ILLINOIS POLLUTION CONTROL BOARD
July 26, 1983

IN THE MATTER OF:	)	
	)	
AMENDMENTS TO CHAPTER 2: AIR POLLUTION;	)	R82-12
PART III: AIR QUALITY STANDARDS; RULE 313 (lead)	)	

Adopted Rule. Final Order.

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

On June 10, 1982 the Board adopted an Opinion and Order proposing new Rule 313 of Chapter 2: Air pollution, which would establish an ambient air quality standard for lead and its compounds as well as an acceptable measurement method for determining conformance with that standard. On December 27, 1982 the Illinois Environmental Protection Agency (Agency) filed a motion to amend the proposed rule, and on February 24, 1983 the Board adopted a Proposed Rule/First Notice Order which modified the proposed rule in conformance with an Agency's motion to allow any alternative measurement methods to be used so long as that method had been approved by the United States Environmental Protection Agency (USEPA) pursuant to procedures referenced in 43 Fed. Reg. 46258 as amended. No public comments were received during the first notice period. On May 19, 1983 the Board adopted a Proposed Rule/Second Notice Order proposing the rule in the same form as it appeared in the First Notice Order except that the citation to the Federal Register was changed to the Code of Federal Regulation's citation of 40 CFR 50, Appendix G (1982) for ease of reference. On July 12, 1983 the Joint Committee on Adminstrative Rules certified that it has no objection to the proposed rule.

The 1970 Clean Air Act Amendments required the Administrator of the USEPA to promulgate National Ambient Air Quality Standards (NAAQS) for five criteria pollutants (TSP, SO_2, NO_x, O_3 and CO) under Section 108 of that Act. These standards were promulgated under Section 109 of that Act in 1971 and were set at levels necessary to protect the public health and welfare.

In 1976 the court in NRDC, Inc., et al. v. Train, 411 F. Supp. 864 (S.D.N.Y., 1976) aff'd 545 F. 2d 320 (2d Cir. 1976) ordered USEPA to list lead as a criteria pollutant and to develop an ambient air quality standard. USEPA so listed lead on March 31, 1976, proposed an ambient air quality standard on December 14, 1977 (42 Fed. Reg. 63092) and published the final rule on October 5, 1978 (43 Fed. Reg. 46258). The Federal reference method for collecting and measuring lead and its compounds in the ambient air was also published in appendix G of that

promulgation, as were final rules for the development of state implementation plans under 40 CFR 51. Appendix G was amended on June 29, 1979 (44 Fed. Reg. 37915).

The Board has existing rules in conformity with federal regulations which set standards and measurement methods for each of the original five criteria pollutants (Rules 307-312 of Chapter 2: Air Pollution). However, despite the passage of over three years since the federal lead regulations have been in effect, no one proposed similar regulations before the Board concerning lead. Therefore, the Board has proposed this regulation on its own motion.

Lead is a stable compound, ubiquitously distributed, which persists and accumulates both in the environment and the human body. Lead is emitted into the atmosphere by vehicles burning leaded fuel and by certain stationary sources. It enters the body through ingestion and inhalation with consequent absorbtion into the bloodstream and distribution to all body tissues.

Three body systems appear to be most sensitive to the effects of lead - the hematopoietic system, the nervous system, and the renal system. It has also been shown to affect normal functioning of the reproductive, endocrine, hepatic, cardiovascular, immunologic, and gastrointestinal systems.

Clearly, high air lead concentrations can cause significant health risks. In developing its proposed standards USEPA determined that the maximum safe blood level (geometric mean) for young children was 15 ug Pb/dl (deciliter). This was based on blood lead level thresholds for various biologic effects ranging from the risk of permanent, severe neurological damage or death at levels over 80 ug Pb/dl in children to enzyme system inhibition at levels as low as 10 ug Pb/dl. Since children appear to be at greatest risk, that group was used to establish safe levels.

12 ug Pb/dl of the 15 ug Pb/dl safe level was found to be attributable to nonair sources. The 3 ug Pb/dl difference was, therefore, estimated to be the allowable safe contribution to mean population blood level from lead in the air. Since epidemiological data indicates a general relationship of 1:2 between air lead (ug Pb/m^3) and blood lead (ug Pb/dl), USEPA determined that the air standard should be set at 1.5 ug Pb/m^3.

The Board proposes to adopt the federal standards of 1.5 ug Pb/m^3 as well as the federal reference methods. In so doing the Board will have treated lead consistently with the other criteria pollutants: all will be subject to enforceable State standards and may be enforced through the Board and the State courts.

While the Agency has determined that the only non-attainment area in the State for lead is the Granite City area (see Ill. SIP, Volume 9: Lead, pp. 2-3), the potential for violation of the proposed standard is sufficient to justify a State standard to protect the health and welfare of the People of the State. Further, such a rulemaking may be required for approval of the Illinois State Implementation Plan.

Although the Agency has apparently taken the position that the reduction of lead in mobile sources under the Federal Motor Vehicle Control Program and the federal lead-in-gasoline phase-down regulations along with particulate standards will allow the State to demonstrate attainment of NAAQS, that position may not be an accurate one, especially in light of possible amendments to the Clean Air Act. Promulgation and enforcement of a State standard should aid in attainment of the NAAQS. In any case, despite taking that position, the Agency has not opposed adoption of this rule and has, in fact, submitted information in support of its adoption.

This Opinion and Order is the final Opinion and Order in this matter and replaces all previous Opinions and Orders.

ORDER

The Board hereby adopts the following new rule.

Rule 313: Lead.

(a) Standard. The ambient air quality standards for lead and its compounds are 1.5 micrograms per cubic meter, maximum arithmetic mean averaged over a calendar quarter.

(b) Measurement Method. For determining conformance with the ambient air quality standards for lead and its compounds, lead and its compounds shall be measured by the atomic absorbtion spectrometry or equivalent method as described in 40 CFR 50, Appendix G(1982).

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board hereby certify that the above Order was adopted on the 26th day of July, 1983 by a vote of 5-0.

Christan L. Moffett

Christan L. Moffett, Clerk
Illinois Pollution Control Board