

ILLINOIS POLLUTION CONTROL BOARD  
April 16, 1998

DONETTA GOTT, LYNDELL CHAPLIN, )  
GARY WELLS, ERNEST L. ELLISON, and )  
MAXINE ELLISON, )  
 )  
Complainants, )  
 )  
v. ) PCB 96-68  
 ) (Enforcement - Air - Citizens)  
M'ORR PORK, INC., an Illinois corporation, )  
 )  
Respondent. )

DUNCAN B. COOPER, III OF HEYL, ROYSTER, VOELKER, & ALLEN  
APPEARED ON BEHALF OF COMPLAINANTS; and

GEORGE J. LEWIS OF LEWIS, BLICKHAN, LONGLETT, & TIMMERWILKE  
APPEARED ON BEHALF OF RESPONDENT.

OPINION AND ORDER OF THE BOARD (by K.M. Hennessey):

This is a citizens' enforcement action concerning odors from a hog confinement building and outdoor waste lagoon just north of the Village of Kinderhook, in Pike County, Illinois. Respondent M'Orr Pork, Inc. (M'Orr Pork) operates the confinement and lagoon. Complainants Donetta Gott, Lyndell Chaplin, Gary Wells, Ernest Ellison, and Maxine Ellison live in Kinderhook.

In an interim opinion and order dated February 20, 1997, the Board found that odors from the confinement and lagoon had caused air pollution in violation of the Environmental Protection Act and the Board's regulations. The Board required M'Orr Pork to evaluate measures to abate the odors. In this final opinion and order, the Board requires M'Orr Pork to perform certain odor abatement measures, to pay a civil penalty of \$2,500, and to cease and desist from further violations.

PROCEDURAL HISTORY

In its interim opinion and order of February 20, 1997, the Board found that odors from M'Orr Pork's hog confinement and lagoon unreasonably interfered with complainants' enjoyment of their lives and property, which constitutes air pollution in violation of Section 9(a) of the Environmental Protection Act (Act), 415 ILCS 5/9(a) (1996). The Board also found that M'Orr Pork violated 35 Ill. Adm. Code 501.402(c)(3), which requires certain

livestock facilities to practice adequate odor control methods and technology to prevent air pollution.

After finding these violations, the Board found that the record contained insufficient information for the Board to order M'Orr Pork to perform specific odor abatement measures. Accordingly, the Board required M'Orr Pork to have a qualified, independent individual or firm evaluate measures to abate odors from the hog confinement and lagoon and to submit a report on those measures by May 20, 1997. In addition, the interim opinion and order provided for a thirty-day period after the filing of the evaluation report for complainants to respond to the report and for either party to request a hearing on odor abatement measures. The Board stated that after the evaluation report is filed and any response is filed or hearing is held, the Board would issue a final opinion and order, in which the Board would consider whether to impose a civil penalty on M'Orr Pork and whether other relief would be appropriate.

M'Orr Pork timely filed its evaluation report. Complainants filed no response to the report. However, on June 17, 1997, complainants filed a motion to have a hearing on odor abatement measures. Chief Hearing Officer Michael Wallace granted the motion and held the hearing on September 30, 1997. M'Orr Pork filed a post-hearing brief on November 17, 1997. On January 2, 1998, complainants filed a motion for leave to file instanter their post-hearing brief. Complainants explained that on the date their post-hearing brief was due, December 23, 1997, they mailed the document to the hearing officer and opposing counsel, but inadvertently failed to file it with the Clerk's office. The motion for leave to file instanter is granted.

### FINDINGS OF FACT

In its interim opinion, the Board made various findings of fact that are incorporated herein by reference. Based on M'Orr Pork's evaluation report and other evidence presented at the September 30, 1997, hearing, the Board will now make additional findings of fact relevant to the issues of remedy, including whether to impose a penalty.<sup>1</sup>

### Odor Abatement Measures

Dr. Dwaine S. Bundy prepared M'Orr Pork's evaluation report (M'Orr Pork Exh. AH12) and testified on behalf of M'Orr Pork. Dr. Bundy is a professor in the agricultural engineering department at Iowa State University and has extensive experience with livestock odors. Tr. at 67-73; M'Orr Pork Exh. AH12, Att. Dr. Bundy visited the M'Orr Pork farm five times and each time also visited the east-west street on the north side of Kinderhook where complainants Ellison and Wells live. Dr. Bundy assessed air quality on each of these visits. The visits took place on the following dates at the time of day indicated: March 19, 1997,

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<sup>1</sup> The transcript of the September 30, 1997, hearing is cited as "Tr. at \_." M'Orr Pork's exhibits are cited as "M'Orr Pork Exh. AH\_" and complainants' exhibits are cited as "Comp. Exh. AH\_." Complainants' post-hearing brief is cited as "Compl. Br. at \_."

(midday); May 3, 1997, (midday); on or about August 1, 1997, (evening); on or about September 1, 1997, (evening); and September 30, 1997, (morning). Tr. at 73-78, 116-117; M'Orr Pork Exh. AH12 at 1, Fig. 1.

### Manure Pits

Dr. Bundy recommends that M'Orr Pork empty the manure pits beneath the confinement every 10 to 12 days. This measure is designed to minimize odors. After each emptying, Dr. Bundy recommends that M'Orr Pork refill the pits with approximately four inches of fresh water. The water will help clean the pits during emptying, thereby diminishing building odors. M'Orr Pork presently implements these practices, but it is unclear from the record when it began to do so. M'Orr Pork Exh. AH12 at 1, 3, 5.

### Wash Confinement

Dr. Bundy recommends that M'Orr Pork wash the confinement building between groups of pigs. It will "reduce the amount of dust and also the odor being exhausted from the building." M'Orr Pork Exh. AH12 at 3, 5. M'Orr Pork currently does this, but the record does not disclose when it began this practice. M'Orr Pork Exh. AH12 at 3.

### Additives in Hog Feed

M'Orr Pork started adding oil to its hog feed in early 1996. Dr. Bundy recommends this practice. It will "reduce dust in the building up to 50%," thereby decreasing odors because approximately "50 to 60 percent of the odors from the exhaust air is carried on dust particles." Tr. at 87-89; M'Orr Pork Exh. AH12 at 3, 5. The oil is a pure vegetable oil. Tr. at 31-32. It costs M'Orr Pork approximately \$230 per month. Tr. 32-33.

M'Orr Pork also adds "Micro-Aid" to its hog feed "as per manufacturers recommendations to reduce the ammonia and hydrogen sulfide levels in the building." M'Orr Pork Exh. AH12 at 3. Dr. Bundy recommends this practice. Tr. at 87; M'Orr Pork Exh. AH12 at 5. Micro-Aid costs M'Orr Pork \$120 per month. Tr. at 33. Dr. Bundy testified that he has seen many studies showing that Micro-Aid as a feed additive reduces ammonia as much as 70% and a few studies showing that it also reduces hydrogen sulfide. Tr. at 85-86. It is unclear when M'Orr Pork began adding Micro-Aid to the hog feed.

### Drainage Tube Extension

In the spring of 1996, M'Orr Pork added an extension to the drainage tube from the confinement to the lagoon so that manure enters the lagoon below its liquid surface. The end of the tube is approximately four to five feet below the lagoon's surface. Before M'Orr Pork extended the tube, fluid from the confinement was deposited on top of the lagoon surface. Dr. Bundy recommends the practice of discharging beneath the lagoon surface and stated that it will reduce odors when the pits are emptied. Tr. at 30, 89; M'Orr Pork Exh. AH12 at 4-5.

### Fast-Growing Trees

South of the lagoon and confinement building, M'Orr Pork planted 250 fast-growing trees known as "Austrees." M'Orr Pork Exh. AH12 at 2, 4, Fig. 1. The Board found in its interim opinion that the Austrees were planted at the end of April 1996. The trees were two feet tall when planted and approximately 11 feet tall as of the September 30, 1997, hearing. Tr. at 13-15. The 250 Austrees cost M'Orr Pork \$1,700. In addition, M'Orr Pork incurs \$120 annually to fertilize the trees. Tr. at 16-17.

Dr. Bundy recommends the Austrees. Tr. at 80-81; M'Orr Pork Exh. AH12 at 2, 4-5. He stated that the trees are sturdy, that they grow approximately 6 to 8 feet in height annually, and that they will reach a height of approximately 40 to 50 feet. Tr. at 80-81; M'Orr Pork Exh. AH12 at 2. Austrees are commonly planted around livestock operations "to filter dust and aerosol particles;" they "serve the purpose of diverting the air flow and increasing air mixing." Tr. at 81-82; M'Orr Pork Exh. AH12 at 2, 4. Dr. Bundy also testified that the few studies that have been done indicate that "there is some absorption [of odors by leaves] taking place." Tr. at 81-82.

Dr. Bundy would not have M'Orr Pork supplement the Austrees with slower-growing trees because they would "not add much to short term dispersing of odors" and because the Austrees "will be tall enough within a few years to help in the dispersion of odors." M'Orr Pork Exh. AH12 at 4.

### Corn

M'Orr Pork plants 35 acres of corn in the field to the south of the lagoon and confinement and north of Kinderhook. The planting extends approximately 400 yards from north to south and approximately 800 yards from east to west. Tr. at 18-19; M'Orr Pork Exh. AH12 at 4-5, Fig. 1. Dr. Bundy recommends this practice. M'Orr Pork Exh. AH12 at 4-5. He explained that the corn field "acts as a vegetative buffer[,] thus[] absorbing some of the odors and helping to divert the air stream." M'Orr Pork Exh. AH12 at 4. Dr. Bundy testified that his research shows that vegetation reduces odor downwind of livestock units. He also testified that M'Orr Pork plants its corn in the proper amount and location. Tr. 82-83. It is unclear from the record when M'Orr Pork began this practice.

### Spray System

M'Orr Pork installed an "Ecolo Odor Control System" on April 21, 1997. The system includes 25 vertical steel pipes, each with a spray nozzle on top at a height of approximately 15 feet. The spray nozzles emit the Ecolo solution, discussed below. Twenty nozzles are located around the southern edge of the lagoon and five are located directly south of the confinement's exhaust fans (the fans are on the south side of the building). M'Orr Pork spent \$4,800 for the Ecolo system, which includes a tank to hold the Ecolo solution and a computerized pump. The Ecolo solution costs M'Orr Pork approximately \$700 per month. Tr. at 24-28, 58; M'Orr Pork Exh. AH12 at 4, Fig. 1. The nozzles spray for 30 seconds

every five minutes from 6:30 p.m. to 11:00 p.m. and from 4:00 a.m. to 8:00 a.m. For the rest of the day, the nozzles spray for 20 seconds every hour. David Orr explained that the system sprays more frequently in the morning and evening hours because that is when most people are outside. Tr. at 28-29; M'Orr Pork Exh. AH12 at 4.

Dr. Bundy recommends that M'Orr Pork use the Ecolo system and he testified that it is an effective practice. Tr. at 105; M'Orr Pork Exh. AH12 at 4-5. He explained that the spray nozzles emit a "formulation of oils from plant extracts blended to neutralize specific types of odors." M'Orr Pork Exh. AH12 at 4. He also noted that research at Iowa State University "shows that the use of additives can be an effective way to reduce odors from manure surfaces." M'Orr Pork Exh. AH12 at 4.

James Gessner of New Recycling Technology, Inc., the midwest distributor for Ecolo Odor Control Systems, testified that the Ecolo solution is a "natural blend of essential oils and plant extracts." Tr. at 53, 64-65. He described it as an "odor neutralizer as opposed to a masking agent or cover-up." Tr. at 57. He also testified that he has been to M'Orr Pork's farm several times since the system was installed and M'Orr Pork is managing and operating the system according to recommended procedures. Tr. at 59.

#### Water to Dilute Lagoon

Dr. Bundy noted that M'Orr Pork's lagoon was adequately designed. The lagoon is 100 feet by 150 feet at the top and 16 feet deep from the top of the berm to the bottom. Its capacity is approximately one million gallons. M'Orr Pork Exh. AH12 at 2.

Dr. Bundy described M'Orr Pork's lagoon as an anaerobic lagoon. He explained that an anaerobic lagoon treats manure through bacterial action and that this process of anaerobic digestion reduces odors. Tr. at 90-91; M'Orr Pork Exh. AH12 at 2-3. He noted that anaerobic lagoons are a source of odors, "especially during initial startup." M'Orr Pork Exh. AH12 at 2-3. He stated that odors during startup can be reduced by filling at least one-third of the lagoon with fresh water before manure is added, thereby allowing anaerobic digestion to take place. Tr. at 90; M'Orr Pork Exh. AH12 at 3. David Orr testified that before any effluent from the confinement building entered the lagoon, M'Orr Pork filled the lagoon one-third full with water. He said that this was recommended to M'Orr Pork at the time. Tr. at 36-37.

Dr. Bundy noted that often it takes two to three years for the "microbial population in a lagoon to increase to a level for good microbial activity." M'Orr Pork Exh. AH12 at 3. To find out whether microbial activity in M'Orr Pork's lagoon may be inhibited, Dr. Bundy chemically analyzed the lagoon effluent for electrical conductivity. The analysis showed an electrical conductivity of approximately 7,610 parts per million (ppm), which Dr. Bundy said is considered high. Dr. Bundy stated that bacterial action is inhibited when the lagoon's electrical conductivity exceeds 5,000 ppm. Tr. at 91-92; M'Orr Pork Exh. AH12 at 2-3.

Dr. Bundy recommends that M'Orr Pork dilute the lagoon with water to reduce the electrical conductivity to below 5,000 ppm. Tr. at 91-92; M'Orr Pork Exh. AH12 at 5. At Dr. Bundy's recommendation, M'Orr Pork has added approximately 150,000 gallons of water to the lagoon at a cost of \$200. M'Orr Pork began adding fresh water to the lagoon in early May 1997. Tr. at 37-39, 92; M'Orr Pork Exh. AH12 at 3. Dr. Bundy also recommends that M'Orr Pork have a laboratory test the lagoon's electrical conductivity twice per year to ensure that it stays below 5,000 ppm. He said the test is fairly inexpensive. Tr. at 91-93.

Dr. Bundy testified that the surface of an anaerobic lagoon will become pink under good operating conditions. "Whenever it becomes pink, the odors reduce drastically, and it becomes a well-working anaerobic system." Tr. at 90-91. He explained that M'Orr Pork's lagoon is starting to show some pink coloration, indicating that the lagoon is maturing, *i.e.*, that the lagoon's microbial population is starting to increase. Tr. at 92; M'Orr Pork Exh. AH12 at 3.

### Moving Exhaust Fans

Dr. Bundy would not have M'Orr Pork move the exhaust fans to another side of the building because it "would require major costly changes" and it is unnecessary due to the use of the Ecolo Odor Control System, described above. M'Orr Pork Exh. AH12 at 4.

### Aeration

Dr. Bundy stated that the lagoon can be aerated as is done at waste sewage plants. But he would not have M'Orr Pork do this because "it is not an affordable technology for livestock producers" and because he believes it is not warranted at this lagoon. M'Orr Pork Exh. AH12 at 5.

### Lagoon Cover

Dr. Bundy stated that covering lagoons with an impermeable membrane is another method to reduce odors. However, he said that while this technology has been feasible for municipal sewage plants, it is "too expensive to use on swine lagoons." M'Orr Pork Exh. AH12 at 5.

### Filters

The south side of the confinement has six pit fans. Tr. at 21-22. In front of each pit fan, M'Orr Pork installed a filter, some time after the Ecolo Odor Control System was installed. Each filter has a nozzle behind it from which Ecolo is sprayed onto the filters. Tr. at 21-23, 60-61. Dr. Bundy testified that this is a good practice and he recommends that it be continued. He explained that odors attach to dust particles and that the filters will absorb dust particles, thereby diminishing odors. Tr. at 83-84. Dr. Bundy also recommended that the filters continue to be moisturized, which increases their efficiency. Tr. at 84-85.

## Relocating the Confinement and Lagoon

M'Orr Pork spent \$250,000 to build the confinement and lagoon. Tr. at 45. David Orr testified that the cost of moving them would be totally prohibitive. Tr. at 46.

## Cost and Management Overview

M'Orr Pork's cost of initially implementing the recommended odor abatement measures was \$7,172. Its on-going monthly costs for these measures are \$1,055 per month. Tr. at 39. Dr. Bundy testified that M'Orr Pork's management of the various abatement procedures has been good. Tr. at 107-108.<sup>2</sup>

## Effectiveness of Odor Abatement Measures

On his visits to the street where complainants Ellison and Wells live, Dr. Bundy used a device called a "scentometer" to measure odor threshold levels. Tr. at 74-75. The scentometer captures odorous air and allows the person conducting the test to smell it after each of several stages of dilution. The more dilution required to eliminate the odor, the stronger the odor, according to Dr. Bundy. Tr. at 98-100, 129. To properly use this instrument, a person's sense of smell should be validated as within a normal range by means of an American Society for Testing and Materials (ASTM) standard. Dr. Bundy testified that his sense of smell fell within a normal range when tested pursuant to the ASTM standard. Tr. at 129-130, 133-134.

On his five visits to the Ellison and Wells street, the wind was calm once, from the north once, and from the west three times. Tr. at 75, 78. If Dr. Bundy smelled a hog odor, he would assess it with the scentometer. Tr. at 75-76. Dr. Bundy smelled a "very slight" hog odor on one occasion. Tr. at 76. He testified that his scentometer test result of the odor showed that it was well below what is considered objectionable. Tr. at 76-77.

On the morning of the September 30, 1997, hearing, with the wind from the west, Dr. Bundy conducted a scentometer test downwind approximately 300 feet east of the lagoon. Tr. at 78, 97-98, 104, 131-132. His test result was "in the range of not being offensive odor."

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<sup>2</sup> Dr. Bundy recommends that M'Orr Pork move its sow lot to another site to reduce odors for residents to the south. Tr. at 96-97; M'Orr Pork Exh. AH12 at 5. Dr. Bundy also recommends that M'Orr Pork inject effluent from the lagoon to minimize odors when the time comes for M'Orr Pork to field apply the lagoon effluent. Tr. at 96; M'Orr Pork Exh. AH12 at 5. David Orr testified that M'Orr Pork is committed to following these recommendations. Tr. at 35-40. In addition, M'Orr Pork has been scraping the manure off the sow lot each spring and fall and it plans on continuing that practice until the sow lot is moved. Tr. at 35-36. The Board notes these matters, but will not discuss them further as they do not relate to abatement of the odors that caused unreasonable interference, *i.e.*, odors from the confinement and lagoon.

Tr. at 104. Dr. Bundy testified that this indicates that the abatement procedures in place at M'Orr Pork are working. Tr. at 105.

The other type of test Dr. Bundy conducted was for hydrogen sulfide. On the morning of the hearing, Dr. Bundy took several readings with a portable hydrogen sulfide meter approximately 300 feet east of the lagoon. Tr. at 97, 102, 129. He said that at that location he was in the middle of the plume and could smell an odor. Tr. at 102. His average result was two parts per billion (ppb) for hydrogen sulfide, which he described as very low. Tr. at 102, 130. He also took readings on top of the eastern or downwind side of the lagoon bank. The results were 15 ppb and 16 ppb, which he also described as very low. Tr. at 102-103, 130-131. Dr. Bundy testified that these test results indicate that the present odor abatement measures are working. Tr. at 104.

Dr. Bundy also testified that a properly functioning anaerobic lagoon will have a pink surface color, which indicates that its odors are being significantly reduced. Tr. at 90-91. He stated that M'Orr Pork's lagoon is maturing and that it is becoming pink. Tr. at 92.

David Orr testified that adding vegetable oil to the hog feed has led to approximately 50% less dust inside the confinement than before M'Orr Pork added the oil. Tr. at 32. He also testified that there is a lot less ammonia smell inside the confinement since M'Orr Pork began using Micro-Aid in the hog feed. Tr. at 33.

James Gessner, an employee of a distributor for Ecolo Odor Control Systems, testified that when he was at the Orr farm, the odor seemed to be totally under control. He added that during the daytime on one of his visits to the M'Orr Pork farm he went into town and smelled "a hint of the Ecolo fragrance as opposed to the hog odors." Tr. at 63. He suggested that the Ecolo scent smells like Dial soap. Tr. at 63.

Complainants Donetta Gott and Gary Wells testified that the hog odor problems persist. Tr. at 144-146, 176-180. Ms. Gott stated that she kept a diary over an approximately eight and one-half month period (in 1996 and 1997) and that she documented approximately 218 days on which she believed there were hog odor problems. Tr. at 174-176; Comp. Exh. AH6. Mr. Wells testified that he kept a diary over an approximately six month period (March-August 1997) and that he documented 70 days on which there were hog odor problems. Tr. at 140, 143-145; Comp. Exh. AH1. Mr. Wells admitted that the odors are not as frequent as before and that M'Orr Pork's odor abatement measures have "had a lot of success." Tr. at 140, 144.

Both sides presented conflicting testimony over whether the persisting hog odors about which Ms. Gott and Mr. Wells testified actually come from another, much larger hog facility that began operation in the fall of 1995 or the spring of 1996 and is located approximately two to two and one-half miles south of Kinderhook. Tr. at 47-48, 141-143, 180, 219-222, 237. The Board finds that the record is insufficient to establish that this other hog facility is a source of odors in Kinderhook.



The Board further finds that the measures that M’Orr Pork has employed have mitigated the odors from the confinement and lagoon. Although Ms. Gott and Mr. Wells claim that the odors persist, complainants presented no other witnesses to corroborate their observations. Moreover, Mr. Wells admitted that M’Orr Pork’s odor abatement measures have had considerable success. In addition, Dr. Bundy testified that the measures are working and that his conclusion is supported by air test results. He testified that M’Orr Pork is properly implementing the odor abatement measures. He also indicated that some of the measures will become more effective over time, *i.e.*, as the Austrees grow taller and as the lagoon’s electrical conductivity decreases so as not to inhibit microbial activity. Finally, Dr. Bundy visited the north side of Kinderhook five times, under varying wind conditions and at different times of the day, including twice in the evening. Dr. Bundy testified that on one occasion he smelled a very slight hog odor, which his scentometer categorized as well below what is considered objectionable. The preponderance of the evidence therefore shows that M’Orr Pork’s odor abatement measures have mitigated the odors from the confinement and lagoon.

### DISCUSSION

The Board will first discuss odor abatement measures to address air pollution from M’Orr Pork’s confinement and lagoon. The Board will then address whether to impose a civil penalty on M’Orr Pork for causing air pollution in violation of the Act and Board regulations, and if so, in what amount.

#### Odor Abatement Measures

The Board considers the factors set forth in Section 33(c) of the Act in determining the appropriate remedy. Section 33(c) reads as follows:

In 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:

- i. the character and degree of injury to, or interference with the protection of the health, general welfare and physical property of the people;
- ii. the social and economic value of the pollution source;
- iii. the suitability or unsuitability of the pollution source to the area in which it is located, including the question of priority of location in the area involved;

- iv. the technical practicability and economic reasonableness of reducing or eliminating the emissions, discharges or deposits resulting from such pollution source; and
- v. any subsequent compliance. 415 ILCS 5/33(c) (1996).

The Board's findings on the Section 33(c) factors from the interim opinion are incorporated herein by reference, with the exception of the fourth factor. As the Board stated at page 20 of its interim opinion:

As for technical practicability and economic reasonableness of reducing or eliminating emissions, the question in fashioning a remedy, in contrast to determining a violation, is not what could M'Orr Pork have reasonably done to reduce emissions, but rather "what is reasonable to require [M'Orr Pork] to do now" to reduce its odorous emissions so as to stop the unreasonable interference. (Forty-Eight Insulations, Inc., PCB 74-480, slip op. 10 (emphasis in original).)

Dr. Bundy recommended a number of odor abatement measures for the confinement and lagoon, described above in the Board's findings of fact. M'Orr Pork is already implementing these measures, with the exception of testing the lagoon's electrical conductivity twice per year. Dr. Bundy testified that the test is fairly inexpensive. The Board finds all of these measures technically practicable and economically reasonable.

In light of these available measures, the Board declines to grant complainants' request that M'Orr Pork relocate its confinement and lagoon. Complaint at 4. M'Orr Pork spent \$250,000 to build these facilities. Any construction of a new lagoon and confinement at another property could presumably cost M'Orr Pork approximately this much. Complainants introduced no contrary evidence. The Board finds that it is economically unreasonable to order M'Orr Pork to relocate these facilities in light of the alternative odor abatement measures discussed below. See Dorothy L. Hoffman v. City of Columbia (October 17, 1996), PCB 94-146, slip op. at 19 (Board refused to order city to relocate its maintenance facility, finding the \$150,000 cost associated with relocation to be economically unreasonable in light of the availability of reasonable alternative options for controlling the facility's noises that were causing unreasonable interference).

However, the Board does order M'Orr Pork to perform all of the odor abatement measures recommended by Dr. Bundy. The Board further grants complainants' request that the Board order M'Orr Pork to cease and desist from further violations. Complaint at 4. The Board often has ordered specific controls to address sources of unreasonable interference and included an order to cease and desist from further violations. See, e.g., Scott and Karen Thomas v. Carry Companies of Illinois (May 19, 1994), PCB 91-195, slip op. at 3; Peter Arendovich v. Koppers Company (Sept. 13, 1990), PCB 88-127, slip op. at 2. The Board does so here as well.

The Board emphasizes that it orders M'Orr Pork to undertake these specific odor control measures based on the record of this proceeding. This is not to say that there are not or will not be other or better odor control measures available or that these measures are or will be appropriate for every hog confinement and lagoon. Further, the Board emphasizes that nothing in the order below prevents M'Orr Pork from improving the ordered odor control measures or supplementing them with additional odor controls.

### Penalty

Complainants requested that a fine be imposed on M'Orr Pork. Complaint at 4. The maximum penalties the Board can assess are established in Section 42(a) of the Act, which provides in pertinent part:

[A]ny person that violates any provision of this Act or any regulation adopted by the Board . . . shall be liable to a civil penalty not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues . . . . 415 ILCS 5/42(a) (1996).

In its interim opinion and order, the Board found that M'Orr Pork allowed odors from its hog confinement and lagoon to result in unreasonable interference with the enjoyment of life and property, thereby causing air pollution in violation of Section 9(a) of the Act and the Board's regulations at 35 Ill. Adm. Code 501.402(c)(3). Pursuant to Section 42(a) of the Act, the Board could impose a civil penalty of \$50,000 for each of these two violations. In addition, for each of these two violations, Section 42(a) permits the Board to impose a civil penalty of \$10,000 for each day the violation continues. The Board found in its interim opinion that the offensive odors from the confinement and lagoon began in the spring of 1995 and continued intermittently until the time of the first hearing, which took place on May 30, 1996.

For its penalty determination, the Board again considers the Section 33(c) factors, which are set forth above at pages 9 and 10. The Board incorporates by reference its findings on these factors from its interim opinion. They are summarized below:

1. Character and Degree of Injury to, or Interference with the Protection of the Health, General Welfare and Physical Property of the People. Odors from the confinement and lagoon caused substantial interference and not merely petty annoyance. The Board weighs this factor against M'Orr Pork.
2. Social and Economic Value of the Pollution Source. The economic and social value of the livestock industry to the State of Illinois is well recognized. But M'Orr Pork submitted very little evidence on the value of its facilities. The Board weighs this factor only slightly in M'Orr Pork's favor.

3. Suitability or Unsuitability of the Pollution Source to the Area, including Priority of Location. The confinement and lagoon are properly zoned and have not negatively impacted property values, sales, or new construction. This is counter-balanced, however, by M'Orr Pork's failure to be sufficiently mindful of the nearby residents in Kinderhook. In addition, the confinement and lagoon do not have priority of location. The Board weighs this factor neither in favor of nor against M'Orr Pork.
4. Technical Practicability and Economic Reasonableness of Reducing or Eliminating the Emissions Resulting from the Pollution Source. There were a number of technically practicable and economically reasonable odor control measures that M'Orr Pork reasonably could have implemented sooner. The Board weighs this factor against M'Orr Pork.
5. Subsequent Compliance. The evidence shows that the hog odor problem persisted in Kinderhook as of the May 30, 1996, hearing. The Board weighs this factor against M'Orr Pork.

Section 42(h) of the Act authorizes the Board to consider the impact of any matter of record in determining the appropriate civil penalty. Section 42(h) reads in pertinent part as follows:

In 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 due 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 this Act;
3. any economic benefits accrued by the violator because of delay in compliance with requirements;
4. the amount of monetary penalty which will serve to deter future 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) (1996).

As authorized by Section 42(h), the Board will consider each of the enumerated factors in turn.

1. Duration and Gravity of Violation. Based on the record, the offensive odors emitted by the confinement and lagoon continued intermittently for approximately one year and caused substantial interference with complainants' enjoyment of their lives and property. The Board weighs this factor against M'Orr Pork.
2. Diligence in Attempting to Comply. Construction of the confinement and lagoon was completed in June or July of 1994 and the offensive odors began in the spring of 1995. The record does not reveal the dates when M'Orr Pork commenced a number of its odor control measures (emptying the manure pits every 10 to 12 days and thereafter adding fresh water to the pits; washing the confinement between groups of pigs; adding Micro-Aid to the hog feed; planting corn). Other measures we know were not undertaken until well after the confinement and lagoon had been built and the offensive odors had begun: adding oil to the hog feed (early 1996); planting Austrees (end of April 1996); extending drainage tube (spring 1996); installing Ecolo Odor Control System (April 21, 1997); adding water to dilute the lagoon (early May 1997); and adding filters to pit fans (between April 21, 1997, and September 30, 1997). There is no indication in the record that these measures could not reasonably have been implemented earlier.

Nevertheless, David Orr testified that M'Orr Pork filled the lagoon to one-third full with water prior to allowing any effluent from the confinement to enter the lagoon. He testified that this was recommended to M'Orr Pork at the time. In the evaluation report, Dr. Bundy notes that the practice of filling a lagoon at least one-third full with fresh water before adding manure can reduce odors during startup. In addition, as is evident from the Board's findings of fact, M'Orr Pork has voluntarily undertaken numerous recommended odor abatement measures. Accordingly, the Board weighs this factor in M'Orr Pork's favor.

3. Economic Benefits Accrued. The Board assumes that M'Orr Pork gained some economic benefit by not implementing earlier its various odor control measures. See, e.g., IEPA v. Allen Barry, individually and Allen Barry, d/b/a Allen Barry Livestock (May 10, 1990), PCB 88-71, slip op. at 77 (discussing the cost savings of delayed compliance based on the time-value of money). But there is insufficient evidence in the record on this factor for a specific calculation of this economic benefit. The Board weighs this factor against M'Orr Pork.
4. Penalty Amount That Will Deter Further Violations and Aid in Enhancing Voluntary Compliance. In light of M'Orr Pork's voluntary efforts to

comply, the Board cannot find that a large penalty is necessary to deter further violations by M'Orr Pork. As for enhancing voluntary compliance by M'Orr Pork and others, the Board notes that its decision not to impose a large penalty here is influenced by M'Orr Pork's voluntary implementation of numerous odor control measures. In addition, M'Orr Pork spent \$7,172 to initially implement the recommended odor control measures and will continue to spend \$1,055 per month, or \$12,660 per year, to continue these efforts.

5. Previously Adjudicated Violations. The record contains no evidence of previously adjudicated violations of the Act by M'Orr Pork. The Board weighs this factor in M'Orr Pork's favor.

Considering all of the above factors, including the nature and duration of the interference and M'Orr Pork's failure to implement its odor control measures sooner, the Board finds that some penalty is warranted. See, e.g., Processing and Books, Inc. v. Pollution Control Board, 64 Ill. 2d 68, 77, 351 N.E.2d 865, 870 (1976) (Illinois Supreme Court upheld Board penalty for odors from chicken farm's manure and incineration of dead chickens, noting that "the respondents seriously interfered with the enjoyment of life and property in ways that could reasonably have been prevented."). The Board finds, however, that in light of all of these factors, including M'Orr Pork's voluntary efforts to comply, a large penalty is not warranted. See, e.g., Allen Barry, PCB 88-71, slip op. at 35-36 (discussing significance of diligence toward compliance for penalty determinations).

The Board will impose on M'Orr Pork a \$2,500 penalty for violating the Act and the Board's regulations. The Board recognizes that hog odor control technologies for the recent trend of more concentrated hog production are still developing and may undergo substantial changes in the upcoming years. The Board notes, however, that nothing in the record indicates that odor control measures could not reasonably have been implemented sooner. A number of the odor control measures in this case were not implemented until well after M'Orr Pork modified its hog operations. These measures should have been implemented earlier.

### CONCLUSION

As discussed above, the Board will order M'Orr Pork to cease and desist from further violations, to perform numerous recommended odor abatement measures, and to pay a civil penalty of \$2,500. The Board again emphasizes that its decision to order these particular odor control measures is based only on the evidence before it in this case. As stated above, this does not mean that there are not or will not be other or better odor control measures available or that these measures are or will be appropriate for every hog confinement building and lagoon. Additionally, nothing in this order prevents M'Orr Pork from enhancing the ordered odor control measures or supplementing them with additional odor controls.

Again, the Board recognizes that technologies for controlling hog odor in this new era of more concentrated hog production are still developing and may undergo significant changes

in the upcoming years. The Board notes, however, that the record of this case indicates that M'Orr Pork reasonably could have implemented odor control measures sooner. M'Orr Pork did not implement a number of its odor control measures until long after it modified its hog operations. These measures should have been implemented sooner rather than later.

The Board incorporates by reference its findings of fact and conclusions of law from its interim opinion.<sup>3</sup> This final opinion constitutes the Board's findings of fact and conclusions of law in this matter.

### ORDER

1. The Board finds that M'Orr Pork, by allowing the emission of odor from its hog confinement and lagoon resulting in unreasonable interference with the enjoyment of life and property, has caused air pollution in violation of Section 9(a) of the Act (415 ILCS 5/9(a) (1996)) and 35 Ill. Adm. Code 501.402(c)(3).
2. M'Orr Pork must cease and desist from any further violations of Section 9(a) of the Act (415 ILCS 5/9(a) (1996)) and 35 Ill. Adm. Code 501.402(c)(3).
3. M'Orr Pork must perform the following in accordance with the recommendations of Dr. Dwaine S. Bundy as found by the Board in the above opinion:
  - a. empty the manure pits located beneath the confinement building every 10 to 12 days;
  - b. after each emptying of the manure pits located beneath the confinement building, refill the manure pits with approximately four inches of fresh water;
  - c. wash the interior of the confinement building between each group of pigs;
  - d. add vegetable oil or an equivalent product to the hog feed;
  - e. add Micro-Aid or an equivalent product to the hog feed;
  - f. maintain the end of the confinement building's drainage tube beneath the lagoon surface;

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<sup>3</sup> Complainants raise an argument in their post-hearing brief regarding local zoning, presumably as it relates to Board setback requirements. Compl. Br. at 1-2. The Board believes this matter was adequately addressed at page nine of its interim opinion.

- g. maintain the Austrees located south of the confinement building and lagoon;
  - h. plant corn throughout the 35 acre field located south of the confinement building and lagoon;
  - i. use the Ecolo Odor Control System or an equivalent system, including spraying the Ecolo solution or an equivalent product out of the 25 nozzles located south of the confinement building and lagoon each day for 30 seconds every five minutes from 6:30 p.m. to 11:00 p.m. and from 4:00 a.m. to 8:00 a.m. and for the rest of each day for 20 seconds every hour.
  - j. add fresh water to the lagoon as necessary to ensure that the lagoon's electrical conductivity is below 5,000 parts per million (ppm);
  - k. have the lagoon's electrical conductivity tested twice per year by a qualified laboratory to ensure that it is below 5,000 ppm; and
  - l. use the filters with the Ecolo solution or an equivalent product for the pit fans on the south side of the confinement building and keep the filters sufficiently moist.
4. Nothing in this order prevents M'Orr Pork from improving the odor control measures set forth in paragraph 3 above or supplementing these measures with additional odor control measures.
5. M'Orr Pork must pay a civil penalty of \$2,500 for violating Section 9(a) of the Act (415 ILCS 5/9(a) (1996)) and 35 Ill. Adm. Code 501.402(c)(3). M'Orr Pork must pay this penalty within 30 days of the date of this order. Such payment must be made by certified check or money order payable to the Treasurer of the State of Illinois, designated to the Illinois Environmental Protection Trust Fund, and must be sent by



First Class mail to:

Illinois Environmental Protection Agency  
Fiscal Services Division  
1021 N. Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276

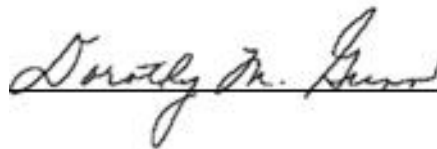
The certified check must clearly indicate on its face this case name and docket number, along with M'Orr Pork's Federal Employer Identification Number. Any such penalty not paid within the time prescribed will accrue interest at the rate set forth in subsection (a) of Section 1003 of the Illinois Income Tax Act (35 ILCS 5/1003(a) (1996)), as now or hereafter amended, from the date payment is due until the date payment is received. If the time for payment is stayed during the pendency of an appeal, interest will not accrue during such stay.

IT IS SO ORDERED.

Board Member R.C. Flemal dissented.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1996)) provides for the appeal of final Board orders to the Illinois Appellate Court within 35 days of service of this order. Illinois Supreme Court Rule 335 establishes such filing requirements. See 172 Ill. 2d R. 335; see also 35 Ill. Adm. Code 101.246, Motions for Reconsideration.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 16th day of April 1998 by a vote of 6-1.

A handwritten signature in cursive script, reading "Dorothy M. Gunn", written over a horizontal line.

Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board