during the summer; instead the City employees could start at 6:00 a.m. or 7:00 a.m. and if the weather turned bad in winter, "…it can be at any hour of the day". (Brief at 5, Tr. at 250.) Mrs. Schuler testified that the noise is "nerve-racking", that "[w]hen you're awakened in the middle of the night, it's very hard to go back to sleep", and that "[t]he roar of the engine puts a lot of stress on you, undue stress" which "[i]t prevents you from performing one hundred percent" at work the next day. (Brief at 5, Tr. 252-254.)

Next complainant presented the testimony of Mr. Greg Zak of the Agency who appeared on behalf of complainant to further support the contention of a nuisance violation. (Brief at 5-9.) Mr. Zak, based on his observations at the site, the prior testimony of complainant's witnesses, and the measurements taken by the Agency and E.D.I[6], testified that there were considerable exceedences of the Board's numerical limitations and that there is a well-founded nuisance complaint regarding the operations at the facility. (Brief at 5, Tr. at 287-288.) Mr. Zak specifically mentioned the loading and unloading of aggregate and the engine noise of front end loader and the trucks as operations which may result in a nuisance. (Tr. at 287-288.) Next Mr. Zak testified that the noise measurements and the results taken by Ms. Hoffman and the Agency which were entered into the record as complainant's exhibit number two (2) are empirical facts which "substantiate and back-up Ms. Hoffman's claims of nuisance noise". (Brief at 6, Tr. at 288, Tr. at 290-330.) In response to whether the measurements were taken in compliance with the regulations, Mr. Zak stated "[i]n general it was", except that "[t]he one area where it would not necessarily be in strict compliance would be a situation of having the microphone in the window". (Brief at 9, Tr. at 294-295.) However, Mr. Zak testified further that:

> Typically the way it's done, according to measurement standards, would be to have the microphone located outdoors, at least twenty-five feet from the residential structure. However, there is some latitude in the way this is done. If corrections are made for a different configuration, in other words, in this case here, placing the microphone in the window, that tape (sic) of data gathering should be acceptable. And we were able to verify the validity of our numbers

[6] Engineering Dynamics International (E.D.I.) is a consultant engineering firm hired by the City to take sound measurements of the activities at the site.

through the help of E.D.I. supplying their data, and by comparing their independently gathered data to our independently gathered data, and having the numbers end up being virtually the same. (Tr. at 294-295, 365-370.)

Complainant's brief states that "[t]his result was based upon Mr. Zak's opinion that the maintenance facility is a Class "B" emitter and Ms. Hoffman's home is a Class "A" receiver under the Standard Land Use Coding Manual (SLUCM) code (Section 601.102 of the regulations)" and cites to Mr. Zak's testimony. (Brief at 7, Tr. at 301-304.) Complainant argues that the maintenance facility is Class "B" land and not Class "C" land "because it does not use very heavy industrial equipment, such as that found in coal mining or quarrying operations". (Brief at 6, Tr. at 303-305). Finally in support of the claim by complainant that there are noise exceedences at night complainant states that "[a]lthough measurements were not taken at night, Mr. Zak testified that regardless of whether the measurements were taken with the sun up or down, as long as the same equipment is being used, we are going to see the same measurement". (Brief at 6, Tr. at 310-311.)

In explaining the results of the measurements and complainant's exhibit 41, Mr. Zak stated that the amount of sound reduction needed in order to bring the facility into compliance with the numerical limits, would be two decibels at 500 hertz, 13 decibels at 1,000 hertz, 18 decibels at 2,000 hertz, and six decibels at 4,000 hertz. (Tr. at 301.) Mr. Zak testified that exceedences at the 63 hertz octave band "would typically represent exhaust noise from internal combustion engines"; the levels at 500 hertz "could be a number of sources there, perhaps a combination of truck noise, end loader noise"; the levels at 1,000 hertz and 2,000 hertz "would in all likelihood be the backup beeper from any equipment so equipped in the yard"; the level at 4,000 hertz "would be, again, just noise emissions from the equipment in general, and would be rather hard to characterize it coming from a specific source at this point, as was the ten decibels back at 500 hertz." (Brief at 7, Tr. at 324-326, Comp. Ex # 42.) Mr. Zak further states "[i]t's a little difficult to characterize exactly where those [the exceedences of 4,000 hertz] came from" and that "Mr. Tolan will be able to give you more information on the probable cause of those levels." (Tr. at 325.)

Concerning the backup warning devices and the possible exemption under Section 910.107(b), which states "Sections 901.102 through 901.106 inclusive shall not apply to sound emitted from emergency warning devices and unregulated safety valves", complainant states that Mr. Zak assisted in drafting this provision and he testified that this exception was meant to apply to true emergency warning devices, such as fire sirens located at the station, not those on the vehicles in this case. (Brief at 7, Tr. 332-337.) Complainant's states "that Mr. Zak and the Illinois E.P.A. have taken the position that the exemption does not apply to back-up alarms as they are not true emergency warning devices". (Brief at 7, Tr. 334). Complainant argues that the "[b]ack-up alarms are a safety device as opposed to an emergency warning device" and "[t]hus, the exemption is not applicable to this case because backup alarms do not fall within the scope of the provision". (Brief at 7.)

<u>The social and economic values of the pollution source.</u>

Complainant asserts that although respondent "rambles on about the social and economic necessity of the maintenance facility", it "overlooks the simple fact that the services performed by the Maintenance Department will continue to be provided regardless of where the maintenance facility is located". (Reply at 7.) Complainant argues that the social and economic value will neither change nor be affected because the facility will remain near or in the City. (Reply at 7.)

The suitability or unsuitability of the pollution source in the area in which it is located, including the question of proximity of location in the area involved.

Complainant asserts that the maintenance facility is neither suited nor compatible with the surrounding area. (Brief at 10.) Complainant's brief maintains that the maintenance facility is definitely not compatible with the surrounding area because it is situated in a residential area with houses around it". (Brief at 10, Tr. at 44.) Additionally, complainant cites to the testimony of Mr. John Coats, a former mayor of the City, who testified that, in his opinion, the present location of the maintenance facility was inappropriate for the maintenance facility and that there is a fair amount of rural undeveloped property near the City limits which would be appropriate for the maintenance facility. (Brief at 10, Tr. at 216-218.) Furthermore, complainant argues the fact that the maintenance facility was zoned residential until 1989 and the City rezoned from residential to agricultural, and broadened the scope of the definition of agricultural to include municipal buildings as a permitted use, demonstrates that the site is not suitable. (Brief 10-11.) Complainant states that the City's Planning Commission and Zoning Board of Appeals had denied the City's request to rezone the maintenance facility from residential to agricultural, nevertheless the City changed the zoning. (Brief at 11.) Complainant also maintains that the City has twice considered moving the maintenance facility; once for construction of a road, and in 1994 because it had grown so fast during the three years that the City Superintendent did not believe expanding the amount of equipment at the facility was wise due to the residential area. (Brief at 11.) Finally, complainant asserts that "[t]he City has conceded that the present site of the maintenance facility is insufficient and it has recently been looking at alternative sites to relocate the maintenance facility". (Brief at 11.).

In addition to location arguments, complainant also argues that the maintenance facility has had a negative effect on the assessed value of her home as further proof of the unsuitability of the location for the maintenance facility. (Brief at 9.) Complainant asserts that "[t]he Assessor decreased the assessed value of Ms. Hoffman's home by five percentage points due to 'neighborhood factors'", which can only be attributable to the maintenance facility. (Brief at 9.) Additionally, complainant states that "her property value has decreased as a consequence of the noise and she would have a hard time selling her home due to the noise generated at the maintenance facility". (Brief at 9.)

The technical practicability and economic reasonableness of reducing or eliminating the emissions, discharges or deposits resulting from such pollution source.

Complainant states that Mr. Zak testified that there are five (5) actions necessary to reduce the problem that Ms. Hoffman is experiencing. (Brief at 7-9.) Mr. Zak testified that the equipment powered by internal combustion engines needs to have installed "equal to or better than a Nelson Model 400 muffler, Nelson being the manufacturer of mufflers" such as the backhoe end loader and the trucks larger than the pickup truck used at the facility. (Brief at 7-8, Tr. at 343, 357, Comp. Ex #3, 4, 6, 10, 25, and 34.) Next Mr. Zak stated that the aggregate pile should be relocated on site as far from complainant's residence as possible, south of the City building using it as a sound barrier. (Brief at 8, Tr. at 343-344, Comp. Ex #2.) Third, complainant asserted that the City building should be lined with drywall to "add mass to the walls of the building, preventing the sound from traveling out from the building through the existing metal shell" and unfaced fiberglass insulation to "absorb sound, preventing reverberation of the building, and adding an overall acoustic deadening of the interior of the building". (Brief at 8, Tr. at 345-346.) Fourth, Mr. Zak testified that a fence, to act as a sound barrier, should be built along the property line of Ms. Hoffman approximately 150 to 200 feet in length, roughly 20 feet high and a sufficient thickness to withstand the wind. (Brief at 8, Tr. at 346.) Finally, Mr. Zak stated that the back-up warning devices should be disconnected on the same equipment that have been designated to receive the Nelson 400 muffler or other equipment that is operated frequently on site. (Brief at 9, Tr. at 363.) Mr. Zak testified that the barrier is necessary because, "[l]ooking at the octave band data in previous exhibits, the mufflers, and the building lining, and even moving the aggregate pile, it's still not going to,. . . , bring the levels down to meet the numerical limits" (Tr. at 347.) Additionally, Mr. Zak stated that "in order to solve the problem, one needs to use a combination of the barrier along with the other suggested ways of solving the problem." (Tr. at 353.) Mr. Zak testified that the cost of adding the insulation and drywall to the City building would probably be in the neighborhood of a few $12,000, the cost of constructing the fence would be approximately between $12,000 to $15,000, and the average cost is around $250 for the Nelson 400 muffler. (Tr. at 362.)

In addition Mr. Zak also testified to the possibility of reducing the noise from the back-up warning devices. Mr. Zak stated "…that the OSHA regulations do not require backup alarm or beeper, if an observer is used in lieu of the backup beeper". (Tr. at 363.) Additionally, complainant submitted exhibit #46 which purports to be a copy of the applicable Occupational Safety and Health Administrative (OSHA) regulations, 29 C.F.R. 1926.601(4), which states:

> (4) No employer shall use any motor vehicle equipment having an obstructed view to the rear unless:
>
> (i) The vehicle has a reverse signal alarm audible above the surrounding noise level or:
> (ii) The vehicle is backed up only when an observer signals that it is safe to do so.

Complainant concludes that disconnecting or adding a switch to turn off the backup warning devices is feasible. (Brief at 9.)

Any subsequent compliance.

Complainant states that "[t]he City has not taken any substantive remedial measures to reduce the noise emissions from its maintenance facility". (Brief at 10.) Furthermore, complainant argues that "the reduction of the noise from one back-up alarm is not significant in light of the fact that the City engineer testified that the two backhoes, the motor grader, and the dump trucks are equipped with back-up alarms". (Brief at 10.) Finally, complainant argues that the City has previously promised to build sound barriers, install hospital grade mufflers on its heavy equipment, and disconnect the back-up alarms to resolve this case and has not done so. (Brief at 10.)

Respondent

The City states "[w]hile respondent acknowledges there are sounds from the maintenance facility which may affect some aspect of Complainant's life, the record shows that the sounds do not cause unreasonable interference with the enjoyment of life and thus do not violate the Act or Board regulations". (Resp at 9.) Citing to Wells Manufacturing Co. v. PCB, 73 Ill.2d 226, 383 N.E.2d 148, 150 (1978), the City argues that "[t]he 'reasonableness' of the noise must be determined in light of the factors set forth in Section 33(c) of the Act." (Resp. at 9.) The City, in its post-hearing brief, addresses each of the Section 33(c) factors which follow.

The character and degree of injury to, or interference with the protection of the health, general welfare and physical property of the people.

Citing to Kvatsak, PCB 89-182 (Aug. 30, 1990), the City states "[i]n considering the character of the interference caused by sound from the maintenance facility the standard to which the Board refers 'is that the noise substantially and frequently interferes with the use and enjoyment of life and property, beyond minor or trifling annoyance or discomfort', and that the record contains conflicting testimony and evidence concerning the extent of the noise from the maintenance facility". (Resp. at 10.) The City asserts that "[i]n this regard Complainant herself presents conflicting testimony, and the record contains conflicting evidence as some neighbors experience no discomfort or disturbance from the maintenance facility". (Resp. at 10.)

The City states that the major interference alleged by complainant is the interruption of and loss of sleep. (Resp. at 10.) The City argues that such interference according to the record "occurs very rarely". (Resp. at 11.) Respondent cites to seven places in the transcript where there is testimony by complainant concerning noise interfering with sleep, states in its brief that there is not a single entry in complainant's log (complainant's exhibit #37) where sleep had been disturbed, and that its witnesses, the acting Director of Public Works and City Engineer, both testified that non-working hour emergencies happened only five to seven times per year. (Resp. at 10-11.) The City argues that this record does not support complainant's claim of severe loss of sleep and does not amount to unreasonable interference. (Resp. at 11.)

Next the City states that the alleged stress caused by the interference which allegedly caused Ms. Hoffman to have surgery "is spurious and inflammatory and reflects poorly on her credibility in pressing this matter". (Resp. at 12.) Respondent asserts that complainant's implication in her formal complaint that the alleged noise pollution caused five surgeries omits out the facts "that four of the five surgeries (and probably one more) were performed on her eyes due to detached retinas, fluid build-up, dimness, and infection, and she has had eye problems all her life". (Resp. at 12.) In response to the claimed interference's of working in her garden, reading in her swing, inviting friends over and generally the use of her property, respondent argues that the record does not support a finding that unreasonable interference is occurring. (Resp. at 12.) Respondent states that "[t]here is no evidence that Complainant entertained friends and was interrupted or disturbed in doing so, she has only testified that it might happen". (Resp. at 12.) Respondent asserts that there was only one reference to the interruption of conversation and that was between Ms. Hoffman and Mrs. Gullberg (Ms. Hoffman's neighbor) when they were trying to converse with each other from their own respective yards and were across the street from one another. (Resp. at 13.)

In support of the City's contention that the record does not provide support for a finding of unreasonable interference, it maintains that its witnesses testified (Tr. at 702-706, 786-790 and 794-801), neighbors to Ms. Hoffman, generally that they heard the noise from the maintenance facility but it did not bother them or interfere with their enjoyment of life, which contradicts the potentially biased testimony of complainant and complainant's witnesses' testimony. (Resp. at 13-15.) Additionally, respondent argues that although the noise measurements taken by the Agency and itself show exceedences in two areas, those exceedences are attributable to the back-up warning devices which are exempted by 35 Ill. Adm. Code 901.107(b). (Resp. at 15-17.) Finally, respondent asserts that complainant may have become "…obsessed with recording sound from the facility, to the extent that she may no longer be able to evaluate which sounds truly interfere, but instead finds all sound intrusive" because some of the entries into complainant's logs were statements wondering why there are no sounds to record. (Resp. at 15-17, Comp Ex#37; Resp. Ex.#6 and 7)

To conclude the City states that "Complainant testified that the major source of interference is sleep interruption and loss, that claim is not supported by the evidence in the record", and that "[h]er other complaints of interference are contradicted by not only her own testimony but also that of local residents who live in close proximity to the maintenance facility yet experience no disturbance or interference with the enjoyment of their lives". (Resp. at 17-18.) Therefore any interference alleged does not support a finding that the interference is unreasonable. (Resp. at 18.)

The social and economic values of the pollution source.

The City states that the facility provides substantial social and economic benefits to the community because it is an integral part of performing necessary governmental functions such as road and sewer repair, snow removal, salt spreading, and street sweeping. (Resp. at 18.) Furthermore, the City states that "[t]he work carried out at the maintenance facility is done by

public mandate and supervised by the local governing body." (Resp. at 18.) Finally, the City states that the facility employs 17 people including the City Engineer and secretary. (Resp. at 18.)

The suitability or unsuitability of the pollution source in the area in which it is located, including the question of proximity of location in the area involved.

The City asserts that "[t]he record indicates the maintenance facility is suitably located to serve its purpose in providing repair services to roads, sewers, lift stations and the collection system operating with the City of Columbia." (Resp. at 18-19.) In support of this contention the City cites to the testimony of Mr. Kenneth Vaughn, City Engineer, who stated "[i]t is a centrally located facility which enables us to provide quick response time anywhere that response would be needed in the city for any type of a situation"(Tr. at 718), and that such location is "extremely desirable"(Tr. at 719). (Resp. at 19.) Additionally, the City argues that complainant's statements that the facility is not suitable or compatible because of the surrounding residential area is not shared by other city residents by citing the testimony of Mrs. Zoeller who stated "I don't see how I can complain", "I feel very lucky, I'm the very first street that ever gets plowed when it snows, so I'm always able to go to work everyday"(Tr. at 804). (Resp. at 19.) Finally, the City asserts that "[a]lthough the Complainant has priority of location, in that she bought her property in 1959 (Tr. at 8) and Respondent not until 1967 (R. Ex. 18)[7], such will not override other considerations in this case". (Resp. at 19.)

The technical practicability and economic reasonableness of reducing or eliminating the emissions, discharges or deposits resulting from such pollution source.

The City cites to Dettlaff v. Baodo, PCB 92-26 (July 1, 1993), which states "[t]he focus of inquiry into the technical practicability and economic reasonableness of control measures is on what can be done about the allegedly offensive noise", and argues that the relief alternatives presented by complainant are not economically reasonable, or are not supported by the record. (Resp. at 20.)

First respondent argues that complainant's request for cease and desist "is clearly inappropriate considering the cost of obtaining property that is equally suitably located and building a new facility, as well as the interruption in services which would be caused by such a move". (Resp. at 20.) In support of the City's argument it cites to the testimony of Mr. Coats witness for complainant and former mayor who testified that the cost of locating a similar facility would be $150,000. (Resp. at 20, Tr. at 224-226.) Furthermore the City cites to its witness, the City Engineer, who estimated that services would be interrupted for at least two to three weeks while the facility was being moved. (Resp. at 20, Tr. at 721.)

Next respondent argues that the "allegations do not merit the extensive measures outlined by Mr. Zak, especially in light of testimony of other local residents, the City

[7] The respondents "R. Ex. 18" means Resp. Ex# 18.

Engineer, and Dr. Weissenburger's testimony that a noise barrier and drywall and insulation added to the maintenance building are unnecessary." (Resp. at 22.) Respondent argues that Mr. Zak's proposed recommendations for the abatement of noise at the facility are based on his "opinion without inspecting the maintenance building or having personally heard the sound and observed the activity at the site". (Resp. at 21, Tr. at 385, 398.) Respondent argues that the estimated costs of Mr. Zak for the acoustical fence of between $12,000-$15,000, which is based solely on his experience in a prior unrelated case before the Board, are underestimated. (Resp. at 21.) Respondent argues this based on the cost estimates of between $52,000-$57,000 (Tr. at 743-744), not including engineering design or soil borings and analysis, as testified to by its witness the City Engineer based on case specific information. (Resp. at 21.) Additionally the City argues that "there is no evidence in the record that any sound emanates from the maintenance building, thus the recommendation that it be drywalled and insulated is not supported and is superfluous". (Resp. at 21.) Finally, respondent, argues that the record reflects that the only source of noise from the backup warning devices that is allegedly creating a unreasonable interference is the tractor or the Caterpillar equipment at the facility and not from all trucks equipped with backup warning devices. (Resp. at 17, Tr. at 71.)

Any subsequent compliance.

The City simply states that it has lowered the volume control from high to low for the back-up bell on the endloader and the City Engineer testified that the sound was "noticeably lower" (Tr. at 735). (Resp. at 23.)

To conclude, the City states that "after full consideration of all the facts and circumstances in the record, and in light of the Section 33(c) factors, the Board must find the noise from the maintenance facility does not constitute an unreasonable interference with Complainant's enjoyment of life and lawful activity in violation of Section 24 of the Act and Section 900.102 of the Board's regulations." (Resp. at 24.) Alternatively, the City states that should the Board determine there is unreasonable interference, the remedies ordered should be limited to moving the aggregate piles, installing hospital grade mufflers and reducing the volume of the tractor back-up alarms where possible. (Resp. at 24.)

Discussion

Before determining the issue of nuisance, the Board will consider two relevant issues raised by the parties: classification of the maintenance facility pursuant to the SLUCM code and the exemption of warning devices set forth in 35 Ill. Adm. Code 901.107(b). Although neither issue will be dispositive of the matter of nuisance, both issues pertain to the weight of evidence presented to the Board.

Classification

Site classification pursuant to SLUCM code, set forth generally in 35 Ill. Adm. Code 901, determines the numerical sound limitations that can be legally emitted from one piece of property to another pursuant to 35 Ill. Adm. Code 901.102 and 901.103. As stated above,

complainant argues that the City's maintenance facility should be classified as a Class "B" site and the City argues that it should be classified as a Class "C" site. While the matter before the Board is not a complaint based on an alleged numerical violation, evidence of numerical exceedences is relevant to the Board's determination but is not dispositive of the matter. Additionally, as stated above, whether the City's maintenance facility is classified as Class "C" or Class "B" does not change the fact that both parties agreed that numerical exceedences were recorded. However, the extent of the exceedences change because the numerical limitations for Class "B" and Class "C" are different. Class "C" numerical limitations are less stringent than those of Class "B" for sound emitted to the Class "A" site, residential property.

In In the Matter of: Noise Pollution Control Regulations, (July 31, 1973), R 72-3, the Board stated "[t]he classification of land is dependent on the actual use being made of the land, rather than on anticipated or planned use such as could occur if the classifications were based on zoning". (Op. at p. 23.) Further in the same opinion the Board states "[a]ctual land use is an appropriate basis in that the regulation is designed to protect people where they actually live and work, rather than protecting vacant property in anticipation of people living and working there". (Op. at 24.)

We find that the actual use of the property dictates the classification, rather than the zoning or who or what entity is conducting the activity. In this case we have a maintenance facility which provides for the general maintenance of the roads and other public works in the City. There are no SLUCM codes for road maintenance and related activities. Site Classification "B" generally includes, motion picture production, communication, wholesale trade, retail trade, personal and financial services, business services, repair services, professional services, contract construction services (building construction, plumbing, heating, painting, etc.), governmental services (executive, legislative, and judicial services, police, fire, civil defense and other protective services), recreational, and public assembly activities. Site Classification "C" generally includes, manufacturing, petroleum refining, motor vehicle transportation, marine craft transportation, automobile parking, utilities, agricultural and related activities, forestry, fishing, mining, and other resource production and extraction activities.

We find, considering the types of activities carried out at the maintenance facility, that the site tends more to be a manufacturer, motor vehicle transportation, agricultural, mining and resource production and extraction classification than a services or retail type facility. Therefore we would find the City's maintenance facility to fall under the "C" classification. This is not to say that all city maintenance facilities would fall under the "C" classification but the facts of this case dictate such finding. As such the numerical readings entered into the record by the parties should be compared in light of emissions limitations from a Class "C" site to a Class "A" site as evidence tending to support or not support an alleged nuisance violation.

Exemption

When the Board adopted the numerical limitations found in 35 Ill. Adm. Code 901.102 through 901.106 it also created certain exceptions as set forth at 35 Ill. Adm. Code 901.107. In this case the parties are arguing whether 35 Ill. Adm. Code 901.107(b) applies to the backup warning devices connected to the large trucks at the maintenance facility. Section 901.107(b) states "Section 901.102 through 901.106 inclusive shall not apply to sound emitted from emergency warning devices and unregulated safety release valves".

This action has been brought pursuant to 35 Ill. Adm. Code 900.102 (general nuisance prohibition) and not pursuant to Section 901.102 through 901.106 (numerical limitation sections). Therefore the exemption does not apply in this case. However, as stated above, while this action is not brought pursuant to an alleged numerical violation, evidence of a numerical exceedences is relevant. Thus a discussion as to whether the backup warning devices were intended to be included in the exception is beneficial.

In In the Matter of: Noise Pollution Control Regulations, (July 31, 1973), R 72-3, the Board stated:

> Rule 208(b) (901.107(b)) exempts warning and safety devices from the numerical limitations. This was done because the social benefits far out-weigh any annoyance and because the noise emissions occur infrequently and usually for short durations. It should be noted that the exception would also cover the periodic maintenance and testing of these devices. Not covered by the exception would be devices which may in some ways be similar but which are used routinely in the course of operation such as circuit breakers used for switching electrical power.

(Op. at 30.)

The backup warning devices associated with the larger trucks at the maintenance facility fall under the "similar but which are used routinely" exclusion from the exception that was discussed by the Board. The Board does recognize the social benefits associated with the backup warning device but we believe such device was not the type of warning devices the Board intended to exempt from the numerical regulations. Therefore evidence concerning numerical exceedences attributable to the backup warning devices is relevant insofar as the alleged nuisance violation.

Nuisance violation

The threshold issue in any noise nuisance enforcement proceeding is whether the sounds have caused some type of interference with complainant's enjoyment of life or lawful business activity. Interference is more than an ability to distinguish sounds attributable to a particular source. Rather, the sounds must objectively affect complainant's life or business activities. (See e.g., Village of Matteson v. World Music Theatre Jam Productions, LTD. and Gierczyk Development, Inc., (April 25, 1991), PCB 90-146, Kvatsak v. St. Michael's Lutheran Church, (August 30, 1990) PCB 89-182; Zivoli v. Dive Shop, (March 14, 1991)

PCB 89-205.) Testimony to the effect that the sound constitutes an interference solely because it could be heard is insufficient to support a finding beyond a "trifling interference, petty annoyance or minor discomfort." (Wells Manufacturing Co. v. PCB, 73 Ill.2d 226, 383 N.E.2d 148, 150 (1978).) Based on the testimony, numerical noise readings, and the record, the Board finds that sounds emanating from the City's maintenance facility caused, and continues to cause, an interference with Ms. Hoffman's enjoyment of life. The Board notes, however, that not all of the testimony supports a finding of interference on every day the maintenance facility is in operation or from every alleged source of noise as discussed below.

The Board finds that the testimony presented at the hearing demonstrates the necessary interference. Complainant presented the testimony of Mr. Zak who conducted numerical noise readings on July 21, 1995 which demonstrate that the City's maintenance operation was exceeding the Board's numerical noise limitations at least when those measurement were taken. Additionally, the City's own measurements demonstrate the same, and respondent admits that the sound affects complainant's life. In Ferndale Heights Utilities Co. v. Illinois Pollution Control Board, 44 Ill. App.3d 962, 3 Ill.Dec. 539, 358 N.E.2d 1224, (1st Dist. 1976), the court upheld the Board's finding of interference based on testimony such as "a great source of irritation" and "awakened once or twice a year". (358 N.E. 2d 1229.) The record in this matter contains similar testimony and evidence as in Ferndale.

Sections 900.l0l and 900.l02, which apply here, were given judicial interpretation in Ferndale. The First District Court held the regulatory language to be constitutional since sufficient standards could be comprehended from reading Section 24, the Board's regulations, and the guidelines for enforcement cases found in Section 33(c) of the Act. (358 N.E.2d 1228.) The Court affirmed the Board's finding of unreasonable interference with the enjoyment of life, in light of adequate testimony describing the noise; explaining the type and severity of the interference caused by the noise; and indicating the frequency and duration of the interference. (Id. at 1229.)

Once the Board determines that interference is caused by a respondent's activities the Board must determine if that interference is unreasonable. The "reasonableness" of the noise pollution must be determined in reference to statutory criteria in Section 33(c) of the Act. Wells Manufacturing Company v. Pollution Control Board, 73 Ill.2d 226, 383 N.E.2d l48 (l978); Mystic Tape, Div. of Borden, Inc. v. Pollution Control Board, 60 Ill.2d 330, 328 N.E.2d 5 (l975); Incinerator, Inc. v. Pollution Control Board, 59 Ill.2d 290, 3l9 N.E.2d 794 (l974); City of Monmouth v. Pollution Control Board, 57 Ill.2d 482, 3l3 N.E.2d l6l (l974). However, complainants are not required to introduce evidence on these criteria. (Processing & Books v. Pollution Control Board, 64 Ill.2d 68, 35l N.E.2d 865 (l976).) We now consider each of these factors in determining whether the interference was unreasonable.

Character and Degree of the Injury or Interference

Section 33(c)(1) directs the Board to consider the character and degree of any interference caused by the noise emitted from the City's maintenance facility. The standard to which the Board refers to is whether the noise substantially and frequently interferes with a

lawful business activity, beyond minor trifling annoyance or discomfort. (See, e.g., Brainerd v. Hagen, (April 27, 1989) PCB 88-171, 98 PCB 247.) As stated above, complainant presented evidence through testimony at the hearing and Comp. Ex.#37 as to the character and degree of injury or interference. Complainant states that the main interference or injury is that noise prohibits her from sleeping through the night and prohibits her from using her yard. Based on the testimony and the record, we find Ms. Hoffman's particular location places her in relation to the facility as currently configured to be more receptive to the noise generated by the maintenance facility than that of respondent's witnesses who live farther away from the facility, behind the City's building and at a higher elevation. Furthermore, as stated in Discovery South Group v. Illinois Pollution Control Board, "to show 'unreasonable interference' [complainant] Matteson was not required to show that all of its citizens were affected or that those affected were affected to the same degree." (657 N.E.2d 57.)

Having found that the maintenance facility is creating a substantial and frequent interference, the Board also finds that not all activities at the facility are attributing to the interference. In reviewing the record and especially the testimony of Ms. Hoffman, the interference has been demonstrated to be the result of (1) engine noise from the large trucks as pictured in Comp. Ex#s 3, 4, 6, 10, 25, and 34, (2) the backup beepers or warning devices associated with only the Caterpillar equipment as testified to by Ms. Hoffman, and (3) the loading and unloading of the aggregate. The record does not support a finding that the street sweeper and other equipment have created a nuisance. Furthermore there has been no testimony or other evidence that the maintenance facility building is a source of noise which has unreasonably interfered with Ms. Hoffman's enjoyment of life. Based on the record in this case, we find that the noise generated by roar of the engines, the backup warning devices on the Caterpillar equipment, and the loading and unloading of the aggregate substantially and frequently interfere with Ms. Hoffman's use of her property.

Social or Economic Value of the Source

When considering this factor the Board must weigh the value of the source versus the social or economic value it provides. The City argues that the maintenance facility provides substantial social and economic benefit to the community. Complainant does not deny the social or economic value but argues that while there may be social or economic value the location of the maintenance facility is not necessary to carry out its functions. We agree with complainant that steps can be taken to abate the noise levels without impeding on the social or economic value of the facility.

Suitability or Unsuitability of the Source, Including Priority of Location

Both parties agree that Ms. Hoffman has priority of location. Additionally, both parties admit that the facility currently has proper zoning. We find, although the location of the maintenance facility may be beneficial as far as carrying out its purpose, the record reflects that the facility's location does not correspond to the neighboring land uses. Complainant's exhibit #2 clearly shows that the facility abuts residential property on the side which is closest

to the facility. Considering the priority of location and the proximity of the residential property to the City's maintenance facility, the noise source is unsuitable.

Technical Practicability and Economic Reasonableness of Control

The record contains a substantial amount of evidence concerning the technical practicability and the economic reasonableness of the suggested controls methods. Complainant has requested that the facility be relocated or that several control devices be instituted. Mr. Zak of the Agency, for complainant, and Dr. Weissenburger, for respondent, presented conflicting evidence concerning the technical practicality of the control devices for the maintenance facility. Additionally, the parties presented conflicting evidence as to the costs for implementing the recommended control measures. As discussed below we find that some control devices or actions to be technically practical and economically reasonable, while others are not.

Subsequent Compliance

The City states that it has reduced the noise from one backup warning device by turning the volume down. Considering the record and the complained of noise which is interfering with Ms. Hoffman's enjoyment of life the reduction of one source does not show subsequent compliance. Ms. Hoffman complains of noise from the roaring engines and the loading and unloading of aggregate in addition to the warning devices which are located on more than just one vehicle.

After considering all of the above factors and the record we find that the City's maintenance facility is creating an unreasonable interference in violation of Section 900.102. While there is some social value of the maintenance facility, it is causing a substantial and frequent interference, its location is unsuitable considering it does not have priority of location and surrounding land uses are residential, there has been no subsequent compliance and as discussed more fully below there exists technically practicable and economically feasible control devices that can be implemented which will reduce the noise. Based on these findings the Board will consider the appropriate remedies associated with the noise source attributed to the unreasonable interference.

Remedy

Normally, in determining the proper remedy in an enforcement case, the Board must consider the factors set forth in Section 33(c) and 42(h) of the Act. Since the Board has considered the Section 33(c) factors in determining that an unreasonable interference has occurred and no civil penalties were requested, we will limit the discussion of the Section 33(c) factors in terms of fashioning a remedy. First, complainant requests that the Board order the maintenance facility to be relocated. We find that ordering the City to relocate the maintenance facility is not justifiable with this record considering the character and degree of the injury or interference and the technical practicability and economic reasonableness of relocating the maintenance facility, and the sources attributable to the unreasonable

interference. The $150,000 cost associated with relocating the facility is not economically reasonable considering the type of interference and the alternative control options.

Alternatively, complainant requests that the following five actions be implemented to reduce the noise: (1) equal to or better than Nelson Model 400 mufflers be put on the equipment such as the backhoe end loader and the trucks shown in Comp. Ex #s 3, 4, 6, 10, 25, and 34; (2) that the aggregate pile be relocated on site as far from complainant's residence as possible; (3) that the City building should be lined with drywall and unfaced fiberglass insulation; (4) an acoustical sound barrier be built along the property line of Ms. Hoffman approximately 150 to 200 feet in length, and roughly 20 feet high; and (5) the backup warning devices have on/off switches installed on the same equipment that have been designated to receive the Nelson 400 muffler. Complainant argues that all of the above actions are necessary to reduce the noise.

In considering complainant's request and the record, especially the testimony of Mr. Zak, we find that not all of the above actions are necessary to reduce the noise attributable to the unreasonable interference. It is evident from Mr. Zak's testimony that he was considering all aspects to the facility which may have attributed to the numerical exceedences. This approach may be appropriate if the action before us was an alleged numerical violation. However, this matter is before the Board pursuant to a nuisance complaint. The Board is limited to reducing the noise that has been demonstrated to be causing the nuisance. In some cases a source of nuisance may be eliminated but there still may exist sources of numerical exceedences. Therefore not all the requested control mechanisms are necessary in this case as discussed below.

The Board has determined that the record does not reflect that maintenance facility building is a source of noise causing nuisance, and therefore, to require that it be lined with drywall and have unfaced fiberglass insulation installed is not economically reasonable and is not necessary to reduce the demonstrated unreasonable interference. Thus the Board will not order the City to undertake any actions related to it.

The Board found that the loading and unloading of aggregate, which includes but is not limited to the dirt, rock and salt piles is a source of the noise which results in unreasonable interference. The record does not reflect the cost of moving the aggregate piles but respondents stated that should the Board require reduction in noise it should be limited to moving the aggregate pile in addition to adding hospitable grade mufflers and reducing the backup beepers on the trucks. Since the City has agreed in the alternative to move the aggregate pile and it is apparent that City has the means to do so the Board finds that moving the aggregate piles is a practical and economically reasonable control mechanism which should be implemented at the maintenance facility and will be included in the Board's order.

Another source the Board found to be an unreasonable interference was the roaring of the engines from the large trucks. Mr. Zak testified that the cost of a Nelson 400 muffler was approximately $250 per muffler and that this should reduce the engine noise to an acceptable level. As discussed above adding Nelson 400 mufflers or the equivalent was an acceptable

alternative to respondents. Considering the cost of adding the mufflers on six of the current vehicles is approximately $1,500, we find that that it is a practical and economically reasonable control mechanism which should be implemented at the maintenance facility on its current vehicles the backhoe end loader and the larger trucks shown in Comp. Ex #s 3, 4, 6, 10, 25, and 34.

As discussed above the Board finds that the backup warning devices on the Caterpillar equipment at the site are causing an unreasonable interference. Complainant entered into the record OSHA regulations pertaining to motor vehicles and argued that an observer may be used instead of the audible warning device. At 29 C.F.R. XVII Section 1926.602(a)(9)(i) and (ii) (audible alarms for material handling equipment), which would specifically apply to the Caterpillar equipment at the facility states:

> (i) All bidirectional machines, such as rollers, compacters, front-end loaders, bulldozers, similar equipment, shall be equipped with a horn, distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operative condition.
>
> (ii) No employer shall permit earthmoving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.

Respondent does not argue that OSHA requires audible warning devices or that there are State regulations which would require audible warning devices on the Caterpillar equipment at the facility and stated that reducing the backup warning devices on the Caterpillar equipment should be one of the remedies should the Board find unreasonable interference.

The Board finds there exists a control mechanism to eliminate the nuisance noise associated with the backup warning devices on the Caterpillar equipment that is technically feasible and economically reasonable. The Board will not order the City to add on/off switches to the warning devices but will order the City to take action consistent with applicable federal and State law to reduce or eliminate the noise from the backup warning devices.

The final control mechanism requested by complainant is the building of an acoustical barrier. Complainant argues that the cost of the barrier would be between $12,000 and $15,000. Respondent argues that the cost will be between $52,000-$57,000. As noted above, Mr. Zak testified that the barrier is necessary because in his opinion, "[l]ooking at the octave band data in previous exhibits, the mufflers, and the building lining, and even moving the aggregate pile, it's still not going to,. . . , bring the levels down to meet the numerical limits" (Tr. at 347.) As stated previously, this matter is before the Board pursuant to a nuisance complaint and the control mechanisms must be related to the finding of nuisance. While evidence concerning numerical exceedences is relevant in considering an unreasonable

interference, basing the remedy on the goal of complying with the numerical limitations is not appropriate. We find that the acoustical barrier is not warranted since no numerical violations are alleged. The record does not demonstrate its necessity as part of controlling the noise which has led to an unreasonable interference. Furthermore, only some of the noise sources have been demonstrated to be an unreasonable interference and we are ordering remedial steps to be taken concerning these. The sound barrier is requested to reduce all noise emanating from the facility. Considering the character and degree of the injury or interference, it is not economically reasonable to require the construction of the sound barrier.

Conclusion

According to Title VI: Section 24 of the Act and Section 900.102 of the Board regulations, complainant has a right to the enjoyment of their lives and property. For the reasons stated above we find that respondent violated Section 24 of the Act and the Board's regulations at 35 Ill. Adm. Code 900.102.

In sum we find, based on this record and the finding of unreasonable interference, and after considering the factors of Section 33(c) of the Act, the following control activities should be implemented: (1) equal to or better than Nelson Model 400 mufflers be put on the equipment such as the backhoe end loader and the trucks shown in Comp. Ex #s 3, 4, 6, 10, 25, and 34; (2) that the aggregate pile be relocated on site as far from complainant's residence as possible as depicted on Comp. Ex#2; and (3) the noise nuisance attributable to the backup warning devices on the Caterpillar equipment including but not limited to those depicted in Comp. Ex#s, 10, 13, and 14, should be eliminated consistent with State and federal regulations.

ORDER

For the foregoing reasons, the Board finds that respondent, City of Columbia, is in violation of Section 24 of the Environmental Protection Act and 35 Ill. Adm. Code 900.102 and hereby orders respondent, City of Columbia, to undertake and perform the following actions:

1. Respondent shall cease and desist from future violations of Section 24 of the Environmental Protection Act and 35 Ill. Adm. Code 900.102.

2. Respondent shall install equal to or better than Nelson Model 400 mufflers be put on the equipment such as the backhoe end loader and the larger trucks shown in Comp. Ex #s 3, 4, 6, 10, 25, and 34;

3. Respondent shall relocate the aggregate piles on site as far from complainant's residence as possible as marked at hearing on Comp. Ex#2;

4. Respondent shall cease and desist from causing noise nuisance due to the result of sound emanating from the audible warning devices on the Caterpillar

equipment at the facility depicted in Comp. Ex#s 10, 13, and 14 consistent with State and federal law.

IT IS SO ORDERED.

Board Member J. Theodore Meyer concurred.

Board Member K. Hennessey abstained.

Section 41 of the Environmental Protection Act (415 ILCS 5/41) provides for the appeal of final Board orders within 35 days of the date of service of this order. (See also 35 Ill. Adm. Code 101.246, Motion for Reconsideration.)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Board, hereby certify that the above opinion and order was adopted on the _____ day of _____, 1996, by a vote of _____.

_____
Dorothy M. Gunn, Clerk
Illinois Pollution Control Board