ILLINOIS POLLUTION CONTROL BOARD
June 17, 1998

IN THE MATTER OF:	)	
	)	
MUNICIPAL SOLID WASTE LANDFILLS -	)	R98-28
NON-METHANE ORGANIC COMPOUNDS	)	(Rulemaking - Air)
35 ILL. ADM. CODE 201.103, 201.146, and	)	
PART 220	)	

Adopted Rule. Final Order.

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

This matter comes before the Board upon a petition for rulemaking filed on March 13, 1998, by the Illinois Environmental Protection Agency (Agency). The Agency requests that the Board amend its air pollution control regulations to establish a program for the regulation of emissions of non-methane organic compounds (NMOC) from certain existing municipal solid waste landfills. These regulations are required pursuant to the Clean Air Act Amendments of 1990 (CAA) (42 U.S.C. 7401-76719 (1990)). By today's action the Board promulgates the regulations.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 *et seq.* (1996)). The Board is charged therein to "determine, define and implement the environmental control standards applicable in the State of Illinois." 415 ILCS 5/5(b). More generally, the Board's rulemaking charge is based on the system of checks and balances integral to Illinois environmental governance: the Board bears responsibility for the rulemaking and principal adjudicatory functions; the Agency has primary responsibility for administration of the Act and the Board's regulations, including the regulations that are adopted today.

Today's action is brought under Section 28.5 of the Act (415 ILCS 5/28.5 (1996)). Section 28.5 authorizes the Board to adopt via a "fast-track" procedure certain regulations necessary for compliance with the CAA. The United States Environmental Protection Agency (USEPA) has established July 31, 1998, as the deadline for implementation of the instant rules in Illinois.

BACKGROUND

On March 12, 1996, USEPA promulgated a new source performance standard (NSPS) and an emission guideline (EG) for municipal waste landfills. Petition Exhibit 1 at 9905-9944.[1] Under the terms of the NSPS and EG, certain municipal waste landfills are required to

[1] Documents attached to the Agency's petition that are cited herein, are as follows:
Attachment 7: Agency's Statement of Reasons. (Reasons)

control NMOC to the level achievable by the best demonstrated system of continuous emission reduction, considering costs, quality of health, and environmental and energy impacts.

The NSPS and EG are based on USEPA's determination that NMOC emissions from municipal solid waste landfills cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. Pet. Exh. 1 at 9905. The emissions of concern include volatile organic compounds that contribute to ozone formation, hazardous air pollutants that can cause a variety of direct human health effects, plus odorous compounds. Pet. Exh. 1 at 9905.

Section 111(d) of the CAA requires that States submit a plan for the control of emissions from any source for which the United States Environmental Protection Agency (USEPA) has promulgated a performance standard. The NSPS is directly implemented in Illinois through the operation of Section 39.5 of the Act. It accordingly needs no independent promulgation by the Board. However, the EG does need independent promulgation and implementation. Today's action is undertaken pursuant to that requirement. The amendments as adopted contain standards and control requirements that are equivalent to those in the EG.

Pursuant to the EG, states were required to submit their implementation plans to USEPA within nine months of promulgation of the EG (*i.e.*, by December 12, 1996). Pet. Exh. 3. The Agency has sought and obtained extensions of this deadline pending resolution of

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Attachment 10: "Technical Support Document for Controlling NMOC Emissions from Existing Municipal Solid Waste Landfills," Air Quality Planning Section, Bureau of Air, Illinois Environmental Protection Agency, January 1998. Tech. Sup. Doc.

Exhibit 1: "Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills: Final Rule and Guideline," 61 *Fed. Reg.* 9905 (March 12, 1996). Pet. Exh. 1

Exhibit 2: "Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills: Proposed Rule, Guideline and Notice of Public Hearing," 56 *Fed. Reg.* 24469 (May 30, 1991). Pet. Exh. 2

Exhibit 3: Letter from Mary A. Gade, Director, Illinois EPA, to Valdas V. Adamkus, Regional Administrator, Region V, U.S. Environmental Protection Agency (December 16, 1996). Pet. Exh. 3

Exhibit 7: Proposed Settlement Agreement, National Solid Wastes Management Association v. Browner, et al. (D.C. Cir 1996) (No 96-1152). Pet. Exh.7

Exhibit 8: "Extension of Period of Submission of Section 111(d) Plans for Existing Municipal Solid Waste (MSW) Landfills," 62 *Fed. Reg.* 236 (December 9, 1997). Pet. Exh. 8

a federal court action in which the National Solid Wastes Management Association challenged key provisions of the NSPS and EG. A proposed settlement has been reached in this matter (Pet. Exh. 7), and USEPA has now established July 31, 1998, as the deadline for implementation of the instant rules in Illinois. Pet. Exh. 8.

PROCEDURAL HISTORY

Schedule and Hearings

By order of March 19, 1998, the Board adopted the proposal for immediate first notice, as required of rulemaking proposals filed under Section 28.5 of the Act. The Secretary of State published first notice on April 10, 1998, at 22 *Ill. Reg.* 6466 and 6500.

Further, as also required by Section 28.5 of the Act, the Board in its March 19, 1998, order adopted a fast-track schedule for the proceeding as follows:

First Notice	on or before March 27, 1998
First Hearing	on or before May 1, 1998
Second Hearing	on or before May 13, 1998
Third Hearing	on or before May 21, 1998
Second Notice	
(if 3rd hearing is canceled)	on or before July 21, 1998
(if 3rd hearing is held)	on or before August 10, 1998
Final Adoption	21 days after receipt of JCAR certificate of no objection

Pursuant to this schedule the first hearing was held on May 1, 1998, in Chicago and the second hearing was held on May 13, 1998, in Springfield.[2] Both hearings were before Board Hearing Officer Catherine F. Glenn.

At the first hearing the Agency presented the testimony of Richard Forbes, Manager of the Ozone Regulatory Unit at the Agency, and Yoginder Paul Mahajan, Environmental Protection Engineer in the Air Quality Planning Section of the Agency. Mr. Forbes, who oversaw the development of the proposal for the Agency, testified to the relationship between the federal and State air regulatory programs, and the need for Illinois to adopt the regulations. Tr. at 10-22. Mr. Mahajan testified to the specific requirements of the proposed regulations, including the necessary capture and control provisions, the technical feasibility and cost effectiveness of such controls, the potentially impacted sources, and the emissions reduction from implementation of the proposed rule provisions. Tr. at 23-41. One member of the public, Mr. Lionel Trepanier, attended the hearing and asked questions of the Agency; no members of the public presented testimony.

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[2] The transcripts of the hearings are herein cited as "Tr. at __". Pages 1-94 are from the May 1, 1998, hearing; pages 95-120 are from the May 13, 1998, hearing.

At the second hearing the Agency responded to several questions raised at the first hearing. At the second hearing the Board also sought testimony regarding the Department of Commerce and Community Affairs' (DCCA) economic impact determination, in accord with Public Act 90-489, effective January 1, 1998; no economic impact testimony was received. Tr. at 101.

The third hearing, which had been tentatively scheduled for May 21, 1998, was canceled as provided for at Section 28.5(g)(3) of the Act. Tr. at 118.

By order of June 4, 1998, the Board adopted the Agency's proposal for second notice and forwarded the proposal to the Joint Committee on Administrative Rules (JCAR). At its June 16, 1998, meeting JCAR voted "no objection" to the proposed rules.

Public Comments

The Board received two public comments during the first notice public comment period. The first public comment, PC 1, was filed on April 14, 1998, by Jon Peacy of JPC Consultants. The second public comment, PC 2, was filed on April 24, 1998, by John H. Turner, Divisional Vice-President for State Governmental Affairs of Browning-Ferris Industries (BFI).

Mr. Peacy expressed concern that rules governing NMOC emissions be the same for all pollution control facilities that deal with and treat municipal solid waste, and in particular that they be the same for waste-to-energy incinerators as for landfills. PC 1 at 1. The Agency notes that with today's rules, NMOC from both incinerators and landfills is subject to emission control technology, but that the CAA provides for different types of technology consistent with "the vastly different nature of emissions and how they are generated from these two types of facilities." Tr. at 117. The Board agrees with the Agency.

The BFI public comment is discussed below under the "Monitoring, Testing, Reporting, and Recordkeeping Requirements" heading.

OVERVIEW

Applicability

Today's regulations apply to existing municipal waste landfill owners or operators if construction or modification of the landfill commenced before May 30, 1991, and the landfill has accepted waste at any time since November 8, 1987, or has unused design capacity. See Section 220.200(a). A landfill meeting these conditions may either be inactive or be currently accepting waste. Tr. at 14.

If construction, reconstruction or modification commenced on or after May 30, 1991, today's regulations are not applicable. Rather, the landfill is subject to the requirements of 40

C.F.R. 60, Subpart WWW. See Section 220.200(b). Subpart WWW, which is the codified NSPS, is directly implemented in Illinois through the operation of Section 39.5 of the Act. It accordingly is not included in today's regulations.

The definitions of "construction" and "modification," as used in Part 220, are the definitions that occur at 35 Ill. Adm. Code 201.102 and 35 Ill. Adm. 220.110, respectively. At first notice the proposal also contained the term "reconstruction" in the applicability statement at Section 220.200(a). At second notice the term "reconstruction" was deleted in Section 220.200(a), based on the observation that it is not defined anywhere in the Board's regulations, and the Agency's belief that it is unnecessary since the concept of "reconstruction" does not apply to any existing landfill that is subject to today's regulations. Tr. at 110. However, this term is in the NSPS definitions at 40 C.F.R. 60.15 and is retained in Section 220.200(b) because USEPA retained the term with regard to NSPS applicability. Tr. at 110.

The Board notes that today's regulations apply statewide. In this context, they are unlike some other air regulations that have applicability limited to certain geographic areas of the state. The Board further notes that although the focus of the instant regulations is on municipal solid waste landfills, they also apply to landfills that contain waste that is a mix of household waste and other types of waste such as commercial or industrial solid waste. Tr. at 108-109; definition of "municipal solid waste" at Section 220.110.

Provisions Based on Landfill Capacity and Quantity of Emissions

Today's regulations distinguish between larger and smaller landfills, as measured by the design capacity of the landfill. See definition of "design capacity" at Section 220.110. The design capacity threshold is 2.5 million megagrams (Mg) measured in mass units or 2.5 million cubic meters (m^3) measured in volume units. Today's regulations further distinguish among the larger landfills based on their annual emission rate. The threshold for the annual emissions is 50 Mg/yr of NMOC gases.

Owners or operators of landfills that fall below the 2.5 million Mg or the 2.5 million m^3 design capacity threshold are required only to submit an initial design capacity report to affirm that the landfill falls below that threshold. See Section 220.210(a).

Owners or operators of landfills that are equal to or above the 2.5 million Mg or the 2.5 million m^3 design capacity thresholds are required to file both periodic emission rate reports and an initial design capacity report. See Section 220.210(b). In addition, if the emission rate reports indicate that the emissions are equal to or in excess of the 50 Mg/yr threshold, the owner or operator is required to install a gas collection and control system. See Section 220.210(d)(1). The larger part of today's regulations provide specific design, operation, recordkeeping, and reporting requirements for these gas collection and control systems.

Relationship to Clean Air Act Permit Program (CAAPP)

In addition to imposing control requirements on municipal landfills, the NSPS and EG rules trigger the applicability of Illinois' Clean Air Act Permit Program (CAAPP) requirements and the Annual Emission Report requirements for certain landfills that are not currently subject to these requirements. Reasons at 10. This triggering is a result of provisions in the NSPS and EG, and are not a consequence of this instant rulemaking.

Prior to the adoption of the NSPS and the EG, municipal landfill owners and operators were only required to address the CAAPP relative to emissions of criteria pollutants and individual hazardous air pollutants. Under the NSPS and EG, NMOC is now included in the definition of "regulated air pollutant" and "specified air contaminant," which in turn can cause applicability of CAAPP, depending upon whether the design capacity is greater or less than the 2.5 million Mg and 2.5 million m^3 thresholds.

The Agency notes that the instant regulations do not contain any explicit requirement that affected sources obtain a CAAPP permit. Reasons at 23. This is based on the Agency's belief that existing law at Section 39.5 of the Act and the Board's regulations at 35 Ill. Adm. Code 201 are already sufficient for this purpose. Reasons at 23.

Affected Facilities

The Agency believes that approximately 47 landfills are affected by today's regulations. Tr. at 15. These include 21 facilities that fall below the 2.5 million Mg or 25 million m^3 thresholds and 26 facilities that fall above the threshold. Tr. at 16. The Agency further believes that all of the latter 26 facilities have emissions greater than 50 Mg/yr, and hence are subject to the gas collection and control system requirements. Tr. at 16.

However, 25[3] of the 26 facilities that are subject to the gas collection and control system requirements already have installed or have been issued Agency permits to install such equipment.[4] Tr. at 112. The Agency believes that these 25 landfills are likely to be in substantial compliance with today's rules. Tr. at 76-79.

Timeframes for Compliance

[3] At the time of the May 1, 1998, hearing, the Agency did not yet have information on three of the 26 landfills. Tr. at 111. It thus reported that to its best knowledge 23 landfills had already installed or been issued permits for gas collection and control systems. See, for example, Tr. at 22 and 76. This number was revised at the May 13, 1998, hearing to 25 of the landfills based upon additional information having been received about the last three landfills. Tr. at 112.

[4] Certain new and existing landfills are required to operate landfill gas collection systems for the control of explosive and malodorous gas emissions under the Board's solid waste disposal regulations at 35 Ill. Adm. Code Subtitle G.

Design capacity reports are required no later than October 29, 1998 (which is 90 days after the July 31, 1998, effective date). See Section 220.280(a). Emission rate reports, where required, also must be filed initially by October 29, 1998 (which is 90 days after the July 31, 1998, effective date), and annually thereafter on June 1 of each year. See Section 220.280(b).

Any existing facility that is subject to the gas collection and control system requirements must attain compliance according to the following additional deadlines:

> filing of construction permit application -- one year after reporting that NMOC emissions exceed the 50 Mg/yr threshold (See Section 220.280(c));
>
> installation of gas collection and control system -- 30 months (2.5 years) after reporting that NMOC emissions exceed the 50 Mg/yr threshold (See Section 220.210(d)); and
>
> performance testing and submission of results -- 180 days (6 months) after startup of gas collection and control system (See Section 220.280(e)).

The Agency notes that these provisions are intended to provide the affected facilities sufficient time to evaluate the status of the facilities with respect to the thresholds, determine the need for gas collection and control equipment, install and calibrate the system to meet the provisions of the regulations, and provide the Agency with sufficient documentation to ensure that subject sources are in compliance with the rules. Tr. at 20-21.

Definitions

The definitions that are included in today's regulations are derived mostly from the NSPS and EG, the Act, and the Board's existing air and solid waste regulations. As such, they are generally standard definitions that do not differ in intent from already established definitions. A few of the terms warrant additional comment.

"Inactive Landfill" and "Closed Landfill"

The proposal at first notice contained a definition for "closed landfill" that was derived from the NSPS. As the Board observed at the May 1, 1998, hearing, this definition would have applied to a landfill that was no longer accepting waste, but which had not completed closure requirements are required under the Board's solid waste regulations at 35 Ill. Adm. Code.Subtitle G. Tr. at 57-61. It would have thus been possible to have a landfill characterized as "closed" under the instant regulations that was not "closed" under other portions of the Board's regulations. The Agency agreed. Tr. at 104.

Accordingly, at second notice the Board replaced the first notice term "closed landfill" with "inactive landfill." The definition of "inactive landfill" is the definition proposed by the

Agency at the May 13, 1998, hearing. Tr. 106; Hearing Exh. 1 at 2.[5] The Board believes that this new definition addresses the concerns raised by the original definition. In conformity with the new definition, today's regulations also use the term "closed landfill" in all pertinent places within the text of Part 220. See Sections 220.210(c)(2), 220.270(e), 220.280(c)(1), and 220.280(c)(2).

"Design Capacity" and "Modification"

The terms "design capacity" and "modification" as included in the instant regulations derive from the proposed settlement in National Solid Wastes Management Association v. Browner, et al. Pet. Exh. 7; See Section 220.110. Although both terms are defined in the NSPS and EG, they have been amended in the settlement agreement. The Agency recommends, and the Board agrees, that the amended terms are the appropriate terms for inclusion in this rule. The Agency notes that because the settlement agreement is not yet final, it is committed to returning to the Board for additional amendments as necessary to assure that the Illinois rule conforms with the final USEPA regulations. Reasons at 4.

Standards for Gas Collection and Control Systems

The standards for gas collection and control systems, as presented in today's regulations at Sections 220.220 through 220.250, conform to the standards presented in the federal NSPS and EG, as required under the CAA at Section 111. They are design, operation, and work practice standards rather than performance standards. A performance standard for gas collection systems is not appropriate because it is not technologically feasible to measure the amount of gas available for collection, rather only to estimate how much gas is produced. Reasons at 9; Pet. Exh. 2 at 24448.

The design, operation, and work practice standards are based on utilizing best demonstrated technology (BDT), which USEPA has defined for municipal solid waste landfills at 61 *Fed. Reg.* 9907 (Pet. Exh. 1 at 9907) as:

1) a well-designed and well-operated gas collection system, and
2) a control system achieving 98 percent reduction of landfill emissions for municipal landfills with emissions equal to or greater than 50 Mg/yr.

A well-designed and well-operated gas collection system is further defined as:

1) being capable of handling the maximum expected gas generation rate,

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[5] Exhibits introduced by the Agency during the two hearings held in this matter are cited as "Hearing Exh. ___ at ___."

2) having a design capable of monitoring and adjusting the operation of the system, and
3) being able to collect gas effectively from all areas of the landfill that warrant control.

BDT allows for either passive or active collection systems. The Agency anticipates that most systems will be active systems. Reasons at 16. The simplest acceptable control system consists of an open flare. Pet. Exh. 1 at 9907. USEPA notes that open flares are applicable to all affected and designated facilities regulated by the EG. Pet. Exh. 1 at 9907. If an owner or operator chooses to use an energy recovery system instead of a flare system, the device must demonstrate either 98% NMOC reduction or an outlet NMOC concentration of 20 parts per million by volume (ppmv) or less. Pet. Exh. 1 at 9907.

Alternate Control Systems and Alternate Emissions Standards

Today's regulations include provisions that allow an owner or operator to install an alternate gas collection and control system or a system that meets an alternate emissions standard. See Sections 220.220(d) and (e). The owner or operator proposing to install an alternative system must demonstrate that the system achieves a control level equivalent to the specified systems and must obtain approval from the Agency. See Section 220.220(d).

An owner or operator seeking an alternate emissions standard, or an alternate compliance schedule for an emissions standard, must do so through the Board's adjusted standard procedure pursuant to Section 28.1 of the Act or a variance pursuant to Section 35 of the Act.

Monitoring, Testing, Reporting, and Recordkeeping Requirements

As with the other major provisions of today's action, the monitoring, testing, and reporting requirements specified in the regulations at Sections 220.260 through 220.290 are derived from and closely track the provisions of the NSPS and EG.

Among the noteworthy testing provisions is the three-tiered method for calculating NMOC emissions at Section 220.260(a). The three-tiered system allows owners or operators the option of relying on a simple default calculation of estimated emissions or progressively more elaborate estimation procedures. The tier 1 method produces a relatively conservative emissions estimate. Tr. at 116. The tier 2 and tier 3 methods produce more precise estimates, but are more demanding of data.

The regulations include a requirement that when estimations of gas emissions are made via either tier 2 or tier 3, the estimates must be reported to the Agency on an annual basis. See Section 220.280(c)(1). BFI in PC 2 has raised the question of whether the NSPS and EG allow for reporting NMOC emission on a five-year schedule, rather than an annual schedule. The Agency has responded, and the Board agrees, that the NSPS and EG require annual reporting. Tr. at 115-117.

ENVIRONMENTAL AND ECONOMIC CONSIDERATIONS

Landfill gas is produced within a landfill by microorganisms under anaerobic conditions. It consists primarily of methane and carbon dioxide, with trace amounts of NMOCs. The variety of NMOCs found in landfill gas are large, with as many as 100 different species occurring. Pet. Exh. 1 at 9906. Among these NMOCs are compounds that have specific health and welfare effects.

Some NMOCs are volatile organic materials (VOM) that contribute to the formation of ozone. Ozone is implicated in a wide range of adverse health effects, including alterations in pulmonary functions, aggravation of pre-existing respiratory disease, damage to lung structures, and adverse effects on blood enzymes, the central nervous system, and endocrine systems. Pet. Exh. 2 at 24474. Ozone also has deleterious effects on welfare, including reduced plant growth, decreased crop yield, necrosis of plant tissue, and deterioration of certain synthetic materials such as rubber. Pet. Exh. 2 at 24474.

The Agency estimates that the total uncontrolled VOM emissions from the 26 affected landfills to be 2.15 tons per day, of which 1.49 tons per day are in the Chicago Ozone Nonattainment Area and 0.18 tons per day are in the Metro-East Ozone Nonattainment Area. Tr. at 39-40; Tech. Sup. Doc. at 12. The Agency calculates that the gas collection and control systems required under today's rules provide a reduction in total VOM emissions from the 26 affected landfills down to 0.57 tons per day, for a net reduction of 1.1 tons per day in the Chicago Ozone Nonattainment Area and 0.13 tons per day in the Metro-East Ozone Nonattainment Area. Tr. at 40; Tech Sup. Doc. at 12.

Some NMOC emissions are hazardous air pollutants (HAPs), exposure to which can cause effects including cancer, respiratory irritation, and damage to the nervous system. Pet. Exh. 1 at 9905. Known or suspected carcinogens identified among landfill NMOC emissions are benzene, carbon tetrachloride, chloroform, ethylene dichloride, methylene dichloride, perchloroethylene, trichloroethylene, vinyl chloride, and vinylidene chloride. Pet. Exh. 2 at 24474. These and other landfill NMOCs have also been implicated in other, non-cancer health effects. Pet. Exh. 2 at 24474.

Another aspect of landfill NMOC emissions is offensive odor. The NMOCs are often malodorous and unpleasant, and thereby produce various welfare impacts. Pet. Exh. 2 at 24474.

The cost of the compliance with today's regulations should be relatively small because all but one of the likely-affected landfills are already be in substantial compliance with the regulations. Tr. at 112. Although the Agency anticipates that some of the landfills will require additional monitoring or slight modifications of existing or proposed gas collection systems, it does not believe that these costs will be large. Tr. at 77-79.

For a facility that does not have a gas collection system in place, some perspective on the worst case costs can be obtained from consideration of the estimated cost of removal of a ton of NMOC. The Agency and USEPA estimate, based on nationwide figures, that the average cost for removal of a ton of NMOC is $1,216.[6] Tr. at 114. This figure is based on installation of a gas collection and flaring system as the control mechanism, and is corrected to 1998 costs. Tr. at 114. The Agency observes that a figure in the range of $1,000 per ton for removal of air pollutants is on the low side of costs associated with recent air pollution control programs. Tr. at 80. Recent ozone reduction rules have been based on removal costs in the range of $3,500 to $5,000 per ton, and other air rules have had removal costs close to $10,000 per ton. Tr. at 80-81.

CHANGES FROM SECOND NOTICE

At JCAR's request, some minor changes regarding the effective date of this regulation have been made since second notice. JCAR requested these changes to make the regulation easier to read. Specifically, in Sections 220.210(d)(2) and 220.230(b)(2) "within 39 months of July 31, 1998, the effective date of this Part," has been replaced with "by October 31, 2001." In Section 220.280(a)(1), "90 days after July 31, 1998, the effective date of this Part," has been replaced with "October 29, 1998." Lastly, in Section 220.280(b)(1), the part which reads "within 90 days after July 31, 1998, the effective date of this Part" has been replaced with "by October 29, 1998."

CONCLUSION

Based on the record developed in this matter, the Board believes that adoption of the amendments to 35 Ill. Adm. Code as herein discussed and previously sent to first and second notices is warranted.

ORDER

The Board directs that the following amendments be submitted to the Secretary of State for final notice publication in the *Illinois Register* pursuant to Section 5-40 of the Illinois Administrative Procedure Act:

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER a: PERMITS AND GENERAL PROVISIONS

PART 201

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[6] At the May 1, 1998, hearing the Agency quoted a figure of $1,147 per ton, based on 1992 costs. At the May 13, 1998, hearing the Agency revised this figure to 1998 dollars. Tr. at 114.

PERMITS AND GENERAL PROVISIONS

SUBPART A: DEFINITIONS

SUBPART B: GENERAL PROVISIONS

SUBPART C: PROHIBITIONS

SUBPART D: PERMIT APPLICATIONS AND REVIEW PROCESS

SUBPART E: SPECIAL PROVISIONS FOR OPERATING PERMITS FOR CERTAIN SMALLER SOURCES

SUBPART F: CAAPP PERMITS

SUBPART G: EXPERIMENTAL PERMITS
(Reserved)

SUBPART H: COMPLIANCE PROGRAMS AND PROJECT COMPLETION SCHEDULES

SUBPART I: MALFUNCTIONS, BREAKDOWNS OR STARTUPS

SUBPART J: MONITORING AND TESTING

SUBPART K: RECORDS AND REPORTS

SUBPART L: CONTINUOUS MONITORING

AUTHORITY: Implementing Sections 10, 39, and 39.5 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/10, 27, 39, and 39.5].

SOURCE: Adopted as Chapter 2: Air Pollution, Part I: General Provisions, in R71-23, 4 PCB 191, filed and effective April 14, 1972; amended in R78-3 and 4, 35 PCB 75 and 243, at 3 Ill. Reg.30, p. 124, effective July 28, 1979; amended in R80-5, at 7 Ill. Reg. 1244, effective January 21, 1983; codified at 7 Ill. Reg. 13579; amended in R82-1 (Docket A) at 10 Ill. Reg. 12628, effective July 7, 1986; amended in R87-38 at 13 Ill. Reg. 2066, effective February 3,

1989; amended in R89-7(A) at 13 Ill. Reg. 19444, effective December 5, 1989; amended in R89-7(B) at 15 Ill. Reg. 17710, effective November 26, 1991; amended in R93-11 at 17 Ill. Reg. 21483, effective December 7, 1993; amended in R94-12 at 18 Ill. Reg. 15002, effective September 21, 1994; amended in R94-14 at 18 Ill. Reg. 15760, effective October 17, 1994; amended in R96-17 at 21 Ill. Reg. 7878, effective June 17, 1997; amended in R98-28 at ___Ill. Reg. _____, effective _____.

SUBPART A: DEFINITIONS

Section 201.103 Abbreviations and Units

a) The following abbreviations have been used in this Part:

btu or Btu	British thermal units (60°F)
gal	gallons
hp	horsepower
hr	hour
gal/mo	gallons per month
gal/yr	gallons per year
kPa	kilopascals
kPa absolute	kilopascals absolute
kW	kilowatts
l	liters
Mg	megagrams
m^3	cubic meters
mm or M	million
MW	megawatts; one million watts
NMOC	nonmethane organic compounds
psi	pounds per square inch
psia	pounds per square inch absolute
yr	year

b) The following conversion factors have been used in this Part:

English	Metric
1 gal	3.785 l
1000 gal	3.785 m^3~~cubic meters~~
1 hp	0.7452 kW
1 mmbtu/hr	0.293 MW
1 psi	6.897 kPa

(Source: Amended at ____ Ill. Reg. _____, effective _____)

SUBPART C: PROHIBITIONS

Section 201.146 Exemptions from State Permit Requirements

Construction or operating permits, pursuant to Sections 201.142, 201.143 and 201.144 of this Part, are not required for the classes of equipment and activities listed below in this Section. The permitting exemptions in this Section do not relieve the owner or operator of any source from any obligation to comply with any other applicable requirements, including the obligation to obtain a permit pursuant to Sections 9.1(d) and 39.5 of the Act, Sections 165, 173 and 502 of the Clean Air Act or any other applicable permit or registration requirements.

a) Air contaminant detectors or recorders, combustion controllers or combustion shutoffs;

b) Air conditioning or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment;

c) Each fuel burning emission unit for indirect systems and for heating and reheating furnace systems used exclusively for residential, or commercial establishments using gas and/or fuel oil exclusively with a design heat input capacity of less than 14.6 MW (50 mmbtu/hr) , except that a permit shall be required for any such emission unit with a design heat input capacity of at least 10 mmbtu/hr that was constructed, reconstructed or modified after June 9, 1989 and that is subject to 40 CFR 60, Subpart D;

d) Each fuel burning emission unit other than those listed in subsection (c) of this Section for direct systems used for comfort heating purposes and indirect heating systems with a design heat input capacity of less than 2930 kW (10 mmbtu/hr);

e) Internal combustion engines or boilers (including the fuel system) of motor vehicles, locomotives, air craft, watercraft, lifttrucks and other vehicles powered by nonroad engines;

f) Bench scale laboratory equipment and laboratory equipment used exclusively for chemical and physical analysis, including associated laboratory fume hoods, vacuum producing devices and control devices installed primarily to address potential accidental releases;

g) Coating operations located at a source using not in excess of 18,925 l (5,000 gal) of coating (including thinner) per year;

h) Any emission unit acquired exclusively for domestic use, except that a permit shall be required for any incinerator and for any fuel combustion emission unit using solid fuel with a design heat input capacity of 14.6 MW (50 mmbtu/hr) or more;

i) Any stationary internal combustion engine with a rated power output of less than 1118 kW (1500 horsepower), except that a permit shall be required for any stationary gas turbine engine with a rated heat input at peak load of 10.7 gigajoules/hr (10 mmbtu/hr) or more that is constructed, reconstructed or modified after October 3, 1977 and that is subject to requirements of 40 CFR 60, Subpart GG;

j) Rest room facilities and associated cleanup operations, and stacks or vents used to prevent the escape of sewer gases through plumbing traps;

k) Safety devices designed to protect life and limb, provided that a permit is not otherwise required for the emission unit with which the safety device is associated;

l) Storage tanks for liquids for retail dispensing except for storage tanks that are subject to the requirements of 35 Ill. Adm. Code 215.583(a)(2), 218.583(a)(2) or 219.583(a)(2);

m) Printing operations with aggregate organic solvent usage that never exceeds 2,839 l (750 gal) per year from all printing lines at the source, including organic solvent from inks, dilutents, fountain solutions and cleaning materials;

n) Storage tanks of:

1) Organic liquids with a capacity of less than 37,850 l (10,000 gal), provided the storage tank is not used to store any material listed as a hazardous air pollutant pursuant to Section 112(b) of the Clean Air Act, and provided the storage tank is not subject to the requirements of 35 Ill. Adm. Code 215.583(a)(2), 218.583(a)(2) or 219.583(a)(2);

2) Any size containing exclusively soaps, detergents, surfactants, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, aqueous salt solutions or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials; or

3) Any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil or residual fuel oils.

o) Threaded pipe connections, vessel manways, flanges, valves, pump seals, pressure relief valves, pressure relief devices and pumps;

p) Sampling connections used exclusively to withdraw materials for testing and analyses;

q) All storage tanks of Illinois crude oil with capacity of less than 151,400 l (40,000 gal) located on oil field sites;

r) All organic material-water single or multiple compartment effluent water separator facilities for Illinois crude oil of vapor pressure of less than 34.5 kPa absolute (5 psia);

s) Grain-handling operations, exclusive of grain-drying operations, with an annual grain through-put not exceeding 300,000 bushels;

t) Grain-drying operations with a total grain-drying capacity not exceeding 750 bushels per hour for 5% moisture extraction at manufacturer's rated capacity, using the American Society of Agricultural Engineers Standard 248.2, Section 9, Basis for Stating Drying Capacity of Batch and Continuous-Flow Grain Dryers;

u) Portable grain-handling equipment and one-turn storage space;

v) Cold cleaning degreasers that are not in-line cleaning machines, where the vapor pressure of the solvents used never exceeds 2 kPa (15 mmHg or 0.3 psi) measured at 38°C (100°F) or 0.7 kPa (5 mmHg or 0.1 psi) at 20°C (68°F);

w) Coin-operated dry cleaning operations;

x) Dry cleaning operations at a source that consume less than 30 gallons per month of perchloroethylene;

y) Brazing, soldering, wave soldering or welding equipment, including associated ventilation hoods;

z) Cafeterias, kitchens, and other similar facilities, including smokehouses, used for preparing food or beverages, but not including facilities used in the manufacturing and wholesale distribution of food, beverages, food or beverage products, or food or beverage components;

aa) Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blast cleaning, shot blasting, shot peening, or polishing ceramic artwork, leather, metals (other than beryllium), plastics, concrete, rubber, paper stock, wood or wood products, where such equipment is either:

1) Used for maintenance activity;

2) Manually operated;

3) Exhausted inside a building; or

4) Vented externally with emissions controlled by an appropriately operated cyclonic inertial separator (cyclone), filter, electro-static precipitor or a scrubber.

bb) Feed mills that produce no more than 10,000 tons of feed per calendar year, provided that a permit is not otherwise required for the source pursuant to Section 201.142, 201.143 or 201.144;

cc) Extruders used for the extrusion of metals, minerals, plastics, rubber or wood, excluding:

1) Extruders used in the manufacture of polymers;

2) Extruders using foaming agents or release agents that contain volatile organic materials or Class I or II substances subject to the requirements of Title VI of the Clean Air Act; and

3) Extruders processing scrap material that was produced using foaming agents containing volatile organic materials or Class I or II substances subject to the requirements of Title VI of the Clean Air Act.

dd) Furnaces used for melting metals, other than beryllium, with a brim full capacity of less than 450 cubic inches by volume;

ee) Equipment used for the melting or application of less than 22,767 kg/yr (50,000 lbs/yr) of wax to which no organic solvent has been added;

ff) Equipment used for filling drums, pails or other packaging containers, excluding aerosol cans, with soaps, detergents, surfactants, lubricating oils, waxes, vegetable oils, greases, animal fats, glycerin, sweeteners, corn syrup, aqueous salt solutions or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials;

gg) Loading and unloading systems for railcars, tank trucks, or watercraft that handle only the following liquid materials: soaps, detergents, surfactants, lubricating oils, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, aqueous salt solutions or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials;

hh) Equipment used for the mixing and blending of materials at ambient temperatures to make water based adhesives, provided each material mixed or blended contains less than 5% organic solvent by weight;

ii) Die casting machines where a metal or plastic is formed under pressure in a die located at a source with a throughput of less than 2,000,000 lbs of metal or plastic per year, in the aggregate, from all die casting machines;

jj) Air pollution control devices used exclusively with other equipment that is exempt from permitting, as provided in this Section;

kk) An emission unit for which a registration system designed to identify sources and emission units subject to emission control requirements is in place, such as the registration system found at 35 Ill. Adm. Code 218.586 (Gasoline Dispensing Operations - Motor Vehicle Fueling Operations) and 35 Ill. Adm. Code 218, Subpart HH (Motor Vehicle Refinishing);

ll) Photographic process equipment by which an image is reproduced upon material sensitized to radiant energy;

mm) Equipment used for hydraulic or hydrostatic testing;

nn) General vehicle maintenance and servicing activities conducted at a source, motor vehicle repair shops, and motor vehicle body shops, but not including:

1) Gasoline fuel handling; and

2) Motor vehicle refinishing.

oo) Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing, provided no organic solvent has been added to the water;

pp) Administrative activities including, but not limited to, paper shredding, copying, photographic activities and blueprinting machines. This does not include incinerators;

qq) Laundry dryers, extractors, and tumblers processing that have been cleaned with water solutions of bleach or detergents that are:

1) Located at a source and process clothing, bedding and other fabric items used at the source, provided that any organic solvent present in such items before processing that is retained from cleanup operations shall be addressed as part of the VOM emissions from use of cleaning materials;

2) Located at a commercial laundry; or

3) Coin operated.

rr) Housekeeping activities for cleaning purposes, including collecting spilled and accumulated materials, including operation of fixed vacuum cleaning systems specifically for such purposes, but not including use of cleaning materials that contain organic solvent;

ss) Refrigeration systems, including storage tanks used in refrigeration systems, but excluding any combustion equipment associated with such systems;

tt) Activities associated with the construction, on-site repair, maintenance or dismantlement of buildings, utility lines, pipelines, wells, excavations, earthworks and other structures that do not constitute emission units;

uu) Piping and storage systems for natural gas, propane and liquefied petroleum gas;

vv) Water treatment or storage systems, as follows:

1) Systems for potable water or boiler feedwater;

2) Systems, including cooling towers, for process water, provided that such water has not been in direct or indirect contact with process streams that contain volatile organic material or materials listed as hazardous air pollutants pursuant to Section 112(b) of the Clean Air Act.

ww) Lawn care, landscape maintenance and grounds keeping activities;

xx) Containers, reservoirs or tanks used exclusively in dipping operations to coat objects with oils, waxes or greases, provided no organic solvent has been mixed with such materials;

yy) Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.), where the product is used at a source in the same manner as normal consumer use;

zz) Activities directly used in the diagnosis and treatment of disease, injury or other medical condition;

aaa) Activities associated with the construction, repair or maintenance of roads or other paved or open areas, including operation of street sweepers, vacuum trucks, spray trucks and other vehicles related to the control of fugitive emissions of such roads or other areas;

bbb) Storage and handling of drums or other transportable containers, where the containers are sealed during storage and handling;

ccc) Activities at a source associated with the maintenance, repair or dismantlement of an emission unit or other equipment installed at the source, not including the shutdown of the unit or equipment, including preparation for maintenance, repair or dismantlement, and preparation for subsequent startup, including preparation of a shutdown vessel for entry, replacement of insulation, welding and cutting, and steam purging of a vessel prior to startup;

ddd) Equipment used for corona arc discharge surface treatment of plastic with a power rating of 5 kW or less or equipped with an ozone destruction device;

eee) Equipment used to seal or cut plastic bags for commercial, industrial or domestic use; ~~and~~

fff) Each direct-fired gas dryer used for a washing, cleaning, coating or printing line, excluding:

1) Dryers with a rated heat input capacity of 2930 kW (10 mmbtu/hr) or more; and

2) Dryers for which emissions other than those attributable to combustion of fuel in the dryer, including emissions attributable to use or application of cleaning agents, washing materials, coatings or inks or other process materials that contain volatile organic material are not addressed as part of the permitting of such line, if a permit is otherwise required for the line~~.~~; and

ggg) Municipal solid waste landfills with a maximum total design capacity of less than 2.5 million Mg or 2.5 million m^3 that are not required to install a gas collection and control system pursuant to 35 Ill. Adm. Code 220 or 800 through 849 or Section 9.1 of the Act.

(Source: Amended at ___ Ill. Reg. _____, effective _____)

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: EMISSION STANDARDS AND LIMITATIONS FOR STATIONARY SOURCES

PART 220
NONMETHANE ORGANIC COMPOUNDS

SUBPART A: GENERAL PROVISIONS

Section
220.100 Purpose
220.110 Definitions
220.120 Abbreviations
220.130 Incorporations by Reference

SUBPART B: MSW LANDFILLS

Section
220.200 Applicability
220.210 Compliance Requirements and Schedule
220.220 Gas Collection System Requirements
220.230 Gas Control System Requirements
220.240 Compliance Procedures for Gas Collection Systems
220.250 Operational Standards for Collection and Control Systems
220.260 Test Methods and Procedures
220.270 Monitoring of Operations
220.280 Reporting Requirements
220.290 Recordkeeping Requirements

AUTHORITY: Implementing and authorized By Sections 4, 9.1, 27, and 28.5 of the Illinois Environmental Protection Act [415 ILCS 5/4, 9.1, 27, and 28.5].

SOURCE: Adopted at Ill. Reg. , effective .

SUBPART A: GENERAL PROVISIONS

Section 220.100 Purpose

This Part contains emission control requirements for municipal solid waste (MSW) landfills in accordance with section 111(d) and subpart B of the Clean Air Act.

Section 220.110 Definitions

The definitions in this Section apply only to the provisions of this Part. Unless otherwise defined herein and unless a different meaning of a term is clear from its context, the definitions of terms used in this Part shall have the meanings specified by 35 Ill. Adm. Code 201.102, 211, and 810.103.

"Active collection system" means a gas collection system that uses gas mover equipment.

"Active landfill" means a landfill in which solid waste is being placed or a landfill that is planning to accept waste in the future.

"Commercial waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding household and industrial wastes.

"Controlled landfill" means any landfill at which collection and control systems are required under this Part as a result of the NMOC emission rate. The landfill is considered controlled at the time an application for a construction permit for a collection and control system is submitted to the Agency in compliance with Sections 220.220 and 220.230 of this Part.

"Design capacity" means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass, as specified in the permit(s) issued pursuant to Section 21(d) of the Act for the source plus any in-place waste not accounted for in the permit(s); if no design capacity is specified in a permit, then the design capacity shall be calculated using good engineering practices; or if the landfill is closed pursuant to the applicable regulations in 35 Ill. Adm. Code.Subtitle G, the actual capacity specified in the closure plan. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million Mg or 2.5 million m^3, the calculation must include a site-specific density, which must be recalculated annually.

"Disposal facility" means all contiguous land and structures, and improvements on the land used for the disposal of solid waste. Portions of the disposal facility may be separated by access roads.

"Emission rate cutoff" means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under this Part is required.

"Enclosed combustor" means an enclosed firebox. Examples include, but are not limited to, an enclosed flare, a boiler, and an internal combustion engine.

"Flare" means an open combustor without enclosure or shroud.

"Gas mover equipment" means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

"Household waste" means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

"Inactive landfill" means a landfill in which solid waste is no longer being placed, and that is no longer permitted to accept waste under Section 21 of the Act or has a federally enforceable permit condition prohibiting the acceptance of additional waste. If an inactive landfill is subsequently permitted to accept additional waste and additional

solid waste is placed in the landfill, the landfill is no longer inactive.

"Industrial waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA, 40 CFR 264 and 265. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

"Interior well" means any well or similar collection component located inside the perimeter of the landfill. A perimeter well located outside the landfilled waste is not an interior well.

"Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, or an underground injection well. For the purposes of this Part, landfills include waste piles.

"Lateral expansion" means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification for the purposes of filing an amended design capacity report pursuant to Section 220.210(a) of this Part, unless it results in an increase in the design capacity of the landfill.

"Modification" means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion.

"Municipal solid waste (MSW)" means household waste.

"Municipal solid waste (MSW) landfill" means an entire disposal facility or landfill in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned or operated.

"Municipal solid waste (MSW) landfill emissions" means gas generated by decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

"Nondegradable waste" means any waste that does not decompose through chemical breakdown or microbiological activity. Examples include, but are not limited to,

concrete, municipal waste combustor ash, and metals.

"Nonmethane organic compounds (NMOC)" means nonmethane organic compounds, as measured according to the provisions of Section 220.260 of this Part.

"Passive collection system" means a gas collection system that uses solely positive pressure within the landfill to move the gas rather than using gas mover equipment.

"Putrescible waste" means a solid waste that contains organic matter capable of being decomposed by microorganisms so as to cause a malodor, gases, or other offensive conditions, or which is capable of providing food for birds and vectors. Putrescible wastes may form a contaminated leachate from microbiological degradation, chemical processes, and physical processes. Putrescible waste includes, but is not limited to, garbage, offal, dead animals, general household waste, and commercial waste. All solid wastes that do not meet the definitions of inert or chemical wastes shall be considered putrescible wastes.

"Sludge" means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.

"Solid waste" means a waste that is defined as an inert waste, as a putrescible waste, as a chemical waste or as a special waste, and which is also not defined as a hazardous waste pursuant to 35 Ill. Adm. Code 721.

"Sufficient density" means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this Part.

"Sufficient extraction rate" means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

Section 220.120 Abbreviations

Act	Illinois Environmental Protection Act
Agency	Illinois Environmental Protection Agency
Board	Illinois Pollution Control Board
°C	degrees Celsius or centigrade
cm	centimeters
CAAPP	Clean Air Act Permit Program
°F	degrees Fahrenheit

hr	hours
m	meters
m^3	cubic meters
Mg	megagrams
mmbtu	million British thermal units
MSW	municipal solid waste
MW	megawatt; 1 million watts
NMOC	nonmethane organic compounds
NOx	nitrogen oxides
ppm	parts per million
ppmv	parts per million by volume
RCRA	Resource Conservation and Recovery Act
SIP	State Implementation Plan
USEPA	United States Environmental Protection Agency
VOC	volatile organic compounds
VOM	volatile organic material
yr	years

Section 220.130 Incorporations by Reference

The following materials are incorporated by reference. These incorporations by reference do not include any later amendments or editions.

a) Section 4 of Method 2E: Determination of Landfill Gas; Gas Production Flow Rate, 40 CFR 60, Appendix A (61 Fed. Reg. 9929 (March 12, 1996)).

b) Method 25C: Determination of Nonmethane Organic Compounds (NMOC) in MSW Landfill Gases, 40 CFR 60, Appendix A (61 Fed. Reg. 9929 (March 12, 1996)).

c) Compilation of Air Pollutant Emission Factors (AP-42) the Technical Support Division of OAQPS, EPA, MD-14, Research Triangle Park, NC 27711 (1997).

d) Sections 3, 3.1.3, 4.2, 4.3.1, and 4.4 of Method 21 of Appendix A, 40 CFR 60 (1997).

e) Method 3C, Appendix A, 40 CFR 60 (1997).

f) Method 3A, Appendix A, 40 CFR 60 (1997).

g) Method 18, Appendix A, 40 CFR 60 (1997).

h) General Control Device Requirements, 40 CFR 60.18 (1997).

SUBPART B: MSW LANDFILLS

Section 220.200 Applicability

a) Except as provided in subsection (b) of this Section, an owner or operator of an MSW landfill for which construction or modification commenced before May 30, 1991, is subject to the requirements of this Subpart if the landfill has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition.

b) Any MSW landfill that commenced construction, reconstruction, or modification on or after May 30, 1991, is subject to the requirements of 40 CFR 60, Subpart WWW, in lieu of the requirements of this Part.

Section 220.210 Compliance Requirements and Schedule

a) Each owner or operator of an MSW landfill having a design capacity less than 2.5 million Mg by mass or 2.5 million m^3 by volume shall submit an initial design capacity report to the Agency as provided in Section 220.280(a) of this Subpart. The owner or operator may calculate design capacity in either Mg or m^3 for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. If the landfill is subsequently modified, then the owner or operator shall submit to the Agency an amended design capacity report as provided for in Section 220.280(a)(3) of this Subpart. Submittal of an initial design capacity report and, if applicable, an amended design capacity report shall fulfill the requirements of this Subpart. Pursuant to Section 220.200(b) of this Subpart, modification of an MSW landfill will subject it to the requirements of 40 CFR 60, Subpart WWW.

b) An owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million Mg and 2.5 million m^3 shall submit an initial design capacity report and initial emissions rate report to the Agency, as provided in Section 220.280(a) and (b) of this Subpart, and comply with either subsection (c) or (d) of this Section.

c) For MSW landfills with an NMOC emissions rate less than 50 Mg/yr, the owner or operator shall:

1) Submit an emission rate report, as provided by Section 220.280(b) of this Subpart, to the Agency; and

2) Recalculate the NMOC emission rate using the procedures specified in Section 220.260(a) of this Subpart until such time as the calculated NMOC emission rate is equal to or greater than 50 Mg/yr, at which time the provisions of subsection (d) of this Section shall apply, or the landfill is inactive.

d) For MSW landfills with emissions equal to or greater than 50 Mg/yr, calculated pursuant to Section 220.260(a) of this Subpart, within 30 months after the date when the first annual NMOC emission rate report equals or exceeds 50 Mg/yr, an owner or operator shall:

1) Install and operate:

A) A gas collection and control system meeting the gas collection system and control requirements of Sections 220.220 and 220.230 of this Subpart; or

B) An alternate gas collection and control system using alternate procedures for gas collection and control, determining compliance, monitoring, operation, testing, recordkeeping, or reporting instead of those provided for in this Subpart, as approved by the Agency or Board, as meeting the requirements in Section 220.220(d) or (e), or Section 220.230(d) or (e) of this Subpart. Such alternate system shall be effective only when included in a federally enforceable permit or approved as a SIP revision.

2) Certify compliance: Within 6 months of initial startup or upon change in method of compliance, or by October 31, 2001, whichever is later, the owner or operator of an MSW landfill subject to the control requirements of this Subpart must certify compliance with the requirements of this Subpart by submitting to the Agency the following:

A) A description of the gas collection and control system used;

B) The date the system was installed; and

C) A demonstration that the control system meets the requirements of Section 220.230 of this Subpart:

i) For active collection systems: the reduction efficiency or ppmv must be established by a performance test using the test methods required pursuant to Section 220.260(d) of this Subpart; or

ii) For open flares: compliance with the requirements of 40 CFR 60.18, incorporated by reference in Section 220.130 of this Part, must be established.

Section 220.220 Gas Collection System Requirements

a) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million Mg and 2.5 million m^3, and a calculated NMOC emission rate equal to or greater than 50 Mg/yr, must install and operate a gas collection system that meets the requirements of either subsection (b), (c), (d), or (e) of this Section and:

1) Handles maximum expected gas flow rate from the entire area of the MSW landfill that warrants control pursuant to subsection (b)(1)(D) of this Section for the period required in Section 220.250(h) of this Subpart, as calculated pursuant to Section 220.240(a) of this Subpart;

2) Collects gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:

A) 5 years or more, if active; or

B) 2 years or more if closed or at final grade;

3) Is designed to minimize off-site migration of subsurface gas;

4) Routes all the collected gas to a control system that complies with the requirements in Section 220.230 of this Subpart; and

5) Collects and treats gas in accordance with the applicable requirements of 35 Ill. Adm. Code.Subtitle G.

b) Active Collection Systems:

1) Active collection wells, horizontal collectors, surface collectors, or other extraction devices shall be sited at a sufficient density throughout all gas producing areas using the following procedures:

A) The collection devices within the interior and along the perimeter areas shall be designed to achieve comprehensive control of surface gas emissions.

B) The sites for gas collection devices, as determined in subsection (b)(1)(A) of this Section, shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

C) Collect gas at a sufficient extraction rate, as defined at Section 220.110 of this Part.

D) The placement of gas collection devices determined in subsection (b)(1)(A) of this Section shall control all gas producing areas, except as provided by this subsection (b)(1)(D).

i) Any segregated area of asbestos or nondegradable material may be excluded from collection, if documented as provided under Section 220.280(f)(3) of this Subpart. The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Agency upon request.

ii) Any nonproductive area of the landfill may be excluded from control provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Agency upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill, as calculated pursuant to Section 220.260 of this Subpart. Emissions from each section shall be computed using the following equation:

$$Q_i = 2k\,L_o\,M_i\,(e^{-kt_i})(C_{NMOC})(3.6\times10^{-9})$$

where:

Q_i	=	NMOC emission rate from the i^{th} section, Mg/yr
k	=	methane generation rate constant, yr^{-1}
L_o	=	methane generation potential, m^3 per Mg solid waste
M_i	=	mass of degradable solid waste in the i^{th} section, Mg
t_i	=	age of the solid waste in the i^{th} section, years
C_{NMOC}	=	concentration of NMOC, ppmv
3.6×10^{-9}	=	conversion factor

The values for k and C_{NMOC} determined in field testing shall be used, if field testing has been performed in determining the NMOC emission rate or the radii of

influence (the distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, L_o, and C_{NMOC} provided in Section 220.260(a)(1) of this Subpart shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions, provided the nature, location, age and amount of the nondegradable material is documented.

2) The gas collection devices shall be constructed using the following equipment or procedures:

A) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices, such as wells and horizontal collectors, shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.

B) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover, refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

C) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous

material of suitable thickness.

3) The landfill gas shall be conveyed to a gas control system through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected for the period of intended use pursuant to Section 220.250(h) of this Subpart using the following procedures:

A) For existing gas collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in subsection (b)(3)(B) of this Section shall be used.

B) For new gas collection systems, the maximum flow rate shall be in accordance with Section 220.240(a) of this Subpart.

c) Passive Collection Systems:

1) A passive collection system shall be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall meet all requirements specified in 35 Ill. Adm. Code 811.306.

2) The collection and control system shall either conform with the specifications for active collection systems in subsection (a) of this Section or the owner or operator must obtain the Agency's approval for alternate provisions as provided for in subsection (d) of this Section.

d) Alternate Collection Systems:

An owner or operator seeking to install an alternate gas collection system shall demonstrate to the Agency that such collection system is capable of capturing the maximum expected gas flow rate from the entire area of the MSW landfill, for the period required in Section 220.250(h) of this Subpart, as calculated pursuant to Section 220.240(a) of this Subpart, and in an equivalent manner to that required by this Section. Any alternate gas collection system must be approved by the Agency. Such alternate shall be effective only when included in a federally enforceable permit or approved as a SIP revision. The alternate shall include any alternate procedures for collection, control, compliance, monitoring, operation, testing, reporting, and recordkeeping that are appropriate.

e) Alternate Emissions Standard:

Pursuant to Section 28.1 of the Act [415 ILCS 5/28.1], and in accordance with 35 Ill. Adm. Code 106, Subpart G, provisions for adjusted standards, adjusted standards for alternate emissions standards or alternate emissions standards with

an alternate compliance schedule shall be granted by the Board, to the extent consistent with federal law. An owner or operator seeking an alternate emissions standard or an alternate emissions standard with an alternate compliance schedule must demonstrate to the Board that, with respect to the MSW landfill, the control requirements meet one or more of the criteria listed in this subsection (e) pursuant to 40 CFR 60.24(f). Any such request must be approved by the Board. Such alternate shall be effective only when included in a federally enforceable permit or approved as a SIP revision. Any alternate shall include any procedures for collection, control, compliance, monitoring, operation, testing, reporting and recordkeeping that are appropriate and a demonstration that the control requirements, as contained in this Subpart, as they apply to the MSW landfill, meet one or more of the following criteria:

1) Unreasonable cost of control resulting from plant age, location, or basic process design;

2) Physical impossibility of installing necessary control equipment; or

3) Other factors specific to the MSW landfill that support an alternate emissions standard or alternate emissions standard with final compliance date.

Section 220.230 Gas Control System Requirements

Each owner and operator of an MSW landfill subject to the control requirements of this Subpart must install and operate a gas collection system that routes all the collected gas to a gas control system that complies with the requirements in subsection (f) and either install a gas control system, as described in either subsection (a), (b), or (c) of this Section, or obtain approval of and install an alternate gas control system pursuant to subsection (d) or (e) of this Section.

a) An open flare designed and operated in accordance with 40 CFR 60.18, incorporated by reference in Section 220.130 of this Part.

b) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight-percent or reduce the outlet NMOC concentration to less than 20 ppmv, dry basis as hexane at 3 percent oxygen. The reduction efficiency or ppmv must be established by an initial performance test required pursuant to Section 220.210(d)(2), using the test methods required under Section 220.260(d) of this Subpart:

1) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

2) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in Section 220.270 of this Subpart. The initial performance test must be performed within 6 months after startup or by October 31, 2001, whichever is later.

c) A treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of subsection (b) of this Section.

d) An alternate gas control system approved by the Agency. An owner or operator seeking to install an alternate gas control system shall demonstrate to the Agency that such collection system is capable of control equivalent to subsection (b) of this Section. Such alternate shall be effective only when included in a federally enforceable permit or approved as a SIP revision. The alternate shall include any alternate procedures for collection, control, compliance, monitoring, operation, testing, reporting, and recordkeeping that are appropriate.

e) Pursuant to Section 28.1 of the Act [415 ILCS 5/28.1], and in accordance with 35 Ill. Adm. Code 106, Subpart G, provisions for adjusted standards, adjusted standards for alternate emissions standards or alternate emissions standards with an alternate compliance schedule shall be granted by the Board, to the extent consistent with federal law. An owner or operator seeking an alternate emissions standard or an alternate emissions standard with an alternate compliance schedule must demonstrate to the Board that, with respect to the MSW landfill, the control requirements meet one or more of the criteria listed in this subsection (e), pursuant to 40 CFR 60.24(f). Any such request must be approved by the Board. Such alternate shall be effective only when included in a federally enforceable permit or approved as a SIP revision. Any alternate shall include any procedures for collection, control, compliance, monitoring, operation, testing, reporting, and recordkeeping that are appropriate and a demonstration that the control requirements as contained in this Subpart, as they apply to the MSW landfill, meet one or more of the following criteria:

1) Unreasonable cost of control resulting from plant age, location, or basic process design;

2) Physical impossibility of installing necessary control equipment; or

3) Other factors specific to the MSW landfill that support an alternate emissions standard or alternate emissions standard with final compliance date.

f) Gas control systems must be operated in accordance with a permit issued

pursuant to the applicable requirements of 35 Ill. Adm. Code.Subtitle G.

Section 220.240 Compliance Procedures for Gas Collection Systems

a) The methods specified in subsections (a)(1) through (a)(6) of this Section shall be used to determine whether the gas collection system is in compliance with Section 220.220 of this Subpart.

1) To calculate the maximum expected gas generation flow rate from the MSW landfill, one of the following equations shall be used. The k and L_o kinetic factors shall be those published in the Compilation of Air Pollutant Emission Factors (AP-42) incorporated by reference in Section 220.130 of this Part, or other site-specific emission factors approved by the Agency. If k has been determined as specified in Section 220.260(a)(4) of this Subpart, the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment, the variable t. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

A) For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_oR(e^{-kc}-e^{-kt})$$

where:

Q_m	=	maximum expected gas generation flow rate, m^3/yr
L_o	=	methane generation potential, m^3 per Mg solid waste
R	=	average annual acceptance rate, Mg/yr
k	=	methane generation rate constant, yr^{-1}
t	=	age in years of the landfill at equipment installation plus time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t in years is the age of the landfill at installation
c	=	time since closure, years (for an active landfill c = 0 and $e^{-kc}=1$)

B) For sites with known year-to-year solid waste acceptance rates:

$$Q_m = \sum_{i=1}^{n} 2\,kL_o\,M_i(e^{-kt_i})$$

where:

Q_m	=	maximum expected gas generation flow rate, m^3/yr
k	=	methane generation rate constant, yr^{-1}
L_o	=	methane generation potential, m^3 per Mg solid waste
M_i	=	mass of solid waste in the i^{th} section, Mg
t_i	=	age of the i^{th} section, yr

C) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in subsections (a)(1)(A) and (a)(1)(B) of this Section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations made using the equations in subsection (a)(1)(A) or (a)(1)(B) of this Section or other methods shall be used to predict the maximum gas generation rate over the intended period of use of the gas control system equipment.

2) For the purpose of determining the sufficient number of gas collectors, the owner or operator shall design a system of vertical wells, horizontal collectors, or other type of collection device, capable of controlling and extracting gas from all portions of the landfill sufficient to meet the operational and performance standards of Sections 220.220 through 220.250. Such design must be approved by the Agency as part of an air construction permit or a CAAPP permit, if the gas collection system was installed prior to July 31, 1998.

3) For the purpose of demonstrating whether the gas collection system flow rate of an active collection system is sufficient, the owner or operator shall measure gauge pressure in the gas collection header at each individual well monthly. If positive pressure exists, action shall be initiated to correct the exceedence within 5 calendar days, except for the three conditions allowed under Section 220.250(b) of this Subpart. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days after the first measurement, the gas collection system shall be expanded to correct the exceedence within 120 days after the initial measurement of positive pressure. Any attempted corrective measure must not cause exceedences of other operational or performance standards. An alternate timeline for correcting the exceedence may be submitted to the Agency for approval.

4) Owners or operators are not required to expand the system, as required in subsection (a)(3) of this Section, during the first 180 days after gas collection system startup.

5) For purposes of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well on a monthly basis for temperature and nitrogen or oxygen, as provided in Section 220.250(c) of this Subpart. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedence within 5 calendar days. If correction of the exceedence cannot be achieved within 15 calendar days after the first measurement, the gas collection system shall be expanded to correct the exceedence within 120 days after the initial exceedence. An alternate timeline for correcting the exceedence may be submitted to the Agency for approval.

6) An owner or operator using a collection system that does not conform to the specifications provided in Section 220.220(b) or (c) of this Subpart shall provide information satisfactory to the Agency, as specified in Section 220.220(d) of this Subpart, demonstrating that off-site migration is being controlled.

b) To comply with the operational standards in Section 220.250(a) of this Subpart, each owner or operator of a controlled landfill shall install each well or design component as specified in a construction permit issued by the Agency. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

1) 5 years or more if active; or

2) 2 years or more if closed or at final grade.

c) The following procedures shall be used for compliance with the surface methane operational standard as provided in Section 220.250(d) of this Subpart.

1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30-meter intervals (or site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in subsection (d) of this Section.

2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part, except that the probe inlet shall be placed within 5 to 10 cm of the ground. Monitoring shall be performed during typical meteorological conditions.

4) Any reading of 500 ppm or more above background at any location shall be recorded as a monitored exceedence and the actions specified in subsections (c)(4)(A) through (c)(4)(E) of this Section shall be taken. As long as the actions specified below are taken, the exceedence is not a violation of the operational requirements of Section 220.250(d) of this Subpart.

A) The location of each monitored exceedence shall be marked and the location recorded.

B) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedence shall be made and the location shall be remonitored within 10 calendar days after detecting the exceedence.

C) If the remonitoring of the location shows a second exceedence, additional corrective action shall be taken and the location shall be monitored again within 10 days after the second exceedence. If the remonitoring shows a third exceedence for the same location, the action specified in subsection (c)(4)(E) of this Section shall be taken. No further monitoring of that location is required until the action specified in subsection (c)(4)(E) of this Section has been taken.

D) If the remonitoring of the location does not show an exceedence, as specified by subsection (c)(4)(B) or (c)(4)(C), the location shall be remonitored 1 month from the initial exceedence. If the 1 month remonitoring shows a concentration less than 500 ppm above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1 month remonitoring shows an exceedence, the actions specified in subsection (c)(4)(C) or (c)(4)(E) of this Section, as appropriate, shall be taken.

E) For any location where there are three monitored exceedences within a quarterly period, a new well or other collection device shall be installed within 120 calendar days after the initial exceedence. An alternate remedy to the exceedence, such as

upgrading the blower, header pipes, or control device, and a corresponding timeline for installation may be submitted to the Agency for approval.

5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

d) The following instrumentation specifications and procedures for surface emission monitoring devices apply to the monitoring required by subsection(c) of this Section:

1) The portable analyzer shall meet the instrument specifications provided in Section 3, Method 21, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part, except that methane shall replace all references to VOC.

2) The calibration gas shall be methane, diluted to a nominal concentration of 500 ppm in air.

3) To meet the performance evaluation requirements in Section 3.1.3, Method 21, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part, the instrument evaluation procedures of Section 4.4 of Method 21, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part, shall be used.

4) The calibration procedures provided in Section 4.2, Method 21, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part, shall be followed immediately before commencing a surface monitoring survey.

e) The MSW landfill owners or operators are required to comply with the provisions of this Subpart at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction must not exceed 5 days for collection systems and must not exceed 1 hour for treatment or control devices.

Section 220.250 Operational Standards for Collection and Control Systems

Each owner or operator of an MSW landfill with a gas collection and control system shall:

a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which the initial solid waste has been in place for:

1) 5 years or more if active; or

2) 2 years or more if closed or at final grade.

b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in Section 220.280(e)(1) of this Subpart.

2) Use of a geomembrane or synthetic cover. The owner or operator shall develop pressure limits associated with such a cover that must be approved by the Agency.

3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Agency.

c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C (131°F) and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration that provides supporting data to show that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methagens must be approved by the Agency before such higher operating value may be used. Operating values shall be determined as follows:

1) The nitrogen level shall be determined using Method 3C, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part.

2) The oxygen level shall be determined by an oxygen meter using Method 3A, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part, except that:

A) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

B) A data recorder is not required;

C) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;

D) A calibration error check is not required; and

E) The allowable sample bias, zero drift, and calibration drift are plus or minus 10 percent.

d) Operate the collection system so that the methane concentration is less than 500 ppm above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30-meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. An initial surface monitoring design plan shall be developed and included as part of the operating permit application (e.g., a CAAPP permit application) that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30-meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. The monitoring plan shall be updated as necessary. Updated copies must be sent to the Agency and kept on-site at the MSW landfill.

e) Operate the gas collection and control system such that all collected gases are vented to a control system designed and operated in compliance with Sections 220.230, 220.250, and 220.270 of this Subpart. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour.

f) Operate the gas collection and control or treatment system at all times, except during shutdown or malfunction, provided that the duration of start-up, shutdown, or malfunction must not exceed 5 days for collection systems and must not exceed 1 hour for treatment or control devices.

g) If monitoring demonstrates that the operational requirements in subsection (b), (c), or (d) of this Section are not met, take corrective action as specified in Section 220.240(a)(3), (a)(5), or (c)(4) of this Subpart. If such corrective actions are taken as specified in Section 220.240(a)(3), (a)(5), or (c)(4) of this Subpart, the monitored exceedence is not a violation of the operational requirements in this Section.

h) The collection and control system may be capped or removed provided:

1) The landfill is no longer accepting solid waste;

2) A system removal report has been submitted to the Agency, as provided in Section 220.280(d) of this Subpart;

3) The collection and control system has been operating a minimum of 15

years;

4) The calculated NMOC gas produced by the landfill is less than 50 Mg/yr on three successive test dates, pursuant to the procedures specified in Section 220.260(b) of this Subpart. The test dates shall be no less than 90 days apart, and no more than 180 days apart; and

5) The system is not required to satisfy any applicable requirement of 35 Ill. Adm. Code.Subtitle G.

Section 220.260 Test Methods and Procedures

a) The landfill owner or operator shall calculate the NMOC emission rate using the equation provided in either subsection (a)(1)(A) or subsection (a)(1)(B) of this Section and make a determination that the emission rate is less than 50 Mg/yr, pursuant to subsection (a)(2), (a)(3), (a)(4), or (e), or install a gas collection and control system pursuant to Sections 220.220 and 220.230 of this Subpart. However, both equations may be used if the actual year-to-year solid waste acceptance rate is known pursuant to subsection (a)(1)(A) of this Section, for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, pursuant to subsection (a)(1)(B) of this Section, for part of the life of the landfill. If the NMOC emission rate calculated in this subsection is less than 50 Mg/yr, then the landfill owner shall submit an emission rate report as provided in Section 220.280(b) of this Subpart, and shall recalculate the NMOC mass emission rate as required under Section 220.210(c) of this Subpart.

1) The values to be used in both equations are 0.05/yr for k, 170 m^3 per Mg for L_o, and 4,000 ppmv as hexane for the C_{NMOC}.

A) The following equation shall be used if the actual year-to-year solid waste acceptance rate is known:

$$M_{NMOC} = \sum_{i=1}^{n} 2kL_o M_i (e^{-kt_i})(C_{NMOC})(3.6x10^{-9})$$

where:

M_{NMOC} = Total NMOC emission rate from the landfill, Mg/yr
k = methane generation rate constant, yr^{-1}
L_o = methane generation potential, m^3 per Mg solid waste

M_i = mass of solid waste in the i^{th} section, Mg
t_i = age of the solid waste in the i^{th} section, years
C_{NMOC} = concentration of NMOC, ppmv as hexane
3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

B) The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown:

$$M_{NMOC} = 2L_o R(e^{-kc} - e^{-kt})(C_{NMOC})(3.6 \times 10^{-9})$$

where:

M_{NMOC} = Total NMOC emission rate from the landfill, Mg/yr
L_o = methane generation potential, m^3 per Mg solid waste
R = average annual acceptance rate, Mg/yr
k = methane generation rate constant, $year^{-1}$
t = age of landfill, years
C_{NMOC} = concentration of NMOC, ppmv as hexane
c = time since closure, years (for active landfill c = 0 and $e^{-kc} = 1$)
3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the average annual acceptance rate when calculating a value for R, if documentation of the nature and amount of such wastes is maintained.

2) Tier 1. The landfill owner or operator shall calculate the NMOC mass emission rate using the equations provided in subsection (a)(1)(A) or (a)(1)(B) of this Section. The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 Mg/yr using the default values for the NMOC mass emission rate and the methane generation rate constant.

3) Tier 2. The landfill owner or operator shall calculate the NMOC mass emission rate using the equations provided in subsection (a)(1)(A) or (a)(1)(B) of this Section using the average NMOC concentration from the collected samples instead of the default value in the equations provided

in subsection (a)(1) of this Section. The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure: The landfill owner or operator shall install at least 2 sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25C or Method 18 of Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part. If using Method 18, the minimum list of compounds to be tested shall be those published in the Compilation of Air Pollutant Emission Factors (AP-42), incorporated by reference in Section 220.130 of this Part. If composite sampling is used, equal volumes shall be taken from each sample probe. If more than the required number of samples are taken, all samples shall be used in the analysis. Divide the NMOC concentration from Method 25C by 6 to convert from C_{NMOC} as carbon to C_{NMOC} as hexane. The owner or operator shall retest the site-specific NMOC concentration every 5 years using the methods specified in this Section

4) Tier 3. The landfill owner or operator shall estimate the NMOC mass emission rate using equations in subsection (a)(1)(A) or (a)(1)(B) of this Section and using a site-specific methane generation rate constant k, and the site-specific NMOC concentration as determined in subsection (a)(3) of this Section instead of the default values provided in subsection (a)(1) of this Section. The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part. The calculation of the methane generation rate constant is performed only once, and the value obtained is used in all subsequent annual NMOC emission rate calculations. In addition, pursuant to subsection (a)(3) of this Section, the owner or operator shall retest the site-specific NMOC concentration every 5 years using the methods specified in that subsection.

b) After the installation of a collection and control system in compliance with Sections 220.220 and 220.230 of this Subpart, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in Section 220.250(h) of this Subpart, using the following equation:

$$M_{NMOC} = 1.89 \times 10^{-3} Q_{LFG} C_{NMOC}$$

where:

M_{NMOC} = mass emission rate of NMOC (Mg/yr)
Q_{LFG} = flow rate of landfill gas (m^3/minute)
C_{NMOC} = NMOC concentration (ppmv as hexane)

1) The flow rate of landfill gas (Q_{LFG}) shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of Section 4 of Method 2E, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part.

2) The average NMOC concentration (C_{NMOC}) shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part. If using Method 18, the minimum list of compounds to be tested shall be those published in the Compilation of Air Pollutant Emission Factors (AP-42), incorporated by reference in Section 220.130 of this Part. The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C by 6 to convert C_{NMOC} as carbon to C_{NMOC} as hexane.

c) If the gas collection system complies with the provisions in Section 220.220 of this Subpart and is already installed, the owner or operator shall estimate the NMOC emission rate using the procedures provided in subsection (b) of this Section. For areas of the landfill where the owner or operator has not been required to install a well yet, he/she may select an appropriate method from subsection (a) of this Section to estimate emissions.

d) For the performance test required in Section 220.210(d)(2) of this Subpart, Method 25C or Method 18, Appendix A, 40 CFR 60, incorporated by reference in Section 220.130 of this Part, shall be used to determine compliance with 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Agency as provided by Section 220.230(d) of this Subpart. If using Method 18, the minimum list of compounds to be tested shall be those published in the Compilation of Air Pollutant Emission Factors (AP-42), incorporated by reference in Section 220.130 of this Part. The following equation shall be used to calculate efficiency:

Control efficiency = $(NMOC_{in} - NMOC_{out})/(NMOC_{in})$

where:

$NMOC_{in}$ = mass of NMOC entering control device
$NMOC_{out}$ = mass of NMOC exiting control device

e) The owner or operator may use other methods to determine the NMOC concentration, site-specific k, or landfill gas flow rate, as an alternate to the methods required in subsection (a)(3) and (a)(4) of this Section, if the method has been approved by the Agency, as provided for in Section 220.220(d) or Section 220.230(d) of this Subpart.

f) The owner or operator may use the procedures described in AP-42, Compilation of Air Pollutant Emission Factors, incorporated by reference in Section 220.130 of this Part, to estimate emissions pursuant to the annual emission report required in 35 Ill. Adm. Code 210.302(a). The most recent values for k, L_o, and NMOC concentration reported in AP-42 shall be used to calculate emissions. To determine applicability of or compliance with the requirements of this Part, the owner or operator must use the tiered emission estimates provided in subsections (a)(1) through (a)(4) of this Section.

g) Testing:

1) Upon a request by the Agency, the owner or operator of an MSW landfill shall at his own expense demonstrate compliance with the applicable requirements of this Subpart using the appropriate test method.

2) An owner or operator planning to conduct a test to demonstrate compliance with this Subpart shall notify the Agency of that intent not less than 30 days before the planned initiation of the tests so that the Agency may observe the test.

Section 220.270 Monitoring of Operations

a) Active gas collection systems. Each owner or operator of an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

1) Measure the gauge pressure in the gas collection header on a monthly basis, as provided in Section 220.240(a)(3) of this Subpart; and

2) Monitor the temperature and nitrogen or oxygen concentration in the landfill gas on a monthly basis, as provided in Section 220.240(a)(5) of this Subpart.

b) Enclosed combustors. Each owner or operator of an enclosed combustor shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:

1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of plus or minus 1 percent of the temperature being measured, expressed in degrees Celsius, or plus or minus 0.5°C, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity greater than 44 MW.

2) A device that records flow to or bypass of the control device. The owner or operator shall either:

A) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device every 15 minutes; or

B) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

c) Open flare. Each owner or operator of an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

2) A device that records flow to or bypass of the flare. The owner or operator shall either:

A) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

B) Secure the bypass line valve in the closed position with a car-seal or lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

d) Each owner or operator seeking to install a collection or control system that does not meet the specifications in Section 220.220(b) or (c) of this Subpart, shall provide information satisfactory to the Agency as provided in Sections 220.220(d) and 220.230(d) of this Subpart, describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures.

e) Each owner or operator shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in Section 220.240(c) and (d) of this Subpart. Any inactive landfill that has no monitored exceedences of the operational standard in three consecutive quarterly monitoring periods must resume annual monitoring. Any methane reading of 500 ppm or more above the background detected during the annual monitoring returns the monitoring frequency for that landfill to quarterly.

Section 220.280 Reporting Requirements

a) Each owner and operator shall submit a design capacity report to the Agency.

1) The initial design capacity report shall be submitted no later October 29, 1998.

2) The initial design capacity report shall contain the following information:

A) A map or plot of the landfill providing the size and location of the landfill and identifying all areas where solid waste may be landfilled according to the provisions of the State or RCRA construction or operating permit.

B) The maximum design capacity of the landfill. If the maximum design capacity is specified in a State construction or RCRA permit, a copy of the permit specifying the maximum design capacity of the landfill shall be provided. If the maximum design capacity of the landfill is not specified in a permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with the relevant parameters (e.g., depth of solid waste, solid waste acceptance rate, and compaction practices, as applicable), as part of the report. The Agency may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

3) An amended design capacity report shall be submitted to the Agency providing notification of an increase in the design capacity of the landfill within 90 days after an increase in the maximum design capacity of the

landfill to or above 2.5 million Mg and 2.5 million m^3. This increase in design capacity may result from an increase in the permitted volume or an increase in the density of the landfill as documented in the annual recalculation required in Section 220.290 (f) of this Subpart.

b) Each owner and operator with a total design capacity equal to or greater than 2.5 million Mg and 2.5 million m^3 shall submit an NMOC emission rate report to the Agency initially and by June 1 annually thereafter, except as provided for in subsections (b)(1) and (b)(4) of this Section. The Agency may request such additional information as may be necessary to verify the reported NMOC emission rate. The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures in Section 220.260(a) of this Subpart, as applicable. The annual NMOC emission rate report required by this subsection must be submitted with the annual emissions report required pursuant to 35 Ill. Adm. Code 201.302(a).

1) The initial NMOC emission rate report may be combined with the initial design capacity report required in subsection (a) of this Section. The first NMOC emission report shall be filed with the Agency by October 29, 1998. Subsequent NMOC emission reports shall be filed with the Agency by June 1 of the subsequent year, except as provided for in subsection (b)(2) of this Section.

2) Using Tier 1, if the estimated NMOC emission rate as reported in the annual report to the Agency is less than 50 Mg/yr in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Agency. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Agency. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

3) The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

4) All owners and operators of MSW landfills with a total design capacity of 2.5 million Mg and 2.5 million m^3 are required to submit an annual emissions report pursuant to 35 Ill. Adm. Code 201.302(a). MSW

landfills that have installed a gas collection and control system that meets the requirements of this Subpart are not required to submit an annual NMOC emission rate report but are required to submit an annual emissions report pursuant to 35 Ill. Adm. Code 201.302(a). Further, owners or operators filing a 5-year estimate of NMOC emissions pursuant to subsection (b)(2) of this Section may use a 5-year estimate for NMOC, so long as they file an annual emission report and meet the requirements of subsection (b)(2) of this Section.

c) Each owner or operator subject to the provisions of Section 220.220(a) of this Subpart shall submit an application for a construction permit containing the information listed in subsection (c)(3) of this Section to the Agency within 1 year after the first report, required under subsection (b) of this Section, in which the emission rate exceeds 50 Mg/yr, except as follows:

1) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in Section 220.260(a)(3) of this Subpart and the resulting rate is less than 50 Mg/yr, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 Mg/yr or the landfill is inactive. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 1 year after the first calculated exceedence of 50 Mg/yr.

2) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant k, as provided in Tier 3 in Section 220.260(a)(4) of this Subpart, and the resulting emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed or the landfill is inactive. The resulting site-specific methane generation rate constant k shall be used in the emission rate calculation until such time as the emission rate calculation results in an exceedence. The revised NMOC emission rate report based on the provisions of Section 220.260(a)(4) of this Subpart and the resulting site-specific methane generation rate constant k shall be submitted to the Agency within 1 year after the first calculated emission rate exceeding 50 Mg/yr.

3) In addition to the information required by 35 Ill. Adm. Code 201.152, the following shall be included in the construction permit application for the collection system required pursuant to Section 220.280(c) of this Subpart: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandibility, leachate and condensate management, accessibility, compatibility with filling operations, integration with closed landfill end use, air intrusion control,

corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

d) Each owner or operator of a controlled landfill shall submit the information required by this subsection (d) to the Agency 30 days prior to removal or cessation of operation of the control equipment. The Agency may request such additional information as may be necessary to verify that all of the conditions for removal of equipment in accordance with Section 220.250(h) of this Subpart have been met.

1) Certification that the operation of the collection and control system is no longer required pursuant to 35 Ill. Adm. Code.Subtitle G;

2) Documentation demonstrating that the 15-year minimum control period has expired; and

3) Dated copies of the 3 successive NMOC emission rate reports, as provided for in Section 220.250(h) of this Subpart, demonstrating that the landfill is no longer producing 50 Mg/yr or greater of NMOC, pursuant to Section 220.260(b) of this Section.

e) Each owner or operator of a landfill shall submit to the Agency annual reports of the recorded information in subsections (e)(1) through (e)(6) of this Section. The initial annual report shall be submitted within 180 days after installation and start-up of the collection and control system, and may be included with the report of the initial performance test required pursuant to Section 220.210(d)(2) of this Subpart. For enclosed combustion devices and flares, reportable exceedences are defined under Section 220.290(c) of this Subpart.

1) Value and length of time for exceedence of applicable parameters monitored under Section 220.270(a), (b), (c), and (d) of this Subpart.

2) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under Section 220.270 of this Subpart.

3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

4) All periods when the collection system was not operating in excess of 5 days.

5) The location of each exceedence of the 500 ppm methane concentration, as provided in Section 220.250(d) of this Subpart, and the concentration

recorded at each location for which an exceedence was recorded in the previous month.

6) The date of installation and the location of each well or collection system expansion added pursuant to subsections (a)(3), (b), and (c)(4) of Section 220.240 of this Subpart.

f) Each owner or operator shall include the following information with the initial performance test report and any subsequent performance tests required pursuant to Section 220.210(d)(2) of this Subpart.

1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;

2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;

3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;

4) The sum of gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area;

5) Provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and

6) The provisions for the control of off-site migration of gas.

Section 220.290 Recordkeeping Requirements

Each owner or operator of an MSW landfill shall keep for at least 5 years, unless another time period is specified in this Section, up-to-date, readily accessible, on-site records of the following:

a) For the life of the landfill, the design capacity report in which the landfill became equal to or greater than 2.5 million Mg and 2.5 million m^3, the current amount of solid waste in-place, and the year-by-year waste acceptance rate.

Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

b) For the life of the control equipment, the data listed in subsections (b)(1) through (b)(4) of this Section as measured during the initial performance test or compliance determination. Records of the control device vendor specifications shall be maintained until removal.

1) Active collection systems:

A) The maximum expected gas generation flow rate as calculated in Section 220.240(a) of this Subpart. The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Agency.

B) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in Section 220.220(b)(1)(A) of this Subpart.

2) Enclosed combustion device other than a boiler or process heater with a design heat input capacity greater 44 MW:

A) The combustion temperature measured at least every 15 minutes and averaged over the same time period as the performance test.

B) The percent reduction of NMOC determined as specified in Section 220.230(b) of this Subpart achieved by the control device.

3) Boilers or process heaters of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period as the performance testing.

4) Open flare: the flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 CFR 60.18, incorporated by reference in Section 220.130 of this Part; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the flare pilot flame or the flare flame is absent.

c) Continuous records of the equipment operating parameters specified to be monitored in Section 220.270 of this Subpart as well as up-to-date, readily accessible records for periods of operation during which the parameter

boundaries established during the most recent performance test are exceeded.

1) The following constitute exceedences that shall be recorded and reported under Section 220.280(e) of this Subpart:

A) For enclosed combustors, except for boilers and process heaters with design heat input of 44 MW (150 mmbtu/hr) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28°C (82°F) below the average combustion temperature during the most recent performance test at which compliance with Section 220.230(b) of this Subpart was determined.

B) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone, as required pursuant to subsection (b)(2)(A) of this Section.

2) Continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified pursuant to Section 220.270 of this Subpart.

3) For boilers or process heaters with a design heat input capacity of 44 MW or greater, records of all periods of operation of boiler or process heater. (Examples of such records include records of steam use, fuel use, or monitoring data collected pursuant to State, local, or federal regulatory requirements.)

4) For open flares, records of the flame or flare pilot flame monitoring specified under Section 220.270(c) of this Subpart, and all periods of operation in which the flare pilot flame or the flare flame is absent.

d) For the life of the collection system, a plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector, including:

1) The location of all newly installed collectors as specified under Section 220.240(b) of this Part.

2) The nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection, as provided in Section 220.220(b)(1)(D)(i) of this Subpart, as well as any nonproductive areas excluded from collection, as provided in Section 220.220(b)(1)(D)(ii) of this Subpart.

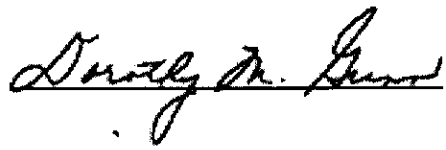
e) All collection and control system exceedences of the operational standards in Section 220.250 of this Subpart, the reading the subsequent month whether or not the second reading is an exceedence, and the location of each exceedence.

f) Owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million Mg or 2.5 million m^3, as provided in the definition of "design capacity", shall keep records of the annual recalculation of site-specific density, design capacity, and the supporting documentation.

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 17th day of June 1998 by a vote of 5-1.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board