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The Peril of Air Pollution in North Dakota

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NOTES

THE PERIL OF AIR POLLUTION IN NORTH DAKOTA*

INTRODUCTION

On July 1, 1969, North Dakota Senate Bill Number 130, which dealt with air pollution control, became law.[1] Prior to this North Dakota had been one of the few states without specific legislation on this subject.[2] This paper will analyze the Legislature's purposes in passage of the Air Pollution Control law, the need for such a law with emphasis on the forms of industrial pollution in the state, and an analysis of the law with recommendations for change.

The Air Pollution Control law of North Dakota was sponsored by State Senators Trenbeath, Van Horn, and Decker.[3] One of the purposes of the legislation, as expressed by one sponsor, was the avoidance of federal enforcement: "Those states without pollution statutes or enforcement means, would have the void filled by the federal government."[4] This would not appear to be the sole purpose, however, as Senator Trenbeath additionally stated that, ". . . we did have a few situations within the state that seemed to warrant and require the legislation that was enacted".[5] The purpose of the Act, as enumerated by the Senate Bill, appears to place greater emphasis on the aspect of protection of health and welfare of the state's populace:

> To maintain or obtain reasonable levels of air quality consistent with the protection of health, and the prevention of injury to plants, animal life and property, to promote the economic and social development of the state; to provide for the comfortable enjoyment of the natural attractions of the state to the greatest extent practical; to establish a statewide program of air pollution prevention, abatement

* The author wishes to acknowledge his appreciation to Dr. Glen Sherwood, Vice-chairman of the Advisory Council and the North Dakota State Department of Health for their assistance in the preparation of this note.

1. N.D. CENT. CODE ch. 23-25 (Supp. 1969).
2. S. Degler, STATE-AIR POLLUTION LAWS 3 (1969).
3. *See* Ch. 260, [1969] N.D. Sess. Laws 497, for the purpose of S.B. 130.
4. Letter from Senator Grant Trenbeath to author, Ort. 1, 1969 [hereinafter rited as Senator Trenbeath letter] (This letter and all subsequent noted letters filed in University of North Dakota Law Library).
5. *Id.*

> and control; and to coordinate the activities of local and regional air pollution control programs within the state; and creating an air pollution control advisory council.[6]

As will be enumerated further in the conclusion, it is this author's opinion that the basic reason that the Air Pollution Control law was passed in this state was to avoid federal legislation or at least this is likely the sole consequence of this legislation. To understand how control by the federal government might have been instituted a brief history of federal legislation is appropriate.

THE DEVELOPMENT OF THE AIR POLLUTION CONTROL LAW VIA FEDERAL LAWS

The initial law, by which the federal program against air pollution began, was enacted in 1955 and is known as the Air Pollution Control Act of 1955.[7] Basically this law authorized the Secretary of Health, Education, and Welfare to establish a research program on air pollution. Under this program assistance was to be rendered to state and local governments to control air pollution. In addition, the results of surveys, research, and other data were to be made available to state and local agencies.[8] An amendment to the 1955 Act was passed in 1960 which directed that:

> [T]he Surgeon General . . . shall conduct a thorough study . . . [to determine] the amounts and kinds of such substances which, from the standpoint of human health, it is safe for motor vehicles to discharge into the atmosphere under various conditions which such vehicles may operate.[9]

The next federal legislation enacted was in 1962 and was somewhat insignificant in that its sole purpose was to authorize appropri-

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6. *See* Ch. 260, [1969] N.D. Sess. Laws 497, for the purpose of S.B. 130.

7. Act of July 14, 1955, Pub. L. No. 84-159, 69 Stat. 322 [hereinafter cited as 1955 Act].

8. *Id.* Section 2 (b) authorizes the Surgeon General to

> (1) encourage cooperative activities by State and local governments for the prevention and abatement of air pollution;
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> (2) collect and disseminate information relating to air pollution and the prevention and abatement thereof;
>
> (3) conduct in the Public Health Service, and support and aid the conduct by State and local government air pollution control agencies, and other public and private agencies and institutions of technical research to devise methods of preventing and abating air pollution; and
>
> (4) make available to State and local government air pollution control agencies, other public and private agencies and institutions, and industries, the results of surveys, studies, investigations, research, and experiments relating to air pollution and the prevention and abatement thereof.

9. Act of June 8, 1960, Pub. L. No. 86-493, 74 Stat. 162 [hereinafter cited as 1960 Act].

ations, relating to air pollution, for an additional two year period beyond that authorized by the 1960 Act.[10]

The 1963 Clean Air Act was very significant legislation and was an attempt to improve and strengthen programs for the control of air pollution.[11] Congress found that there was an increasing amount of air pollution and that federal financial assistance and leadership was needed for the development of state and local programs.[12] The purposes of the 1963 Act were as follows:

> (1) to protect the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population;
>
> (2) to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution;
>
> (3) to provide technical and financial assistance to State and local governments in connection with the development and execution of their air pollution prevention and control programs; and
>
> (4) to encourage and assist the development and operation of regional air pollution control programs.[13]

The 1963 Act established grants for programs to be initiated by air pollution control agencies[14] in the amount of 95 million dollars over a three year period from date of enactment to June, 1967.[15] The 1963 Act differed from earlier legislation in that it inaugurated a shift of emphasis from the "technical challenge" of 1955 to the "social challenge" of 1963, which was more concerned with the development of agencies to confront the air pollution problem.[16]

In 1965, Congress enacted an amendment to The Clean Air Act of 1963.[17] The 1965 Act was somewhat a follow-up of the 1960 Act in that it authorized the Secretary of Health, Education, and Welfare to establish standards for emission from new motor vehicles.[18]

In 1966, an amendment to the 1963 Act authorized grants to

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10. Act of Oct. 9, 1962, Pub. L. No. 87-761, 76 Stat. 760 [hereinafter cited as 1962 Act]; *see generally Hearings on Motor Vehicles, Air Pollution, and Health, A Report of the Surgeon General To The Congress*, 87th Cong. 2d Sess. (1962) for a report of the findings of the Surgeon General as authorized under the 1962 Act.
11. Act of Dec. 17, 1963, Pub. L. No. 88-206, 77 Stat. 392 [hereinafter cited as 1963 Act].
12. *Id. at* § 1 (a).
13. *Id.* at § 1 (b).
14. *Id.* at § 4 (a).
15. *Id.* at § 13 (a), (b).
16. *The Federal Air Pollution Program*, 1968 WASH. U.L.Q. 283, 285. *See generally* F. CLEAVELAND, CONGRESS AND URBAN PROBLEMS (1969) 224-78 for a legislative history of Congress and clean air with emphasis on the 1963 Act.
17. Act of Oct. 20, 1965, Pub. L. No. 89-272, 79 Stat. 992 [hereinafter cited as the 1965 Act].
18. *Id.* at § 202 (a). [The Secretary of Health, Education and Welfare is hereinafter referred to as the Secretary].

agencies for air pollution programs in addition to those grants specified under the 1963 Act.[19] A total of 186 million dollars was appropriated to carry out this purpose to end in June, 1969.[20]

Just as the 1963 Act shifted the emphasis to a "social challenge" from the "technical challenge" of 1955, the 1967 Air Quality Act[21] shifted the emphasis to "pollution abatement".[22] There appear to be three main purposes in the enactment of the 1967 Act. First the 1967 Act provided a procedure for the issuance of air quality criteria by the Secretary.[23] The purpose of air quality criteria is to provide evidence of the effects of air pollution.[24] In addition to the establishment of air quality criteria, certain areas and air-quality-control regions were to be specified.[25] One such region designated by the 1967 Act was the Fargo-Moorhead area in the state of North Dakota.[26] The final and probably most important function of the 1967 Act is contained in Section 108. Under this section once a state has received air quality criteria and recommended control techniques the state must file a letter of intent, within a ninety day period, that it will adopt ambient air quality standards within one hundred-eighty days thereafter.[27] In addition the state must adopt a plan for enforcement of the air quality standards which are adopted.[28]

Earlier in this paper it was noted that Senator Trenbeath stated that the Air Pollution Control law was enacted to avoid federal enforcement. Federal enforcement is available under the 1967 Act if the procedure to establish air quality standards is not followed by the state. The Secretary shall promulgate these standards.[29] However, it should be noted that even if the state does

19. Act of Oct. 15, 1966, Pub. L. No. 89-675, 80 Stat. 954 [hereinafter cited as 1966 Act].
20. *Id.* at § 306.
21. Act of Nov. 21, 1967, Pub. L. No. 90-148, 81 Stat. 485 [hereinafter cited as 1967 Act].
22. *The Federal Air Pollution Program,* 1968 WASH. U.L.Q. 283, 296.
23. 1967 Act § 107 (b) (1).
24. Address by Dr. Ralph Larsen, Assoc. Comm. for Criteria and Standards Development, to Executive Symposium On Air Pollution Control, Oct. 22-23, 1968 [hereinafter cited as Air Symposium]. Dr. Larsen stated:

> If we are to confront this insidious face of air pollution as well as the more familiar ones, we must study the scientific evidence of the effects of air pollution. . . . Air quality criteria tell us what science has thus far been able to reveal of the insidious as well as the obvious effects of air pollution on man and his environment. They thereby provide the most realistic basis that we have for deriving the limits we must set on levels of pollution, if we are to protect the public health and welfare.

25. 1967 Act § 107 (a)(2).
26. U.S. DEPT. OF HEALTH, EDUCATION, & WELFARE, NAT'L AIR POLLUTION CONTROL AD., Community Affairs Bulletin, April 1, 1969. Fargo-Moorhead is designated as the forty-ninth air quality control region. For North Dakota State Department of Health comments in respect to this designation *see* Grand Forks Herald, Sept. 19, 1967, at 7, col. 2. Mr. Gene Christianson of the department said that the Fargo-Moorhead area was designated as a pollution control area so each state would be represented and not because this area had an air pollution problem.
27. 1967 Act § 108 (c)(1).
28. *Id.*
29. *Id.* at § 108 (c)(2).

follow the procedure enumerated, the Attorney General, on behalf of the United States, may institute an action against an alleged pollutor if the state has not acted to abate pollution.[30] It is through the acts described above that the states have been able to, and in essence been forced to, establish their own air pollution control and abatement programs. It would appear obvious that the 1967 Act has especially laid the foundation for the present and newly established Air Pollution Control law in North Dakota.

THE GENUINE NECESSITY FOR AN AIR POLLUTION CONTROL LAW IN NORTH DAKOTA

Although there is a lack of agreement on the degree of air pollution in North Dakota there appears to be no doubt that a potentially great problem is foreseeable. At present the State Department of Health is of the opinion that "[g]enerally speaking, the air found across the State is of good quality."[31] Mr. Gene A. Christianson of the Department stated what seems to be the reason for this quality of air, if in fact it is a reality. "The relatively small population of North Dakota, coupled with the current minimal industrial activity yield a state-wide air quality which can be described as generally clean."[32] The State itself advertises that ". . . [we have] just crisp, clear, clean breathable air all year 'round."[33]

Other reports, however, indicate that North Dakota does have pollution and in such amounts that it produces physical discomfort, loss of life to cattle, deer, rabbits, and other animals, and damage to buildings and machinery.[34] Mr. H. R. Morgan, field representative for the National Wildlife Federation, considered the health hazards involved from the periodic burning of crude oil in the oil fields of North Dakota: "After a few hours in this field, where I witnessed accumulations of oil being burned from waste collection pits with the resulting black clouds of smoke, I felt physically ill and mentally depressed."[35] Threats to human life and property have been claimed with pleas for the greater policing of the operation of the petroleum industry in North Dakota.[36]

Specific examples of air pollution in North Dakota include the deaths of hundreds of songbirds in Grand Forks, due to the aerial

30. *Id.* at § 108 (k). *See generally The Federal Air Pollution Program,* 1968 WASH. U.L.Q. 283, 297-304, for a discussion of the Air Quality Control Program.
31. Letter from W. Van Heuvelen, Chief Environmental Health and Engineering Services, Department of Health, to author, Oct. 10, 1969.
32. Air Symposium, Remarks by Mr. Gene A. Christianson.
33. N.D. BUS. & INDUS. DEV. DEPT., INDUSTRIAL DEVELOPMENT AND MANUFACTURERS RECORD 1 (1969).
34. Flickertales, May 1968, at 1, col. 4.
35. Morgan, *Conservationists And Responsibilities For Their Environments,* CONSERVATION NEWS, Jan. 1, 1969 at 4.
36. *Id.* at 5.

spraying for mosquitoes.[37] The incident was compared to the spraying of the Dutch Elm disease in the Eastern United States.[38] Dr. Robert W. Seabloom, Associate Professor of Biology at the University of North Dakota, noted the problems of insect control programs: "I think personally that governments and local governments should be made aware that these (insect) control programs should not be initiated unless they know specifically what effect the program will have on our environment including man and all animals around man."[39] A similar spraying incident took place at Fargo with considerable property damage involved.[40]

Although many of the incidents described are isolated the need for an air pollution control law, and subsequent programs with regulation, should be evident. North Dakota is in an enviable situation in comparison to some states which have extensive air pollution problems. However, as stated by State Senator Grant Trenbeath, "Altho we in North Dakota are relatively free of the tremendous corrective task facing the nation, we do and will have isolated air pollution problems of our own."[41] This author would go one step further and state that North Dakota unknowingly does, or has the potential to be, a state with a tremendous pollution problem.

Air pollution in North Dakota could, and may be, of much greater consequence than is now imagined due to a number of factors. One such factor is the amount of herbicides applied in North Dakota. Dr. Glen Sherwood, Vice-Chairman of the Advisory Council created by the new law, stated that he was very concerned about the amount of pesticides and herbicides in the air of this state for two reasons. The first is that North Dakota applies more herbicides than any other state. The second reason is that there is only limited knowledge concerning these chemicals as air contaminants.[42] Another factor which may lead to air pollution in the state is industry. The growth of industry and the tremendous potential for industrialization of North Dakota presents a potentially major problem unless satisfactory laws are established. North Dakota has been termed as the

> 'Texas of the North'. . . . Some day the *smokestacks* of a hundred plants will march across the horizon of North

37. Grand Forks Herald, May 26, 1969, at 1, col. 3.
38. *Id.; see generally* R. CARSON, SILENT SPRING 105 (1962). *See also* page 126 for an account of the spraying of pesticides and their effects.
39. *Supra* note 37.
40. The Forum (Fargo), Aug. 1, 1969, at 1, col. 2.
41. Senator Trenbeath letter.
42. Interview with Dr. Glen Sherwood, Vice-Chairman Advisory Council, in Jamestown, North Dakota, Sept. 27, 1969. *See also* letter from Mr. Larry Mitich, Associate Professor, Cooperative Extension Service, North Dakota State University, to author, Dec. 15, 1969. North Dakota ranked first in 1968 in amount of herbicides applied with treatment to 10,776,618 acres of cropland.

> Dakota as the *oil rigs* have begun to do, and as the elevators have done for almost a century.[43] (emphasis added)

Mr. Bruce Bartch, director of the North Dakota Business and Industrial Development Program, declared that ". . . North Dakota leads the nation [in increased industrial development] with a 50 per cent increase in the last three years."[44]

The potentially enormous growth of the utility or power industries in North Dakota is another factor to be considered. There is at present speculation into the feasibility of building load centers in the lignite fields of North Dakota which would produce two million kilowatts.[45] Senator Quentin N. Burdick (D.N.D.) said that the cost study to link North Dakota power with Minnesota metropolitan needs could create the greatest industrial development in the history of North Dakota. Senator Burdick stated: "When the first giant lignite generating plant was dedicated in 1964, I said there would be 20 more like it. Today three of those plants are now realities. A fourth is well on its way."[46]

There appears to be an assumption that increased industrial activity in North Dakota will provide increased wealth and a higher standard of living. However, this is not necessarily the case[47] and the citizens and leaders of North Dakota should be aware of this. It should be noted that the prediction of smokestacks of a hundred plants marching across the plains is not necessarily an indication of progress as indicated by the following:

> Here lies the explanation of the superficially paradoxical fact that a generation ago belching smokestacks were welcomed, as indicators of full employment, whereas today they are more likely to be taken as symbols of technological obsolescence and management irresponsibility.[48]

As can be seen air pollution control laws must be established and enforcement must be tested now due to the foreseeable problems which this state may encounter.

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43. N.D. BUS. & INDUS. DEV. DEPT., INDUSTRIAL LOCATION FACTS 36 (1967).
44. Grand Forks Herald, Oct. 4, 1969, at 1, col. 2.
45. Grand Forks Herald, Oct. 30, 1969, at 1, col. 2.
46. *Id.* at 6, col. 2.
47. Beck, *The* 1965 *Maine Municipal Industrial and Recreational Obligation Act,* 18 ME. L.R. 25, 44:

> "But increased prosperity and a better community do not necessarily come with every new industry. It is entirely possible for industrial development to increase traffic problems, develop crowded and unsanitary living conditions because of insufficient housing, creat labor problems, *dirt, smoke, smog* . . . ." (emphasis added)

See also TIME, Oct. 31, 1969, at 72, for an enlightening article concerning the pollution problems that may be a factor in considering an industrialized state or community.

48. Ayres, *Air Pollution In Cities,* 9 NAT. RES. J. 1, 10 (1969).

AN ANALYSIS OF THE POWER INDUSTRY IN NORTH DAKOTA

Due to the potential "industrial revolution" in this state special consideration will be given to industry as a pollutor. The utility industry in North Dakota will specifically be examined for three reasons: (1) to determine whether and to what extent the power industry is a pollutor; (2) to give a basic understanding of the balancing of economic interests; and (3) because basically many of the considerations and conclusions respecting the power industry can be adapted or related to industry in general, thus eliminating a separate discussion of it.

Although statistics vary, there seems to be no doubt that utility plants and companies are considered a major pollutor. One survey shows only "transportation" and "industry" as greater contributors to the pollution of the air.[49] In examining the Air Pollution Control law of North Dakota there do not seem to be any specific sections dealing with the utility industry. However, Section 23-25-07 (3) of the North Dakota Century Code, which concerns emission control requirements, considers the use of and composition of fuels which is an essential of the power industries:

> Nothing in this chapter shall be construed to authorize the department to specify the type, design, method of installation or type of construction of any equipment or manufacturing processes, or the kind of composition of fuels permitted to be sold, stored, or used.

The utility industry in North Dakota is basically a user of coal due to the vast reserves of lignite fuel in the state.[50] It is only natural that lignite coal would be used because of its availability and relatively cheap cost. A most important factor in the case of electric power is the cost or price per BTU. An objection to the use of coal, however, is that it normally contains a considerable amount of sulfur ($\sim$ 2.5 per cent). When burned this sulfur produces sulfur dioxide (SO_2) and sulfur trioxide (SO_3).[51] These facts lead to an inquiry of the status of the utility industry in North Dakota. Various data concerning the sulfur content of coal produced in North Dakota are available.[52] However, the lignite coal produced

49. Air Symposium, Remarks by Peter J. Marschall. In 1966 transportaion contributed 60 per cent of the pollution, industry 16 per cent, utility plants 14 per cent, space heating 6 per cent, and refuse disposal 4 per cent.

50. N.D. BUS. & INDUS. DEV. DEPT., INDUSTRIAL LOCATION FACTS 39 (1967).

51. Ayres, *Air Pollution In Cities*, 9 NAT. RES. J. 1, 4 (1969).

52. *Hearings, Air Pollution—1967, Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 90th Cong. 1st Sess. 1523, Table 3 (1967) [hereinafter cited as 1967 *Hearings*]. North Dakota coal was listed as having a sulfur content of 1.2%; U.S. DEPT. OF THE INTERIOR, BUREAU OF MINES, INFORMATION CIRCULAR 8376 TECHNOLOGY AND USE OF LIGNITE 113, 125 (1968) [hereinafter cited as N.D. Coal Sym-

in North Dakota generally contains less sulfur than is found in bituminous coal. There is, however, an additional factor to consider in a comparison of lignite to bituminous.

> Roughly, twice as much lignite is required to produce 1 kwhr of electricity, as compared with bituminous coal. Multiplying the sulfur content of a given lignite by a factor of 2, or a slightly greater factor, has the net result of translating that lignite into the medium or even high-sulfur classification by today's air-pollution standards.[53]

An analysis of lignite in North Dakota will indicate an average sulfur content of about 0.6 per cent with possible deviations from the average in the range of 0.2 to 1.8 per cent.[54] The moisture content of this coal will average about 38 per cent.[55] The moisture content of bituminous coal is approximately 5 per cent.[56] This factor, combined with others, means that it takes twice as much lignite to produce one kwhr as it does bituminous coal. Thus, an emission rate for average lignite (0.6 per cent) would be equivalent to a bituminous coal having a sulfur content of twice that, or 1.2 per cent.[57] Therefore lignite with a 1.0 per cent sulfur content would have an emission rate equivalent to a 2.0 per cent bituminous coal. Air pollution standards in some cities limit the sulfur content of bituminous coal to 2.0 per cent when used for power production.[58] Thus lignite coal with 1.0 per cent, or more, sulfur content would not be allowable in some cities.

The North Dakota electric-utility companies have in the recent years built several large lignite-fired power stations. More complexes will be built as the need increases.[59] As noted earlier there is speculation that as many as twenty power plants with a production capacity of two million kilowatts may be built in the lignite fields of North Dakota.[60] An increase such as this might have serious effects upon the air of this state. This potential necessitates an examination of means to reduce this pollution. There are three

posium]. The percentage of lignite mined in North Dakota in 1965 shows that 97.9% is under 1.0% sulphur and 87.0% is estimated to be 0.7% or less. Further inspection shows that 57.6% has less than 0.7%; Letter from W. Van Tassel, General Supt. Power Production of Montana-Dakota Utilities Co. to author Oct. 15, 1969 [hereinafter cited as Van Tassel letter]; "North Dakota lignite . . . is generally very low in sulphur. The range of sulphur content by weight will run from 0.5% to 1.10%."

53. N.D. Coal Symposium at 125.

54. Interview with Mr. James Elder, Bureau of Mines, in Grand Forks, North Dakota, Nov. 25, 1969.

55. *Id.*

56. *Id.*

57. *Id.*

58. N.D. Coal Symposium at 115, Table 12.

59. N.D. Coal Symposium at 114.

60. *Supra* note 45.

approaches to the problem of reducing the sulfur-oxide content of flue gases resulting from the combustion of fuel:

> (1) [U]se of lower content fuels, those either naturally occurring or produced by removing part of the sulfur during preparation. Under certain conditions selective mining can be effective in producing a low-sulfur product;
>
> (2) the use of dolomite or other additives during combustion; and
>
> (3) treatment of the stack effluent to remove the sulfur oxide.[61]

Considering the availability of lignite in North Dakota and the fact that the lowest sulfur content coal (located in Mercer County) is presently being mined[62] it would appear that solution number one would not be applicable except for the continuance of the mining of the lowest sulfur content coal.

Some fuels, such as lignite, contain constituents of dolomitic lime. Thus solution number two is being employed simply through the use of lignite coal. The sulfur that is discharged from the stacks is in the form of particulate matter.[63] To alleviate the particulate matter at least one power plant, Montana-Dakota Utilities Co., has high efficiency mechanical separators which are efficient in capturing the larger sizes of particulate matter but tend to pass smaller size particulate matter.[64] (It should be noted that the finer particulates are the ones most damaging to health.)[65] An alternative to this process is the spray scrubber system which eliminates the highly soluble oxident sulfur gases as well as the particulate matter.

The third solution is the treatment of the stack effluent. This approach seems to have had questionable success, even though there has been a considerable amount of research on the subject. This research involved the use of two basic approaches—wet and dry removal.[66]

At present research is also being conducted to adapt the highly efficient (97 to 99 percent) dust collectors or electrostatic precipitators to the highly resistive ash of lignite fuels.[67] Basin Electric Power Cooperative intends to install an electrostatic precipitator in

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61. N.D. Coal Symposium at 117.
62. N.D. Coal Symposium at 123, Figure 55.
63. Van Tassel letter.
64. *Id.*
65. Juris (Duquesne Law School Newspaper) Oct. 1969 at 12, col. 2 [hereinafter cited as Juris].
66. N.D. Coal Symposium at 118.
67. N.D. Coal Symposium at 116.

a generating plant to be built by 1974-75.[68] It might be pointed out that Basin Electric Power Cooperative had intentions of installing an electrostatic precipitator on their first unit built but were unable to justify the expenditure due to lack of State requirements.[69] This illustrates the necessity for the development of laws *now* before the present problem is given an opportunity to enlarge.

In examining Section 23-25-07 (3) of the North Dakota Century Code it appears that the only control the State Department of Health has over the utility industry is through the establishment of emission standards. This would, however, appear to be the most practical approach. Rather than allowing the department to specify the fuel to be used or the process to be followed, as is the case under some regulations,[70] the standards will be established and it will be up to the utility plants to meet them in the most satisfactory and economical way available to them.

This brief examination of the power industries in North Dakota brings to light three main facts. One is that the amount of pollution, as indicated by the sulfur content, is not necessarily what it seems at first blush. This shows the need for research as well as a technically trained staff for the Department of Health (or other agency or person designated the authority). There may exist a potentially greater problem than was or is thought to exist. Secondly, the question of whether it is wise to allow further expansion of the power industries without stricter regulation of air pollution also comes into focus. One community has in fact refused to allow a power plant to locate due to the pollution problem,[71] and there would appear to be a tide of opposition to electric power installations.[72] This raises the question of whether the State will accept industry on the industries' or the States' terms. The final factor would appear to focus on economics. The problem concerns whether it is economically feasible to increase power rates for the consumer in order to abate and control air pollution to a greater degree. The economics factor will be discussed in relation to all industries but with emphasis on the power industry.

THE ECONOMICS OF AIR POLLUTION

A professor of economics appears to have defined the air pollution versus cost of abatement problem quite precisely when he wrote, ". . . [T]he essence of any air pollution problem is to

68. Remarks by Mr. James Grahl, General Manager, Basin Electric Power Cooperative, as the Montana Coal Symposium, Billings, Montana, Nov. 7, 1969 [hereinafter cited as Mont. Coal Symposium].
70. Juris at 12, col. 3.
72. The New York Times, Oct. 29, 1969, at C-20, col. 3.
71. TIME, Nov. 14, 1969, at 55, col. 1.

be found in a conflict between *homo oeconomicus* and *homo sapiens*."[73] This implies a conflict between economic and biological man. There are a number of estimates concerning the cost of air pollution to the biological man varying from $180[74] to $500 per individual annually.[75] Pollution has been termed, ". . . a thief that takes dollars from you today and may threaten your very existence tomorrow."[76] The cost can thus be measured for two losses: actual dollar value expended for cleaning, medical, and maintenance and the immeasurable loss of human life and productivity. The normal approach to measuring the cost of pollution is to add the expenditures for items such as cleaning or medical bills plus loss of future income.[77] The elimination of air pollution will not, however, necessarily mean that the consumer will have an additional $180 to $500 buying power. Money expended for pollution control increases production costs, which are in turn directly related to retail prices. Thus the savings of medical and maintenance expenses will be consumed by the increased retail prices but with the elimination of some if not most of the pollution.[78] In essence the pollutors of air and the general public will have to exchange their rights until the pollutors total cost-savings and the publics' damage costs are maximized. The pollutors would thus pay the public for the right to release pollutants until the payments exceeded control costs.[79] One problem with this theory is the inability to establish a monetary value for loss of life, pain and suffering, and loss of production by man. In addition there is the question of whether we should even attempt to set a value on these losses.

The consumer and the pollutor must negotiate a price which will enable pollution to be reduced to a level where no harm is done to the public health and welfare.[80] The pollutor must consider the cost of control and abatement as a necessary expense and the average consumer must be willing to pay for an increase in the

73. Crocker, *Some Economics of Air Pollution Control,* 8 NAT. RES. J. 236, 238 (1968).
74. Juris at 8, col. 3.
75. Remarks by Minnesota Governor Harold LeVander to the 13th Annual Industrial Development Clinic Sept. 30, 1969, *as reported by* Grand Forks Herald, Oct. 1, 1969, at 16, col. 1.
76. *Id.*
77. Ayres, *Air Pollution In Cities,* 9 NAT. RES. J. 1, 12 (1969).
78. *See generally* Crocker, *Some Economics of Air Pollution Control,* 8 NAT. RES. J. 236, 241 (1968): "[I]f I must choose between the two otherwise equally satisfactory homesites, I will select that site which is not downwind from a smoky factory. However, if the choice is one of starving in an idyllic setting or having wholesome food and adequate shelter while living near the smoky factory in which I earn the money to buy this food and build this shelter, I will choose to live near the factory." *See also* Ayres, *Air Pollution In Cities,* 9 NAT. RES. J. 1, 9 (1969), for a theory concerning the choice that the consumer is now willing and demanding to make.
79. Crocker, *Some Economics Of Air Pollution Control,* 8 NAT. RES. J. 236, 245 (1968).
80. Cassell, *The Health Effects of Air Pollution and Their Implication for Control,* 33 L & CONTEMP. PROB. 197, 215 (1968), *as noted in Air Pollution: The Pennsylvania And Allegislative And Administrative Response Of The United States, Pennsylvania And Allegheny County,* 30 U. PITT. L.R. 633, 639 (1969).

cost of consumer goods. It appears that under our free enterprise system, industry as a whole and not individually must take the step to improve our environment, or be forced to, through the public laws and regulations.[81] It also appears that the general public has ". . . reached the point where consumers are willing to pay for increases."[82]

The foregoing theory assumes that all industry will be able to make changes in their manufacturing methods or install equipment which will eliminate the air pollution attributed to them. This is, however, not correct. For example, special programs may have to be established to retain the small business. Also, the foregoing does not consider the possibility that the reduction of air pollution might not increase costs to either the pollutor or the general public. One author theorized that a reduction of air pollution would cost the consuming public ten times *less* than at present due to substantial savings from medical and cleaning expenses.[83] Another survey indicated that air pollution due to the open burning of leaves could have been eliminated by having the city burn them in pollution-controlled incinerators at a *savings* of twenty-one dollars per ton of leaves.[84]

Furthermore, the recapture of the air contaminants may be of some economic value, which would defray the expense of the recapturing devices. For example, the utility industry in North Dakota has been shown to pollute the air through the escape of particulate matter or fly ash. Recent developments show that fly ash can be utilized to become an economically usable product:

> Utilization of fly ash will result in the reduction of the cost of coal burned by utilities and in turn ultimately means lower electrical costs to millions of consumers. The electric utility cannot only eliminate their disposal costs but receive income from the sale of fly ash. The combined total can mean as much as 1 to 2 cents per million British thermal units reduction in the cost of coal burned. . . .
>
> From our coal industry side this means that these credits rather than debits to the utility will be most helpful in keeping our coal industry competitive with the nuclear power industry.[85]

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81. Mont. Coal Symposium at 4:
> There is no use depending upon voluntary action. It is not reasonable to expect industry to do these things voluntarily, because they do cost money. In competitive enterprises, individual companies will not spend money to reduce damage to the environment when they know their competitors may not do so. If the law requires all to do so, however, then all must operate according to the same ground rules.

82. The New York Times, Oct. 29, 1969, at C-20, col. 3.
83. Juris at 9, col. 1.
84. T. Aylesworth, THIS VITAL AIR, THIS VITAL WATER 77-78 (1968).
85. 1967 *Hearings* at 2651.

This is not to say that the example outlined above would be feasible in North Dakota but lignite fly ash was specified as an acceptable mineral filler for asphalt paving and at least one utility plant intends to take advantage of this use.[86] This example does demonstrate the possibility of decreased air pollution and a reduction in costs to the consumer through research by the pollutors.

Another step that could be taken, which would create an incentive for pollutors to install air pollution control equipment, would be the imposition of a tax incentive both on the state and federal levels. Unfortunately the abatement programs are hindered due to lack of accelerated depreciation allowances for air pollution control equipment. A proposal has been made which would allow straight-line amortization of the equipment for a thirty-six month period.[87] Some states impose a general property tax on air pollution equipment which also discourages industry from establishing a voluntary air pollution program. There are twenty-three states which do exempt all air pollution control facilities from taxation or allow accelerated depreciation.[88] North Dakota is not one of these states but this might be a topic for consideration.

CONSIDERATION OF THE GREATEST PRESENT OR POTENTIAL POLLUTANT

Next, consideration will be given to what might be the greatest potential, and possibly present, air pollutant in the state. In considering herbicides, pesticides, and insecticides the basic question which arises is whether they come within the purview of the Air Pollution Control law. It appears that two qualifications must be met. First, can they be considered an air contaminant and, second, whether their presence in our environment is of sufficient quantity and duration to constitute air pollution. North Dakota is in need of further regulation of pesticides,[89] and the Air Pollution Control law could provide the solution. The importance of this question is, therefore, obvious.

Under Section 23-25-01 (1) of the North Dakota Century Code an air contaminant is defined as ". . . dust, fumes, mist, smoke, other particulate matter, vapor, gas, or any combination thereof, not including water vapor, water mist, or steam condensate." The question raised is whether herbicides *et al* fall within this defi-

86. Mont. Coal Symposium. Basic Electric Power Cooperative has and will continue to supply fly ash for road construction.
87. Zimmerman, *Political Boundaries and Air Pollution Control*, 46 J. OF URBAN L. 173, 174, 175 (1968).
88. U.S. DEPT. OF HEALTH, EDUCATION & WELFARE, A DIGEST OF STATE AIR POLLUTION LAWS, PUBLICATION No. 711, at ii, iii (1967 ed.).
89. *See generally* Beck, *Pesticides And The Law*, 37 N.D. QUART. 49, 63, 64 (1969).

nition. The most likely classification of herbicides *et al* would appear to be "particulate matter". Atmospheric particulate matter has been classified as smoke, dusts, mists, and fumes with each reflecting the source or nature of the particulate.[90] Further qualification of this definition states that, "*Suspended particulate matter* is generally considered to consist of any or all of the particles mentioned previously, (smoke, dusts, mists, and fumes) when they are of such a size and density that they tend to remain suspended in the atmosphere, i.e., settle slowly if at all."[91] This definition appears to require a certain quantity and duration before the particulate matter would be considered as air pollution. This definition is comparable to Section 23-25-01 (2) of the North Dakota Century Code which states that air pollution ". . . means the presence in the outdoor atmosphere of one or more air contaminants in such *quantities* and *duration* as to threaten . . . human health. . . ." (emphasis added) Thus, considering herbicides *et al* as "particulate matter" they will constitute air pollution if found 1) in such quantities and duration as to 2) be injurious to human health or welfare. The problem of making this determination through normal air sampling methods may be nearly impossible however. One author, in speaking of pesticides, said, "*In the air,* pesticide residues are more difficult to determine. The selection of truly representative air samples is unlikely even if the concentrations are large enough for chemical detection."[92] However, research and monitoring is currently being conducted by the Federal Government.[93]

One pesticide currently in the middle of a great controversy, DDT, gives some insight into the status of the duration factor. There has been a good deal of speculation concerning the presence of DDT in the Antarctic snowcap.

> If DDT is truly present in the Antarctic snowcap, the only way it could have arrived there is through the atmosphere. But neither the mechanisms of atmospheric distribution nor the stability of pesticides in the atmosphere has been studied well enough outside the laboratory to make any firm conclusions. . . .[94]

This would seem to indicate the possibility that pesticides could and do remain in the atmosphere for a substantial duration of time. Other signs of pesticide duration in the atmosphere appear in an article concerning the pollution of wilderness areas. "Thus wilder-

90. *Hearings, Air Pollution*—1968, *Before the Subcomm. on Air and Water Pollution of tha Senate Comm. on Public Works,* 90th Cong. 2d Sess., at 1043 (1968) [hereinafter cited as 1968 *Hearings*].
91. 1968 *Hearings* at 1043.
92. BLOOM AND DEGLER, PESTICIDES AND POLLUTION 7 (1969).
93. *Id.,* 9-38 *generally.*
94. Grand Forks Herald, Farm & Home Section, Oct. 30, 1969 at 5, col. 8.

ness areas many tens of miles from a city or farm can be affected by wind-borne pollution within a few hours. . . ."[95] In addition it has been found that "[a]ir pollutants may stay in the same latitudinal band blowing around the world . . . for up to a few months."[96]

In examining the question of "duration" and "quantity" in relation to herbicides *et al* the question of vagueness becomes apparent. A recent case questioned whether the word "smoke" in an air pollution statute was vague so as to deny the defendant due process of law.[97] These two definitions, "duration" and "quantity", would appear to raise this question as well. A specific problem which could arise in North Dakota, in relation to the application of these definitions to herbicides, concerns "snirt storms" in North Dakota.[98] The major application of herbicides in North Dakota is done by the agriculture industry. Therefore, particularly during the spraying season, the state is subject to air pollution. However, North Dakota is somewhat unique in that in addition to the herbicides *et al* being in the air during the initial spraying they may be found in the air attached to particles of dust and snow during a "snirt storm". Thus these particles may be inhaled by people year around. The question is whether this ground-air-ground movement of herbicides would constitute "duration" within the purview of the statute.

Assuming that herbicides *et al* can be classified as "particulate matter" and can be found in sufficient "quantity" and "duration" they must also be shown to be injurious to health. There is at present considerable speculation in regard to this especially from the standpoint of a balance of benefits question.[99] First indications of harmful effects were brought to national attention nearly a decade ago.[100] At present there still is not a full understanding of what harmful effects herbicides *et al* might have,[101] but there are indications of considerable harm.[102] As a result of these indications of harmful effects some states have ordered that certain pesticides be discontinued[103] and Secretary Finch has recently ordered the limited use of the pesticides DDT and DDD.[104]

If the theory enumerated above is accepted it would appear

95. THE LIVING WILDERNESS, Vol. 33, Summer 1969, at 4.
96. *Id.* at 5.
97. People v. Detroit Edison Co., 16 Mich. App. 423, 168 N.W.2d 320 (1969).
98. A "snirt storm" is when the air is literally filled with dirt from the farmers' fields combined with blowing snow. These storms can be very severe due to the winds in North Dakota and the lack of protection on the flat plains.
99. U.S. NEWS & WORLD REPORT, Oct. 20, 1969, at 102-103.
100. *See generally* R. CARSON, SILENT SPRING (1962).
101. Interview with Dr. Glen Sherwood, Vice-Chairman, Advisory Council, in Jamestown, North Dakota, Sept. 27, 1969.
102. *See generally* R. MACMILLAN. THE CASE AGAINST PESTICIDES 1-6 (Michigan Dept. of Conservation, Jan.-Feb. 1968).
103. The New York Times, Oct. 29, 1969, C-25, col. 1.
104. The National Observer, Nov. 17, 1969 at 7, col. 3.

that the State of North Dakota may be able to attack the use of herbicides *et al* through the Air Pollution Control law. However, to date there have been no cases on this point so it remains to be seen what the position of the courts will be. However, the Advisory Council has, it would appear, chosen to consider herbicides *et al* to be within the purview of the statute.[105] However, until tested in the courts, the question remains open. Legislation should be formulated to define herbicides *et al* to be within the purview of the Air Pollution Control law eliminating the present deficiency.

COMPOSITION OF THE ADVISORY COUNCIL

A deficiency equivalent in importance to that just enumerated is the establishment and composition of an Advisory Council. This was the last specified purpose as enumerated in Senate Bill Number 130.[106] Section 23-25-02 (1) of the North Dakota Century Code provides for the establishment of a seven member advisory council consisting of the state health officer, state geologist, state highway commissioner, and four others to be appointed by the governor but representing specific interest groups, except for the member at large.[107]

In order to make an analysis of the representation and composition of the Advisory Council it is necessary to consider certain characteristics of the state itself. North Dakota's main industry is agriculture or agriculture related. The oil industry ranks second with manufacturing becoming increasingly prominent.[108] It would certainly appear appropriate for each of these interests to be represented on the council. However, agriculture, the most important and number one industry, does not have a representative on the council. The importance of this is even more apparent when it is remembered that North Dakota is the greatest applicator of herbi-

105. Letter from Mr. William S. Murray to author, Oct. 24, 1969. "I believe that pesticides, herbicides, et al, are within the purview of this Act . . . ." Letter from Dr. Glen Sherwood to author, Oct. 10, 1969. "The fact that herbicides are air pollutants . . . . [B]y definition in the law. . . . it is an air pollutant."

106. *See* Ch. 260, [1969] N.D. Sess. Laws 497, for the purpose of S. B. 130.

107. The present Advisory Council consists of the following members:

1. Mr. Willis Van Heuvelen, Chief Environmental Health and Engineering Services (represents State Health Officer);
2. Dr. Ed Noble (State Geologist);
3. Mr. Walter Hjelle (State Highway Commissioner);
4. Mr. Theodore Hardmier, Mayor of Mott, N. D. (represents county or municipal government);
5. Mr. Lloyd Ernst, Basin Electric Power Cooperative (represents solid fuels industry);
6. Mr. William Murray, General Counsel Montana-Daktoa Utilities Co. (represents fluid and gas fuels industry);
7. Dr. Glen Sherwood, Ecologist (representative at large).

Interview with Dr. Glen Sherwood, Vice-Chairman, Advisory Council, in Jamestown, North Dakota, Sept. 27, 1969.

108. N.D. ECONOMIC DEV. DEPT., *The Williston Basin—A New Look* 3 (1967).

cides. It should be evident that the agriculture industry should be represented and that this deficiency must be corrected.

While the agriculture industry has no representation on the council the oil and coal industries have two.[109] Well over 25 per cent of the council is represented by these two industries. This possibly might be attributed to the tremendous potential growth of these industries in North Dakota.[110] The representation of the oil and coal industries is clearly out of line. In examining the Model State Act we find that it establishes a fifteen member advisory council with only one representative of the fuel industry and there is also one representative of the agriculture industry.[111] Therefore, the Model State Act allows for less than 7 per cent representation by the fuel industry compared to over 28 per cent in North Dakota.

There is another deficiency indicated by the Model State Act and consideration of the purpose of the air pollution control and abatement program. The Advisory Council lacks a true representative of the faction which so vehemently espouses the preservation of man's environment, the ecologist or conservationist. Fortunately, in North Dakota the representative at large is an ecologist.[112] However, this important group should have a representative defined in the statute.

Under Section 23-25-02 (2)[113] it would appear that the Advisory Council could have a membership comprised of six members with an interest in less restrictive air pollution laws and lax regulation. On this theory only the state health officer would be directly concerned with the protection of the population's health and welfare while the remaining six would have a greater interest in the factions they represent. This follows the theory that the placing of representatives of private interest groups would channel favoritism.[114] Although the members of the Advisory Council in North Dakota represent specific industries and not private interests as such, these representatives are employed by private industry in the state and these industries certainly have an interest in the laws and regulations. Following this theory through to its logical conclusion one finds that the composition of the Advisory Council could aid

109. N.D. CENT. CODE § 23-25-02(2) (Supp. 1969).
110. Air Symposium, Remarks by Mr. Gene Christianson. Mr. Christianson said that there was a possibility of a tremendous growth in the future use of lignite. He also stated that a discovery well in Southwestern North Dakota renewed interest in expanding oil production fields. As noted earlier there is at present speculation concerning the building of a number of power plants in the lignite fields of North Dakota which would be a boom to the lignite industry.
111. S. DEGLER, STATE AIR POLLUTION CONTROL LAWS, Appendix B, Alternate I, § 3 (b) (1969).
112. Interview with Dr. Glen Sherwood, Vice-Chairman, Advisory Council, in Jamestown, North Dakota, Sept. 29, 1969.
113. N.D. CENT. CODE § 23-25-02(2) (Supp. 1969).
114. *State Air Pollution Control Legislation,* 9 B.C. IND. & COM. L. REV. 712, 741 (1968).

and abet rather than abate air pollution, as originally intended, due to the influence of over-representation by some factions.[115] If this were the case the citizens of the state could turn to the federal government for assistance,[116] but one of the purposes for enactment of this law was supposedly to avoid this result.

ADDITIONAL DEFICIENCIES

In reviewing the Air Pollution Control law it appears that no provisions have been made for motor vehicle emissions or for odors. The lack of a specific motor vehicle pollution control law seems very serious when, as noted earlier, this is the greatest single contributor of air pollution in the United States.[117] Some states do have specific legislation on this subject.[118] The probable reason for lack of a greater number of states, as well as the federal government, in taking more action concerning this problem is the doubt that any standards or regulations would provide a solution.[119] The first federal standards were to take effect with the 1968 models with more stringent standards for the 1970 models.[120] However, it seems apparent that the problem of motor vehicle emissions may have to be solved by some means other than the establishment of air quality standards.[121] One approach would be to ban gasoline powered automobiles completely.[122] Another approach being taken

115. *See* Ch. 260 [1969] N.D. Sess. Laws 497, for the purpose of the Act. The author does not wish to imply that any of the present members of the advisory council have any interests which are adverse to the purpose of the Air Pollution Control law. However, it is this author's opinion that requiring an individual to be present on the board while representing a certain state office could lead to a conflict of interest. An example of this is the apparent attitude of a past State Geologist, Wilson M. Laird who stated in a letter to the editor which appeared in Flickertales, June, 1968 at 5, col. 3. "It is unfortunate that the production of oil has to be a messy business. The oil is slimy, the gas smells, and the water is corrosive. But if we want the benefits of the industry, we must expect to experience some inconvenience . . . ." As stated earlier this "inconvenience" was allegedly killing cattle near the oil fields and causing people to become ill. Another example of the potential hazards of the present composition of the advisory council is the possibility of a conflict of interest for certain members. For example, William S. Murray has been appointed by the Governor to represent the fluid and gas fuels industry. However, Mr. Murray is also general counsel for the Montana-Dakota Utilities Co. The Chairman of the Adviosry Council, Mr. Lloyd Ernst, is employed by the Basin Electric Power Cooperative. This is not meant to imply that either of these individuals does not have the best interests of the state in mind. It is this author's opinion that these individuals will make the council as a whole more aware of the problems these industries have. However, there should be representation by those strict advocators of air pollution control, such as ecologists. If there is representation on the Council of these industries then there should also be an equivalent number of those with the extreme view of anti-pollution.

116. 1967 Act § 108 (k).

117. Air Symposium, Remarks by Peter J. Marschall. In 1966 transportation contributed to 60 per cent of the air pollution in the United States.

118. ARIZ. REV. STAT. ANN. § 28-326 B8 (Supp. 1969); CAL. HEALTH & SAFETY CODE § 39080 (West Supp. 1967); CONN. GEN. STAT. ANN. § 14-100b (Supp. 1969); KAN. GEN. STAT. ANN. § 65-3017 (Supp. 1968); WIS. STAT. ANN. § 144.42 (Supp. 1969).

119. *The Air Quality Act Of* 1967, 54 IOWA L.R. 115, 137 (1968).

120. Zimmerman, *Political Boundaries and Air Pollution Control*, 46 J. OF URBAN L. 173, 176 (1968).

121. *Supra* note 119, at 137.

122. Calif. S.B. 778, 1969 Reg. Sess. *as-cited by.* Address by Mr. Richard J. Farrell, Vice President and General Counsel, Standard Oil Co. (Indiana), to Association of General Counsel, Washington, D.C., Oct. 6, 1969 [hereinafter cited as Farrell address].

is to design an automobile which would eliminate the problem such as an electric car. This approach is having limited success.[123] It would appear that North Dakota, as well as most states, will have to wait until either technology provides a solution to the motor vehicle emission problem or emission standards can be shown to be a successful means of control. California would appear to be the leader in respect to control of vehicle emissions. North Dakota may follow California to some extent because "[i]n the field of pollution control, the way California goes, so goes the nation, although what is good for California may not necessarily be best for other regions of the country."[124] One reason legislation, such as California's, might not be successful in North Dakota may be due to lack of carbon monoxide in any dangerous quantities. "[M]any thousands of smaller communities, and great stretches of roads connecting our cities and town may never experience CO concentrations sufficient to be alarming. . . ."[125] It appears that North Dakota is now in a waiting position.

Although there is no specific mention of odors in the Air Pollution Control law it is this author's opinion that odors are within the purview of the statute, although not specifically defined as in some statutes.[126] Under North Dakota Regulation No. 82 of the State Department of Health ambient air quality standards are established for "odorous substances".[127] This regulation states that:

> Consistent with the economic and social well-being of the community, the ambient air shall not contain odorous substances in such concentrations or of such duration as will prevent enjoyment and use of property.[128]

These substances apparently would be found within the classification of "particulate matter" or "gases", both specifically covered in the Air Pollution Control law.[129]

CONCLUSIONS AND RECOMMENDATIONS

In addition to the deficiencies already noted the major deficiency in the enactment of the Air Pollution Control law has not yet been discussed. Unless a law can be efficiently enforced it is of no

123. TIME, Nov. 14, 1969, at 55, col. 3. *See also* Grand Forks Herald, Dec. 1, 1969, at 2, col. 3 for a description of the forthcoming "Clean Air Car Race" which will feature a race of vehicles with penalties for air pollution by the vehicle.
124. Farrell address.
125. AMERICAN PETROLEUM INSTITUTE, AIR QUALITY MONOGRAPH NO. 69-9, AIR QUALITY STANDARDS FOR CARBON MONOXIDE (1969) 1.
126. ARIZ. REV. STAT. ANN. § 36-771 (Supp. 1969); S. DEGLER, STATE AIR POLLUTION CONTROL LAWS, Model State Act, Appendix 1 § 2 (a).
127. R. & Reg. N.D. St. Dep't Health, Reg. No. 82, effective March 1, 1968.
128. *Id.* at § 4 (b).
129. N.D. CENT. CODE § 23-25-01 (1) (Supp. 1969).

value. This is not to say that the Air Pollution Control law established has no provisions for its enforcement, because it has,[130] but the designated department does not appear to have the capacity to enable enforcement of the law.

Prior to the enactment of the Air Pollution Control law it appears that a thorough and complete appraisal of air pollution in the state was non-existent although initial steps had been taken.[131] This is when the sole responsibility for the control of air pollution was upon the Department of Health.[132] To date, an inventory of all pollution sources and statistics is still not available[133] due to a lack of funds and personnel. The Department of Health presently has a budget of less than $30,000 which includes a Federal share of $15,000, for pollution control. The Department has only two engineers, one of which devotes about 15% of his time to air pollution. The Department employs one chemist who devotes about one half of his time to pollution problems.[134] There are approximately 600,000 citizens of North Dakota. This means that approximately *five cents* is being spent annually for each citizen for the control of air pollution which may be costing as much as $500 per individual.[135]

Consider again the problems of herbicides *et al* in this state. North Dakota may have a very serious problem but we don't know and are unable to find out. The Department of Health has indicated that at present it is not possible to consider the problem:

> Our interest is high, but unfortunately, budgetary restrictions prevent us from now actively pursuing the question of pesticides. Studies in pesticides, as well as herbicides, require sophisticated and expensive laboratory equipment plus additions to our technical staff, both of which are currently unattainable under our budgetary posture.[136]

It therefore seems that although the Legislature of North Dakota has provided the law, it has not provided a means for its enforcement.

Another area in which the Legislature failed to establish suf-

130. N.D. CENT. CODE §§ 23-25-09, -10 (Supp. 1969).
131. 1967 *Hearings* at 1243.
132. 1967 *Hearings* at 1242. In an opinion by a Special Assistant Attorney General it was indicated that:

> [T]he North Dakota Department of Health has the statutory authority to both directly and indirectly prevent and control air pollution by the establishment of standards of control and that injurious conditions may be abated by judicial proceedings.

133. Letter from W. Van Heuvelen to author, Oct. 10, 1969.
134. Letter from Mr. Lloyd Ernst, Chairman, Advisory Council, to author, Nov. 24, 1969. [hereinafter cited as Ernst letter].
135. *Supra*, note 75. *See also* letter from W. Van Heuvelen to author, Dec. 2, 1969, in which the 1970 budget for air pollution control was enumerated. A total of $27,160 was allocated with $15,000 being federal funds.
136. *Supra*, note 133.

ficient funds concerns the expenses of members of the Advisory Council.[137] Does this mean that the Legislature did not anticipate that the Advisory Council would be performing any function? Such a conclusion does not seem likely. Due to the short existence of the Advisory Council no observation of its success will be made. However, it appears to be comprised of dedicated individuals and is not the usual "political" committee or council. It is at least arguable that the greatest function to be served by the Advisory Council is the education of the citizens of the state. Unless the citizens understand the problem and demand protection nothing significant will be accomplished.

It is this author's recommendation that additional funds be appropriated for the Department of Health and that a full time individual be designated to conduct the air pollution program, someone who is fully trained and qualified in all aspects of the problem of air pollution. This state must take the necessary action, for unless forced to do so the pollutors will not cease to pollute the air we breathe. If the force cannot be applied via the Air Pollution Control law it will be necessary for individuals or classes to turn to the courts for protection.[138] It will then be up to the attorneys of this state to "knock at the door of courthouses . . . and seek the protection of equity for our environment".[139] If the states fail to regulate and control pollution and the courts fail to provide the solution the federal government, of necessity, will supply the answer. It has been suggested that the " [e]stablishment of national emission standards not only would help clean up polluted air, but would prevent the pollution of the atmosphere in areas which now have relatively clean air. National emission standards would eliminate the problem of 'haven' states and communities. . . ."[140] The choice now rests with the states.

THOMAS L. ZIMNEY

137. Ernst letter.
138. *State Air Pollution Control Legislation*, 9 B.C. IND. & COM. L.R. 712, 716-26 (1968) for a discussion of the different causes of action.
139. TRIAL, Aug./Sept. 1969, at 10, col. 3.
140. Zimmerman, *Political Boundaries and Air Pollution Control*, 46 J. of Urban L. 173, 190 (1968).