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AIR POLLUTION CONTROL ON THE UNITED STATES-MEXICO BORDER: INTERNATIONAL CONSIDERATIONS

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The border between the United States of America and Mexico extends about 1,600 miles. Four American States and six Mexican States are situated along this international line where fourteen pairs of twin cities are established from San Diego-Tijuana on the Pacific Coast, to Brownsville-Matamoros on the Gulf of Mexico.

About 3.5 million people live along the border area. In the area of Tijuana-San Diego there are about 950,000 inhabitants; in El Paso-Ciudad Juárez 850,000; in Calexico-Mexicali 320,000; and in Brownsville-Matamoros 240,000. The other twin cities have a much smaller population.

The border unites two great countries, two cultures with marked political, social and economical differences. Nevertheless, for most of the people living in this area, there is an intrinsic interdependency. Life at the local level is united by common bonds. Residents seek mutual support in their search for prosperity and economic improvement. Of all the international borders in the world it is said that the United States-Mexico border registers the most intense transit. In gross figures the number of people that cross the border per year is about 130 million, one fourth from the El Paso-Ciudad Juárez area. Workmen, tourists, businessmen and others continuously cross the border from each side. This movement is beneficial and welcomed by both the United States and Mexico.

From the public health point of view, the border, with all its peculiar characteristics, constitutes an epidemiological unity. The problems are generated by special conditions arising in the area. Their solution demands attention uncommon to the traditional procedures of work in public health administration. It can also be said that each pair of cities belongs to a restricted environmental system in which natural resources, especially water and air, are common and limited to both cities and their surroundings. The utilization of these resources benefits the inhabitants of all the

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area. In the same way, the deterioration they may experience affects the entire international community.

With respect to the environmental problems within this system, the border line, as a political barrier, is not significant; and in some instances, it completely disappears. Air crosses the border without a passport. Due to wind velocity and direction, it moves from one country to the other carrying along impurities resulting from human activity generated in the metropolitan area. Polluted air pays no respect to national boundaries and is not distributed to each city in proportion to the pollution load which each one of them contributes. It affects the health of all the inhabitants in the area and constitutes an economic burden for both cities.

The large metropolitan areas are experiencing rapid growth, their population increases at larger rates than the average growth figures for each respective country. The number of vehicles increases proportionately; industry expands and diversifies. As in any modern urban process, the cities progress and expand imposing greater demands on an environment which deteriorates even more.

It is not within the scope of this presentation to describe the air pollution problems in the cities along the border. Neither would it be possible to make an objective diagnosis of this condition due to the lack of basic information pertinent to each of the metropolitan areas established in this region. In the American cities, regular air quality monitoring programs are in operation which respond to federal, state and local needs. In some Mexican cities, sporadic sampling, on a smaller scale, has taken place in the past. With the exception of the Joint Air Pollution Sampling Program under development in El Paso-Ciudad Juárez since February of this year, there are no other experiences of joint sampling. In general, results from sampling for particulates in most of the border cities indicate high values due to the soil characteristics and the aridity of the region. Vehicle movement through unpaved streets in some of the cities aggravates this situation.

Faced with the need to control air pollution in the cities along the border, in order to provide for more appropriate levels of health, the border acts as a real barrier with particular characteristics some of which are the following:

Juridical and legal characteristics: due to the absence of legal mechanisms which would establish joint participation between

both countries, and to the public health legislation adopted by each country related strictly to national needs;

Technological and scientific characteristics: related to standard procedures, techniques, instrumentation, *etc.*, adopted and utilized in each country;

Economic characteristics due to standards of living in each country, due to the policies for economic development established in each case, and due to the economic resources that each country can allocate to air pollution control activities; and

Urban planning characteristics: due to the standards and criteria for urban planning adopted by each twin city foreign to the neighbor city.

It is also of importance to highlight the attention being given environmental problems by each country. First in the United States and more recently in México, appropriate legislation has been adopted, and executive agencies established with responsibility for program planning and implementation. We are also aware of the concern that the health authorities of both countries have for the environmental problems occurring on the border. Consequently, there appear to be favorable conditions for attention to the international implications relating to the performance of air pollution control activities in this area.

In preparing this presentation, it was our desire to direct attention to these international implications and to suggest guidelines which would be pertinent and appropriate to this topic. In so doing, we were also induced by the encouraging results shown by the joint air pollution monitoring program under development in Ciudad Juárez-El Paso. This program was developed in conjunction with the El Paso City-County Health Department, the health officials of Ciudad Juárez, in collaboration with the Field Office, United States-Mexico Border of the Pan American Health Organization, World Health Organization. This program is based on the willingness of the health authorities of both cities to acquire knowledge about the problem and its trends in order to expedite appropriate corrective measures. They have established bases of cooperation to study air quality in the metropolitan area, utilizing standardized instrumentation and sampling procedures in the field, as well as in the laboratory.

We also wished to learn about similar experiences developed between other countries in order to be able to transmit them in this presentation. We could not find reference to similar examples. However, it must be noted that our search for other

examples was not exhaustive. The absence of other examples suggests that the experiences of El Paso-Ciudad Juárez could well be without precedent.

The frame of reference for international cooperation should be an agreement established between the interested countries. In the case of air pollution control activities in border cities, this document should consider the following:

Joint analysis and compatibility of the regulations of each city within the scope of the national legislation established in each country;

Joint definition of the problems of air pollution in the metropolitan areas through the development of joint sampling programs and exchange of information available;

Joint study of air quality criteria which should guide the preparation of local regulations in each twin city;

Definition of a strategy for the development of preventive and control activities that should be performed under a joint program;

Joint and periodic evaluation of pollution control strategy and of program performance;

Establishment of mechanisms for warning of emergency episodes and definition of abatement strategies for emission reduction; and

Implementation of an agreement indicating appropriate procedures and, in this regard, establishment of a working group composed of staff members from air pollution control agencies from both countries. This unit would be responsible for coordination, planning and evaluation of the joint program. The executive duties should correspond to the appropriate national or local agencies, as pertinent.

Two stages of activity that both governments might follow in the establishment of an appropriate working relationship would be—

First, a stage of association and preliminary analysis of the problem. Second, a stage of formalizing working relationships, problem definition and initiation of control activities. In both stages, communication between the countries through workshops, seminars, and other means is essential. Training of personnel for joint action in air pollution control would be beneficial.

Progress toward the first phase has been achieved already in the El Paso-Ciudad Juárez area. Underlying this progress has been the interest and preoccupation which the health authorities of both cities have had about the air pollution problem. Participation of the United States-Mexico Border Public Health Association has also been important. This participation has allowed public health workers from both countries to discuss air pollution in the border cities and adopt resolutions recommending that their countries institute governmental action. The subject has also been discussed in meetings between the Surgeon General of the United States Public Health Service and the Secretary of Health and Welfare of México. During these meetings, the importance of exhaustively studying the problem of air pollution in the principal border cities was recognized. At the same time agreements were made that these activities be expanded beyond the investigation of the problem to actually searching for concrete methods of control.

All of these factors are favorable indications of the progressive development of activities oriented to the prevention and control of air pollution on the border.

There is no doubt that in the future relationships between governments concerning environmental matters will be strengthened, not only where nations share a common border, but in the overall international community of nations. International organizations are discussing the problem of environmental deterioration and possibly, when opportune, all countries will adopt guidelines and criteria for international control. The World Health Organization has established a system of thirty-four air pollution monitoring stations throughout the world. In addition, two international reference centers have been designated. These centers and other laboratories collaborate with the World Health Organization to advise on research results; carry out specific research on request; and collect, evaluate and exchange scientific information.

The World Health Organization is also moving rapidly toward the establishment of internationally acceptable air quality standards. In the Americas, the Pan American Health Organization has established a regional pollution monitoring network which operates in the major capitals and important cities of Latin America with the objective of filling a need for basic quantitative information. This data should permit the comparative study of

the situation in various participating cities. A similar network should be established in the twin cities along the United States-Mexico border. Operating under standardized procedures, this network could provide both governments with appropriate information regarding the problem in the locality. In this way, appropriate activities in air pollution prevention and control can be performed in the future, complementing other health programs developed jointly by both countries.

If environmental health problems are not considered within the confines of the system in which they originate, the best possible solutions will not be found. Air pollution in some cities of the Mexican-American border needs to be examined in this way. Solutions will be found only through the good will and joint action of both governments.