

ILLINOIS POLLUTION CONTROL BOARD  
May 5, 1988

ILLINOIS ENVIRONMENTAL )  
PROTECTION AGENCY, )  
 )  
Complainant, )  
 )  
v. ) PCB 88-28  
 )  
AMOCO CHEMICALS COMPANY, )  
A Delaware Company )  
 )  
Respondent. )

MS. CARLA DAVIS, ASSISTANT ATTORNEY GENERAL, APPEARED ON BEHALF OF COMPLAINANT.

MR. DALE M. IWATAKI APPEARED ON BEHALF OF RESPONDENT.

OPINION AND ORDER OF THE BOARD (by R. C. Flemal):

This matter comes before the Board upon a four-count complaint filed February 1, 1988, by the Illinois Attorney General's Office on behalf of the Illinois Environmental Protection Agency, and a contemporaneously filed Stipulation and Proposal for Settlement (Joint Exhibit 1). The Stipulation addresses the facts and terms of settlement in this matter. Hearing was held April 15, 1988.

The Board has considered all the facts, circumstances, and the proposed settlement in light of the criteria set forth at Ill. Rev. Stat. ch. 111<sup>1</sup>/<sub>2</sub> par. 1033(c) and finds the Stipulation and Proposal for Settlement acceptable under 35 Ill. Adm. Code 103.180. Accordingly, the Board will accept the Stipulation and order that its terms be carried out.

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

ORDER

The Board hereby accepts the Stipulation of Facts and Proposal for Settlement, a copy of which is attached and incorporated by reference as if set forth in full and directs that its terms be carried out.

IT IS SO ORDERED.

Board Member J. Theodore Meyer dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 5<sup>th</sup> day of May, 1988, by a vote of 6-1.

*Dorothy M. Gunn*

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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board



I.

JURISDICTION

The Board has jurisdiction of the subject matter herein and of the parties consenting hereto pursuant to the Illinois Environmental Protection Act (Ill. Rev. Stat. ch. 111 1/2, pars. 1001 et seq. [1985]).

II.

AUTHORIZATION

The undersigned representatives for each party certify that they are fully authorized by the party whom they represent to enter into the terms and conditions of this Stipulation and Proposal for Settlement and to legally bind them to it.

III.

APPLICABILITY

This Stipulation and Proposal for Settlement ("Settlement") shall apply to and be binding upon the Complainant and Respondent, as well as the successors and assignees of each and any officer, director, agent, employee or servant of Respondent. The Respondent shall not raise as a defense to any enforcement action taken pursuant to this Settlement the failure of any of its agents, servants or employees to take such action as shall be required to comply with the provisions of this Settlement.

IV

UNCONTESTED FACTS

- A. Complainant, Illinois Environmental Protection Agency (hereinafter "Agency" or "IEPA"), is an administrative agency established in the executive branch of the State government by Section 4 of the Illinois Environmental Protection Act (hereinafter "the Act") (Ill. Rev. Stat. ch. 111 1/2, par. 1001 et seq. [1985]), and charged, inter alia, with the duty of enforcing the Act, pursuant to Title VIII thereof and recovering civil penalties pursuant to Title XII thereof.
- B. Respondent, Amoco Chemicals Company ("Amoco") is a Delaware corporation duly authorized to conduct business in the State of Illinois.
- C. At all times pertinent hereto Amoco has owned and operated an incinerator on its trimellitic anhydride (TMA) unit at its chemical plant located approximately one mile southeast of Interstate 55 and U.S.6 near Channahon in Will County, Illinois. The purpose of this incinerator is to dispose of organic wastes produced during the manufacture of TMA from pseudocumene.
- D. The TMA unit incinerator was originally permitted by the Illinois Environmental Protection Agency in 1972 (I.D. 197800AAC, Permit No. 02100288). Under this permit, particulate emissions generated by the TMA incinerator were controlled by an electrostatic precipitator (ESP). In January of 1980, Amoco received a permit to construct a new ESP on the TMA incinerator to replace the existing ESP which had been damaged beyond repair in December of 1979.

Following a demonstration of compliance with applicable Illinois air pollution regulations, a renewal operating permit was issued for the TMA unit incinerator and ESP. Several subsequent renewal operating permits were issued for this equipment, the most recent being on June 30, 1987.

E. On April 30, 1985, the Agency conducted an inspection of the Amoco TMA unit incinerator. Based upon this April 30, 1985 inspection, the Agency sent Amoco a Compliance Inquiry Letter (CIL) on May 6, 1985, alleging the following apparent violations as observed by the Agency:

1. 35 Ill. Adm. Code 212.123 - Visual emissions from TMA incinerator in excess of the allowable opacity limitation.
2. 35 Ill. Adm. Code 212.181 - Particulate emissions from the TMA incinerator in excess of the allowable particulate emission rate.
3. 35 Ill. Adm. Code 201.161 - Operation of the TMA unit incinerator with ESP below the design efficiency as required by Special Condition 3 of Amoco's May 7, 1984 operating permit.

F. On May 21, 1985, Mr. A. E. Ruscilli, Plant Manager, responded to the May 6 CIL, describing the situation at the Joliet plant and Amoco's action to resolve it. In summary, the excess emissions

alleged by IEPA occurred when the performance of the ESP on the trimellitic anhydride incinerator deteriorated unexpectedly and for unknown reasons. When the deteriorated performance occurred, Amoco took immediate action to evaluate the situation and devise a correction. Amoco retained several outside consultants. On June 18, 1985, Amoco submitted a plan of action to resolve the situation. Under the plan submitted by Amoco, the deteriorated performance of the ESP would be remedied by September 27, 1985, provided that the existing ESP did not have to be replaced. However, if replacement of the ESP with some other type of particulate emission control equipment was determined to be necessary, a final project completion date could not be predicted.

G. The Agency inspected the Amoco TMA unit incinerator on June 11, 1985 and July 23, 1985. The Agency concluded that the apparent violations observed in April of that year were continuing despite Amoco's efforts. Consequently, on July 26, 1985, the IEPA wrote to Amoco and requested that a Pre-Enforcement Conference be convened. The purpose of the requested conference, as stated in the letter, was to discuss the validity of the apparent violations and to arrive at a program to eliminate existing and/or future violations. In addition, Amoco was notified that the letter constituted the notice required by Section 31(d) of the Illinois Environmental Protection Act (Ill. Rev. Stat. 1985, ch. 111 1/2, par. 1031[d]).

H. On August 21, 1985, the Pre-Enforcement Conference was held at EPA's Maywood, Illinois, office. Pursuant to that meeting, Amoco presented by letter dated September 4, 1985, a plan of action to deal with the particulate emissions associated with the operation of the TMA unit incinerator. In summary, the plan provided for a brief period for Amoco to evaluate the equipment and promptly determine if the existing ESP could be upgraded or whether a new control device needed to be installed. If all attempts to achieve compliance with the existing ESP failed by November 14, 1985, it was Amoco's intention to initiate plans to install new particulate control equipment in the form of new ESP or baghouse.

I. On November 8, 1985, Amoco furnished an update to IEPA on the status of Amoco's actions regarding the TMA unit incinerator. A project schedule for replacement of the ESP, if necessary, was also provided, terminating on June 1, 1987. However, Amoco stated that it was continuing its efforts to improve the performance of the existing ESP, and would forego the purchase of new equipment if the existing ESP "can be modified to meet the Illinois Rules prior to entering into a binding contract for replacement equipment." In its November 8, 1985 letter, Amoco estimated that it had spent \$700,000 to date in its efforts to upgrade the ESP. Further compliance expenditures were estimated to be between \$100,000 (if existing equipment was rehabilitated) and \$1,000,000 (for the purchase of new particulate control equipment).

J. Between January and May of 1986, pursuant to the above project schedule, Amoco conducted intensive engineering studies to determine a process design for replacement control equipment, to estimate costs and construction schedules and to prepare a bid package for submittal to vendors.

K. On May 28, 1986, Amoco wrote to IEPA and committed to replacing the ESP with a new baghouse. Amoco anticipated that construction would be completed on December 31, 1986.

L. On June 4, 1986, Amoco submitted a permit application for the replacement baghouse (Permit No. 86060021). In its submittal Amoco stated that the total cost of the baghouse project would be \$2.3 million.

M. A construction permit for the TMA unit incinerator baghouse system was issued by the Agency on September 5, 1986. As a special condition of this permit Amoco was to conduct stack tests to determine particulate emission rates and destruction removal efficiency of the Principal Organic Hazardous Component (POHC) in the TMA incinerator feed.

N. On November 19, 1986, Amoco completed the installation of the baghouse. Stack tests were performed on December 16 and 17, 1986.

V.

CONTESTED FACTS

A. The Agency contends that Amoco's operation of the TMA unit incinerator with ESP has resulted in the following violations of Section 9 of the Illinois Environmental Protection Act (Ill. Rev. Stat. 1985, ch. 111 1/2, par. 1009) and the Board's Air Pollution Control Regulations (35 Ill. Adm. Code, Subtitle B, Chapter I), as alleged in Counts I - IV of the Agency's Complaint:

1. Section 9(a) of the Act, 35 Ill. Adm. Code 212.123 and 201.141 - Emission of smoke or other particulate matter into the atmosphere of an opacity greater than that allowed by this Section on April 30, 1985, June 12, 1986 and July 17, 1986.
2. Section 9(a) of the Act, 35 Ill. Adm. Code 212.181(b) and 201.141 - Emission of particulate matter into the atmosphere in excess of the particulate emission rate allowed by this Section since at least April 30, 1985 to November 19, 1986. Complainant alleges that operation of the TMA unit incinerator with a malfunctioning ESP has resulted in the annual emission of 83 tons of particulate over the allowable particulate rate of 24T/yr.
3. Section 9(b) of the Act - Operation of the TMA unit incinerator ESP below design efficiency, as required by Special Condition 3(b) in the plant operating permit issued May 7, 1984 since at least April 30, 1985 to December 31, 1985.

4. Section 9(b) of the act, 35 Ill. Adm. Code 201.144 and 201.141 - Operation of the TMA unit incinerator without an operating permit from January 1, 1986 to June 30, 1987.

B. Respondent neither admits nor denies the allegations of Counts I - IV as summarized above, and adduces no evidence to contest same.

VI

SECTION 33(C) FACTORS

(Ill. Rev. Stat. 1985, ch. 111-1/2, par. 1033[c][1985])

Section 33(c) of the Illinois Environmental Protection Act provides:

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:

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 value of the pollution source;
3. 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; and

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

In response to each of these factors the Agency states as follows:

A. The Amoco TMA unit incinerator generates particulate emissions. The most recent Illinois Annual Air Quality Report, prepared by the Agency, contains the following statements on the potentially adverse health and welfare effects of particulate emissions. For the purposes of this section, it should be noted that particulate particles emitted from the TMA incinerator have varied considerably in size. A June 20, 1985 particle size run on the inlet to the ESP revealed that 70% of the particulate was smaller than one (1) micron in size. Testing conducted on July 9, 1985, demonstrated that 75% of the particulate was larger than ten (10) microns.

Particles which cause the most health and visibility difficulties are those less than 1.0 microns in size. These particles are also the most difficult to reduce in numbers by the various industrial removal techniques. Rainfall accounts for the major removal of these smaller particles from the air.

One of the major problems associated with high concentrations of particulates is that the interaction between the particles, sunlight, and atmospheric moisture can potentially result in the climatic effects and diminished visibility (haze). Particles play a key role in the formation of clouds, and emissions of large numbers of particles can, in some instances, result in local increases in cloud formation and, possibly precipitation. Particles in the size range of 0.1 to 1.0 microns are the most efficient in scattering visible light (wave length 0.4 to 0.7 microns) thereby reducing visibility. Particles combined with high humidity can result in the formation of haze which can cause hazardous conditions for the operation of motor vehicles and aircraft.

Particulate pollutants enter the human body by way of the respiratory system and their most immediate effects are upon this system. The size of the particle determines its depth of penetration into the respiratory system. Particles over 5 microns are generally deposited in the nose and throat. Those that do penetrate deeper in the respiratory system to the air ducts (bronchi) are often removed by ciliary action. Particles ranging in size from 0.5 - 5.0 microns in diameter can be deposited in the bronchi, with few reaching the air sacs (alveoli). Most particles deposited in the bronchi are removed by the cilia within hours. Particles less than 0.5 micron in diameter reach and may settle in the alveoli. The removal of particles from the alveoli is much less rapid and complete than from the larger passages. Some of the particles retained in the alveoli are absorbed into the blood.

Besides particulate size, the oxidation state, chemical composition, concentration, and length of time in the respiratory system contribute to the health effects of particulates. Particulates have been associated with increased respiratory diseases (asthma, bronchitis, emphysema), cardiopulmonary disease (heart attack), and cancer.

Plant surfaces and growth rates may be adversely affected by particulate matter. Particulate air pollution also causes a wide range of damage to materials including corrosion of metals and electrical equipment, and the soiling of textiles and buildings.

B. The Amoco TMA unit is located at Amoco's Joliet plant, one mile southeast of the junction of Highways I-55 and U.S.6 in Channahon Township, Will County. Channahon Township is designated by the United States Environmental Agency as secondary non-attainment for particulates. The 24 hour secondary ambient air quality standard for particulates is  $150 \text{ ug/m}^3$ . Based upon the information contained in the most recent Illinois Annual Air Quality Report, in 1985 one exceedence of the secondary standard was detected at the TSP monitor closest to the Amoco plant (in Rockdale, Illinois, at Midland & Otis). In 1986 no exceedences were detected at this monitor.

C. The parties agree that Amoco's manufacture of TMA at its Joliet plant is of significant social and economic benefit. TMA is used as a plasticizer for polymers in paint, coatings and other materials used in high temperature applications.

D. The Amoco Joliet TMA unit is located in an industrial area. There are no residences located in the immediate vicinity of the plant.

E. Discharges of particulates during the operation of the TMA unit incinerator can be effectively controlled by the baghouse which Amoco has constructed pursuant to the construction permit issued by the Agency.

## VII

### PROPOSAL FOR SETTLEMENT

As a result of settlement negotiations between the parties and the actions taken by Respondent, the parties believe that the public interest and the environment will be best served by resolution of this enforcement action under the terms and conditions provided herein. This proposal for settlement will be effective upon the approval of the Board. All statements contained herein are agreed to for purposes of settling this action only and shall be null and void and of no effect if the Board does not approve this proposal for settlement in its entirety.

VIII

TERMS OF SETTLEMENT

Amoco and IEPA have agreed to the following Terms of Settlement. These terms shall be in full settlement of the action filed herein by the Agency and Amoco's liability for all violations alleged by IEPA in its Complaint.

A. Amoco neither admits nor denies the violations of Section 9 of the Act, 35 Ill. Adm. Code 212.123, 212.181(b), 201.144 and 201.141 as alleged by the Agency in the Complaint filed in this action.

B. The Respondent agrees to comply with the Illinois Environmental Protection Act and Rules and Regulations of the Illinois Pollution Control Board applicable to the operation of the TMA unit incinerator at the Amoco facility located one mile southeast of the Junction of I-55 and U.S.6, near Channahon, Illinois.

C. Following the receipt and review of an operating permit application containing stack test results demonstrating that the operation of the TMA incinerator with baghouse will not cause or allow a violation of the Act or the Board's Air Pollution Regulations in accordance with Section 39(a) of the Act (Ill. Rev. Stat. ch. 111-1/2, par. 1039[a]), the Agency will issue an operating permit to Amoco for the TMA incinerator and baghouse. Amoco agrees to abide by all terms and conditions of the operating permit to be issued.

D. The parties enter into this Stipulation and Proposal for Settlement and Amoco agrees to pay the penalty specified in this paragraph in order to avoid the substantial costs and inconvenience and uncertainties of litigation. In order to resolve this dispute

and as a condition of settlement, the Respondent agrees to pay a penalty of \$30,000 into the Environmental Protection Trust Fund within 30 days from the date the Board adopts a final order approving, accepting and incorporating this Stipulation and Proposal for Settlement. Payment shall be made by certified check or money order and shall be sent by first class mail to:

Illinois Environmental Protection Agency  
Fiscal Services Division  
2200 Churchill Road  
P.O. Box 19276  
Springfield, Illinois 62794-9276

The parties agree that said civil penalty aids in enforcement of the Act.

IX

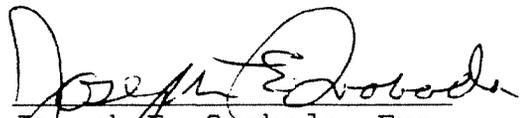
COMPLIANCE WITH OTHER LAWS AND REGULATIONS

- A. This Settlement Agreement in no way affects Respondent's responsibility to comply with any federal, state or local regulations, including but not limited to, the Illinois Environmental Protection Act (Ill. Rev. Stat. ch. 111-1/2, par. 1001 et seq.[1985]) and the Illinois Pollution Control Board Air Pollution Control Regulations at the Amoco facility located one mile southeast of the junction of I-55 and U.S.6, near Channahon, Illinois
- B. This Settlement Agreement resolves and disposes of all past and existing violations, which could have been alleged based on facts known to Complainant at the time of filing the Complaint. However, nothing in this Settlement Agreement shall be construed as a waiver by Complainant of the right to redress future violations or obtain penalties with respect thereto.

WHEREFORE, Complainant and Respondent jointly request that the Board adopt and accept the foregoing Stipulation and Proposal for Settlement as written.

FOR COMPLAINANT:

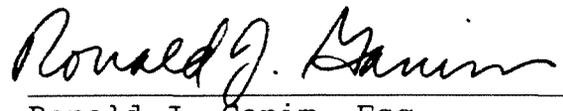
ILLINOIS ENVIRONMENTAL  
PROTECTION AGENCY

  
Joseph E. Svoboda, Esq.  
Manager, Enforcement Programs

Dated: 6/16/87

FOR RESPONDENT:

AMOCO CHEMICALS COMPANY

  
Ronald J. Ganim, Esq.

Dated: 6/3/87

ATTORNEY GENERAL OF THE  
STATE OF ILLINOIS

\_\_\_\_\_  
Neil F. Hartigan

Dated: \_\_\_\_\_

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