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El Paso-Ciudad Juarez Air Pollution -- Is Change In The Wind?

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TABLE OF CONTENTS

ACRONYMS

AQCRS - air quality control regions

BECC - Border Environmental Cooperation Commission

CAAA - Clean Air Act Amendments

CAFE - corporate average fuel economy

CEC - Commission for Environmental Cooperation

CECC - Commission for Environmental Cooperation Council

CITES - Convention on International Trade in Endangered Species (of Wild Fauna and Flora)

CO - carbon monoxide

EC - European Community

EIA - environmental impact appraisals

EPA - Environmental Protection Agency

ESA - Endangered Species Act

ETP - Eastern Tropical Pacific (Ocean)

GATT - General Agreement on Tariffs and Trade

HC - hydrocarbons

IAQMD - International Air Quality Management District

IBWC - International Boundary and Water Commission

I/M - inspection and maintenance

JPAC - Joint Public Advisory Committee

MMPA - Marine Mammal Protection Act

MPLs - maximum permissible levels

NAAEC - North American Agreement on Environmental Cooperation

NAAQS - National Ambient Air Quality Standards

NADB - North American Development Bank

NAFTA - North American Free Trade Agreement

NEPA - National Environmental Policy Act of 1969

NTEs - technical ecological norms

O_3 - ozone

PM_{10} - particles smaller than 10 micrometers or microns

PSD - Prevention of Significant Deterioration Program

RACT - Reasonable Available Control Technology

SECOFI - Secretariat of Commerce and Industrial (Promotion)

SEDESOL - Secretariat of Social Development

SEDUE - Secretariat of Urban Development and Ecology

SIP - state implementation plan

SPS - Sanitary and Phytosanitary (Measures)

SRM - standards-related measures

TSP - total suspended particulates

USTR - United States Trade Representative

VOC - volatile organic compounds

WTO - World Trade Organization

INTRODUCTION

The Mexican border extends for nearly 2,000 miles from the Gulf of Mexico to the Pacific Ocean crossing four U.S. states.[1] Texas's border with Mexico is the longest of the four border states[2] stretching for 1,200 miles along the Rio Grande River. The Texas-Mexican border not only offers a unique cultural interface but also a highly dynamic economy that includes tourism, agriculture, and manufacturing facilities. The primary economic development along the Texas-Mexican border has been in seven pairs of "sister cities" -- Brownsville-Matamoros, Presidio-Ojinaga, Del Rio-Ciudad Acuna, Eagle Pass-Piedras Negras, Laredo-Nuevo Laredo, McAllen-Reynosa, and El Paso-Ciudad Juarez.[3]

El Paso is located on the north bank of the Rio Grande River and is built like a horseshoe around the Franklin Mountains while its sister city, Ciudad Juarez (Juarez), is located on the eastern and northern slopes of the Sierra de Juarez.[4] Topographically, they form a large amphitheater[5] and share common air and water sheds. Environmentally, they suffer from common maladies associated with each media. The primary causes of water pollution are insufficient sewer systems and wastewater treatment facilities to support a growing population[6] as well as direct discharges of industrial effluent into the water

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1 SECRETARIAT OF URBAN DEVELOPMENT AND ECOLOGY (SEDUE) - ENVIRONMENTAL PROTECTION AGENCY (EPA), INTEGRATED ENVIRONMENTAL PLAN FOR THE MEXICAN-U.S. BORDER AREA (FIRST STAGE, 1992-1994), II-1 [hereinafter BORDER PLAN].

2 The other states are Arizona, New Mexico, and California.

3 BORDER PLAN, *supra* note 1, at II-6.

4 Cees Flinterman et al, *Transboundary Air Pollution, International Legal Aspects of the Co-operation of States*, 96-97 (1986).

5 *Id.*

supplies.[7] While El Paso-Juarez's water pollution makes other pollution "pale by comparison"[8] in terms of environmental and health impact, its sources are readily identifiable and remedied. On the other hand, El Paso's air pollution problems are well documented,[9] but the sources of pollution have been difficult to identify due to the lack of emissions monitoring equipment on the Mexican side of the border.[10] Air pollution control in terms of source identification, remedial measures, and subsequent enforcement of those measures is extremely difficult in an international setting. This situation is exacerbated by air pollution's health effects which are less dramatic than water pollution and require long term exposure to physically manifest.

The cornerstone of our national effort to control air pollution is the Clean Air Act of 1970. It required the Environmental Protection Agency (EPA) to establish primary National Ambient Air Quality Standards (NAAQS) designed to protect the public health. EPA listed six national ambient air quality standards for the most common air pollutants -- carbon monoxide, hydrocarbons, sulfur dioxide, ozone, nitrogen oxides, and

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6 Gary Lee, *At Border, NAFTA's Environmental Promise is Murky*, Wash. Post, Nov. 15, 1993, at A1, A8 (El Paso's population of 545,000 is expected to triple in size by 2045 and Juarez's population of 1.3 million is projected to grow even faster).

7 U.S. GENERAL ACCOUNTING OFFICE, U.S.-MEXICO TRADE: INFORMATION ON ENVIRONMENTAL REGULATIONS AND ENFORCEMENT (1991) [hereinafter REGULATIONS AND ENFORCEMENT].

8 Remarks of Buck J. Wynne, former EPA Region VI Administrator, *International Affairs: Water Pollution Called Biggest Problem In Region of United States/Mexico Border*, Env't Rep. (BNA) 1080 (Oct. 8, 1993).

9 *See* C. Richard Bath, *U.S.-Mexico Experience in Managing Transboundary Air Resources: Problems, Prospects, and Recommendations for the Future*, 22 Nat. Resources J. 1147 (1982); Howard G. Applegate, *Transboundary Air Quality: Problems and Prospects from El Paso to Brownsville*, 22 Nat. Resources J. 1133 (1982); C. Richard Bath, *Alternative Cooperative Arrangements For Managing Transboundary Air Resources Along The Border*, 18 Nat. Resources J. 181 (1978).

10 REGULATIONS AND ENFORCEMENT, *supra* note 7, at 3.

particulates. Eventually, hydrocarbons was replaced by lead which is now a negligible risk, in most areas, due to the banning of leaded gasoline.

The NAAQS for carbon monoxide, ozone, and particulates are listed in Table 1. El Paso County is in violation of the NAAQS and is therefore designated as nonattainment[11] for carbon monoxide, ozone and particulates.

This thesis will first examine the sources of El Paso's air pollution and its health effects. Then it will review the 1990 Clean Air Act Amendments (CAAA) applicable to El Paso's air pollution followed by a discussion of Mexican environmental laws. Finally it will discuss U.S.-Mexican environmental cooperation and two controversies under the General Agreement on Tariffs and Trade (GATT) which helped shape the tenor of the North American Free Trade agreement (NAFTA) and its environmental side agreement.

This thesis concludes that with the passage of NAFTA, an international air quality management district (IAQMD) should be created as an annex to the La Paz Agreement for the management of transboundary air pollution. The IAQMD should assume binational air pollution monitoring responsibilities, strive to establish uniform air pollution standards, prioritize air pollution related projects, seek air pollution project funding through the NAFTA's North American Development Bank (NADB), monitor compliance, cite violators, refer disputes to the NAFTA's Commission for Environmental Cooperation (CEC), and impose penalties for violations of IAQMD standards.

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[11] CAA § 107, 42 U.S.C. 7407.

Table 1

Side-by-Side Comparison of Mexico's Ambient Air Quality Standards and United State Ambient Air Quality Standards

POLLUTANT	MEXICO	UNITED STATES
Sulfur Dioxide (SO_2)	.13 ppm (24-hour)[1]	.14 ppm (24-hour)[2]
Nitrogen Dioxide (NO_2)	395 ug/m3 (1-hour)	100 ug/m3 (annual)
Particulate Matter (PM)	275 ug/m3 TSP[3] (24-hour)	150 ug/m3 PM_{10} (24-hour)[4]
Carbon Monoxide (CO)	14,950 ug/m3 (8-hour)	10,000 ug/m3 (8-hour)[5]
Ozone (O_3)	.11 ppm (24-hour)	.12 ppm (24-hour)
Lead (PB)	1.5 ug/m3 (3-month)	1.5 ug/m3 (3-hour)
[1] For chart, parentheticals indicate averaging time for the standard.		
[2] The U.S. also has an annual ambient SO_2 standard, for which there is no equivalent standard in Mexico.		
[3] Mexico's standard is for total suspended particulates, while the U.S. standard is for particles with diameters of 10 microns or less. When the U.S. standard was expressed in total suspended particulates, it was set at a level equivalent to Mexico's current standard.		
[4] The U.S. also has an annual PM standard, for which there is no equivalent standard in Mexico.		
[5] The U.S. also has a short-term (1-hour) standard, for which there is no equivalent Mexican standard.		

Source: United States Environmental Protection Agency Office of General Counsel, *Evaluation of Mexico's Environmental Laws, Regulations and Standards, Preliminary Version of Final Report* (Nov. 5, 1993), Table 4, 26.

I. THE MAQUILADORA PROGRAM

El Paso's pollution problems, like any other large metropolitan city, cannot be traced to a single source, but if you had to identify one source or program responsible for much of El Paso's air pollution problems it would have to be the maquiladora program.

In 1965, the Mexican government initiated the maquiladora program to generate economic activity in the depressed northern border and to create jobs for seasonal migrant workers returning at the end of the United States Barcero program.[12] In the past, the term "maquiladora," or mill, referred to grain grinding mills and the "maquila" was the mill owner's share of the flour received for grinding the grain.[13] The modern Mexican maquiladora refers to foreign-owned, export-oriented processing and assembly plants that are permitted to temporarily import equipment, components, and inputs into Mexico on a duty-free basis and export these items back to the United States paying duty only on the value added in Mexico.[14] The growth of the maquiladoras can be attributed to many factors but in particular the peso devaluation in 1976 and 1982[15] as well as the increasing American wage schedule.[16] Lured by low wages,[17] relaxed environmental standards,[18]

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[12] Gary C. Hufbauer and Jeffrey J. Schott, *North American Free Trade: Issues and Recommendations*, 91 (1992) (The Barcero program, which operated from 1942-1964, permitted seasonal entry into the United States for migrant Mexican farm workers. Although in existence from 1942, the Barcero program really gathered momentum during the Korean war which created a shortage of workers) [hereinafter HUFBAUER].

[13] BORDER PLAN, *supra* note 1, at II-8.

[14] *Id* at II-9.

[15] J. Michael Kennedy, *The Free-Trade Dilemma*, L.A. Times, Nov. 20, 1991, at A1 (in early 1982, the exchange rate went from 12 pesos to the dollar to more than 3,000 pesos per dollar).

[16] OFFICE OF THE U.S. TRADE REPRESENTATIVE, REVIEW OF U.S.-MEXICO ENVIRONMENTAL ISSUES 64 (Feb. 1992) [hereinafter USTR REVIEW].

[17] *The NAFTA Debate: Are Concerns About U.S. Job Migration to Mexico Legitimate*, Employee Relations Law Journal, Dec. 22, 1993, (According to a

preferential treatment in Mexico, and favorable tax treatment,[19] over 50 percent of America's top 100 largest corporations operate maquiladoras in Mexico.[20]

American owned maquiladoras represent diverse industries ranging from the world's largest automobile manufacturers to toy makers, furniture makers, and paint producers. While their presence in Mexico brings jobs and economic prosperity, their presence also has wrought environmental havoc in a country ill-equipped to manage toxic manufacturing wastes such as solvents, acids, resins, paints, plastics, oils, varnishes, heavy metals, and pesticides.[21] Between 1980 and 1992, the number of maquiladora plants grew from 620 to 2,075 and maquiladora employment mushroomed from 120,000 to over 500,000.[22] The maquiladora plant growth and corresponding boom in worker population is directly responsible for much of the pollution but none so evasive as air pollution.

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comprehensive report prepared by the United States International Trade Commission (ITC), the hourly rate in 1990 for Mexican maquiladora exporting industries was $1.25 compared to their American counterpart who earns $15.45); U.S. GENERAL ACCOUNTING OFFICE, U.S.-MEXICO TRADE: THE WORK ENVIRONMENT AT EIGHT U.S.-OWNED MAQUILADORA AUTO PARTS PLANTS (1993), 14 [hereinafter WORK ENVIRONMENT] (in 1991, the average total compensation cost for Mexican transportation equipment maquiladora workers was $1.61 an hour. For U.S. workers in motor vehicle assembly, parts, and equipment manufacturing, average total compensation costs were $24.21 per hour); *but see*, *NAFTA facts: North American Free Trade Agreement Provisions; Special NAFTA Issue*, Business America, Oct. 18, 1993 (higher U.S. wages are said to be based on higher productivity).

[18] Robert J. McDonnell, *Foreign-Owned Companies Add to Mexico's Pollution*, L.A. Times, Nov. 18, 1991 [hereinafter MCDONNELL].

[19] Malissa H. McKeith, *The Environment and Free Trade: Meetings at the Mexican Border*, 10 Pac. Basin L.J. 183, 185 (1991).

[20] HUFBAUER, *supra* note 12 at 96.

[21] MCDONNELL, *supra* note 18.

[22] WORK ENVIRONMENT, *supra* note 17; *but see* Mr. Santiago Onate Laborde, Mexican Attorney General for Environmental Protection, Remarks at the National Press Club, Washington, D.C. (Nov. 2, 1993) (transcript available in LEXIS, Nexis Library, World File) (Mr. Laborde stated there are 1,728 maquiladora plants, of which sixty percent are American owned) [hereinafter LABORDE].

In El Paso's sister city, Cuidad Juarez, there are 321 maquiladoras employing 134, 838 people.[23] While air pollution is a common phenomena in America, what makes El Paso unique is its sharing of a common airshed with a Mexican sister city. El Paso cannot remedy its air pollution problems without addressing the air pollution problems of its sister city -- Juarez. But while Americans can easily understand the illnesses caused by water pollution[24] or other forms of pollution, most Americans do not understand how air pollution affects human health.

II. HEALTH EFFECTS OF AIR POLLUTION

El Paso has been designated as a serious nonattainment area for ground-level ozone, and a moderate nonattainment area for carbon monoxide and particulate matter.[25] When the cumulative effect of all contaminants are considered, El Paso ranks as the seventh worst city in the United States for air pollution,[26] yet it is ranked twenty-seventh among America's "Great Places to Live."[27] El Paso's air pollution will come as no surprise to those living in El Paso, but few -- if any -- understand the health consequences posed by each pollutant.

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23 BORDER PLAN, *supra* note 1, at B-9.

24 *Southwest Simmers Amid 100-degree Days*, USA Today (Jun. 29, 1994) 3A (Last April, cryptosporidium from Lake Michigan contaminated Milwaukee's drinking water supply. The cryptosporidium sickened 400,000 people and may have played a part in the death of 88 with weakened immune systems).

25 CAA § 107, 42 U.S.C. § 7407.

26 Texas Air Quality Compared to National Levels (1990) at 4.

27 U.S. News & World Report, Apr. 11, 1994, at 82.

A. Health Effects of Ozone

While the common perception of ozone pertains to the stratospheric ozone depletion by chloroflucarbons, ground-level ozone air pollution is no way connected with it and each presents two entirely separate issues. Essential to any effort to reduce ozone air pollution is an understanding and reduction of volatile organic compounds (VOCs).

VOCs are emitted from a variety of sources including dry cleaners, paint shops, automobiles, refineries, chemical manufacturing, and other users of solvents. A simple way to understand VOCs is to recall the smell of a freshly painted room. That smell, or the fumes, are the result of chemicals being mixed to form the paint product. Those fumes or VOCs are precursors to the formation of ozone (O_3). Ozone is not directly emitted into the air but is the product of natural and man-made emissions of VOCs and oxides of nitrogen reacting in the presence of sunlight. Sunlight and high temperatures conducive to ozone creation exist primarily in geographic areas which enjoy warm, sunny days. This is exactly the type of weather conducive to outside activities spent with our children, families, and friends particularly during the summer months, but this is also the time ozone air pollution and its effects are the greatest. Ozone is inherently reactive and oxidizes when it contacts other substances whether it be other pollutants or the human body. This oxidization manifests itself internally by causing airway inflammation and hyperreactivity, bronchial epithelial permeability, decrements in pulmonary function, cough, chest tightness, pain on inspiration, and upper respiratory tract irritation.[28] Nonrespiratory effects associated with ozone exposure include nausea, headache, malaise, and decreased

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[28] J. Routt Reigart, MD, et al, *Ambient Air Pollution: Respiratory Hazards to Children*, American Academy of Pediatrics (1993), 91: 1210-1213.*Id*, nn. 1-7.

ability to perform sustained exercise.[29] Epidemiologic studies have linked increased ozone concentrations with exacerbations of asthmatic symptoms.[30] While the day-to-day health effects may appear small to the average healthy American, they pose a clear danger to those who are already suffering from preexisting pulmonary or cardio-pulmonary disease. Additionally, repeated ozone exposure may have a cumulative or synergistic effect resulting in decreased lung function. In sum, ozone exposure affects not only those most susceptible to its effects but may be a factor in shortening life expectancy.

In addition to human health effects, ozone also affects vegetation and crops. British scientists recently established a link between car exhaust fumes, ground-level ozone, and stunted growth patterns in beech trees.[31] Ozone is also thought to decrease U.S. crop yields by as much as 10 percent for an annual loss of between $3.5 to 7 billion dollars, according to a joint EPA and U.S. Department of Agriculture study.[32]

As an ozone nonattainment area, El Paso's population is a victim to the effects of ground-level ozone as well. The American Lung Association has estimated that 27 percent of El Paso's population are children under the age of 13 and 9 percent are adults over the age of 65[33] who are "at risk"[34] from exposure to ozone. Based on ozone

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29 *Id*, nn 7-9.

30 *Id*, nn 10-11.

31 *Beech Trees 'Fall Victim to Exhaust Gases'*, The Times, Feb. 5, 1994.

32 Lester R. Brown, *A New Era Unfolds*, Challenge, May, 1993.

33 American Lung Association, *Breath In Danger II, Estimation of Populations-At-Risk of Adverse Health Consequences in Areas Not in Attainment with National Ambient Air Quality Standards of the Clean Air Act*, (1993), at 15.

34 The Clean Air Act of 1970 required the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQSs) for six of the most widespread air pollutants in the outdoor environment: particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, ozone, and lead. Congress directed EPA to establish the NAAQSs with an adequate margin of safety to account for limitations in scientific information on the health effects of these pollutants, with particular concern for those

exposure alone, over one-third of El Paso's population is "at risk" and while the effects may be more immediate for the elderly, the long term effects and costs -- healthcare, loss of wages, economic contribution to the economy, and national productivity -- will be felt for generations.

As if ozone exposure alone were not serious enough, ozone may combine with other airborne pollutants such as sulfur dioxide and precipitation creating sulfuric acid.[35] Depending upon weather conditions, this toxic mix may be carried hundreds--even thousands--of miles damaging forests and farmlands.[36] Thus the effort to regulate the emission of sulfur dioxide takes on an added dimension as well. In other words, by reducing sulfur dioxide emissions you reduce ozone's efficacy.

B. Health Effects of Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless poison gas formed when carbon-containing fuel is not burned completely.[37] Seventy-five percent of all carbon monoxide is produced by automobile exhaust and it is by far the most plentiful pollutant.[38] When inhaled, carbon monoxide enters the bloodstream by combining with the hemoglobin which normally carries oxygen to the cells.[39] The predictable result decreased

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"populations-at-risk." Populations-at-risk is a segment of a defined population exhibiting characteristics associated with significantly higher probability of developing a condition, illness, or other abnormal status. This high risk may result from either greater inherent susceptibility or from exposure to situations peculiar to that group. What is meant by inherent susceptibility is a host characteristic or status that predisposes the host to a greater risk of heightened response to an external stimulus or agent.

35 Geoff Scott, *Our Planet, Our Health*, Current Health 2, Dec. 1989, at 4.

36 *Id.*

37 Arnold W. Reitze, Jr., *Air Pollution Law*, (1992), Chapter 2 [hereinafter REITZE].

38 *Id.*

oxygen delivery to the cells, thus impairing their function. EPA's present carbon monoxide limit is 9 parts per million (ppm)[40] which has been found to bind three per cent of the body's hemoglobin. Several studies have linked carbon monoxide exposure to not only arrythmias but also increased mortality.

A University of North Carolina study found that while low level exposure to carbon monoxide has a negligible effect, volunteers with coronary artery disease who were experimentally exposed to levels of 6 percent carboxyhemoglobin had significant increases in premature ventricular contractions and complex ventricular arrythmias.[41] While this study concluded that there was a potential link between carbon monoxide and exercise-related arrhythmia, the more important aspect, for carbon monoxide air pollution considerations, was the average age of the study group--62.8 years. Admittedly, the study group had preexisting coronary heart disease, but carbon monoxide air pollution will, most likely, have the greatest effect on those groups "at risk," such as the elderly or those with preexisting pulmonary disease.

A more telling study of carbon monoxide exposure and death from heart disease was made of New York City tunnel officers and bridge officers from 1952 to 1981.[42] The mean carbon monoxide level inside the tunnels in 1981 was 38 ppm compared to the bridge toll booths average of 23 ppm. Peak carbon monoxide levels in traffic lanes and tunnel catwalks were frequently more than 100 ppm and occasionally peaked at 400 ppm.

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39 *Id.*

40 *See* 40 C.F.R. 50.8.

41 David S. Sheps, MD, MSPH, et al, *Production of Arrhythmias by Elevated Carboxyhemoglobin in Patients with Coronary Artery Disease*, Annals of Internal Medicine. 1990; 113:343-351.

42 Frank B. Stern, et al, *Heart Disease Mortality Among Bridge and Tunnel Officers Exposed to Carbon Monoxide*, Am. J. Epidemiology 1988; 128: 1276-1288.

The study found that heart disease among tunnel officers was the only cause of death that was statistically significantly higher. The tunnel officers experienced a 35 percent greater death rate due to arteriosclerotic heart disease than the bridge officers and for those tunnel workers working ten or more years, that rate increased to 88 percent. Fortunately, for those who either quit or survived to retirement, their risk of arteriosclerotic heart disease returned to normal. The fact that the risk decreased after employment termination or retirement suggests that the acute effects of carbon monoxide exposure are more important than chronic effects.[43]

Thus, the overall effects of carbon monoxide air pollution are more life threatening to those "at risk"--the elderly, the young, or those with cardiopulmonary disease, and those who are exposed to acute levels.

C. **Health Effects of Particulate Matter**

As a result of the 1970 Clean Air Act Amendments, EPA designated particulates as one of the six criteria pollutants for ambient air limits. Particulate air pollution is a mixture of solid and liquid droplets varying in size and chemical composition. Particulates may include dust, carbon, hydrocarbons, sulfates, and other pollutants which become airborne and are capable of being inhaled. Originally, particulates were measured by total suspended particulates (TSP), but in 1987 this measurement was replaced by PM_{10} which refers to particles smaller than 10 micrometers or microns. While larger particulate matter is associated with dust or other organic matter, particulates smaller than three microns may be produced by electric power generation, mobile transportation sources,[44] and

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[43] *Id* at 1284.

manufacturing. Depending upon their origin, this smaller or fine particulate air pollution may be composed of sulfates, nitrates, and other, potentially hazardous, chemicals. These fine particulates may be deeply inhaled into the lungs and may pass into the blood system, eventually coming to rest in the body.

The harm associated with particulates may be physical or chemical.[45] Physical harm results when particulates settle in the lungs and irritate the membranes eventually resulting in a disease such as "black lung" which occurs from coal dust clogging lung sacs.[46] Chemical harm occurs when the particulate passes through the lungs into the bloodstream and eventually lodges in the body, potentially resulting in disease.

In a recent study of six U.S. cities, increased mortality rates were positively linked with levels of inhalable fine particulate air pollution.[47] Particulate air pollution was positively associated with increased mortality rate from lung cancer and cardiopulmonary disease. Interestingly, the highest sulfate particulate exposure and mortality rate occurred in Steubenville, Ohio while the lowest was in Topeka, Kansas.[48] While the study did not examine nor discuss it, one of the reasons for lower sulfate exposure in Topeka may very well be the burning of western coal which is lower in sulfur content than eastern coal.

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[44] Dr. Larry M. Roderick, *A Computer Simulation of the Impact of the Cordova Bridge Traffic Delays on the Environment*, J. Environ. Sci. Health, A28(9), 1993 (Among the particulates from diesel, 90 percent are less than 1 micron in diameter and consequently are potent if inhaled).

[45] REITZE, *supra* note 37.

[46] *Id.*

[47] Douglas W. Dockery, Sc.D., et al, *An Association Between Air Pollution and Mortality in Six U.S. Cities*, N. Engl. J. Med. 1993; 329: 1753-1759.

[48] *Id* at 1755.

While the current 24-hour NAAQS for particulate matter (PM_{10}) is 150 micrograms per cubic meter (ug/m^3),[49] El Paso's PM_{10} level is 158 ug/m^3, placing it among the top sixteen counties with the worst PM_{10} levels.[50]

III. THE 1990 CLEAN AIR ACT AMENDMENTS

The complexity of the sweeping reforms of the 1990 Clean Air Act Amendments (CAAA) are beyond the scope of this thesis, but what follows is a brief summary. The 1990 CAAA distinguishes between stationary source control requirements[51] and mobile source control requirements.[52]

Each state is divided into air quality control regions (AQCRs) which are further subdivided into areas. Each area's air is evaluated to determine whether they are in attainment or nonattainment for each of the six criteria pollutants. If an area exceeds the NAAQS for a particular criteria pollutant, it is designated nonattainment for that particular criteria pollutant. El Paso is a nonattainment area for carbon dioxide, ozone, and particulates. El Paso has been further classified a moderate nonattainment area for carbon monoxide and a serious nonattainment area for ozone.

As a serious ozone nonattainment area, El Paso must achieve attainment not later than November 15, 1999.[53] In order to achieve this goal, El Paso must obtain reductions in volatile organic compounds (VOC) of 15 percent from 1990 levels by 1996 and 3 percent thereafter until attainment is reached.[54] This will require implementing an

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49 40 C.F.R. 50.6.
50 American Lung Association, *Perils of Particulates* (March 1994), at 24.
51 Subchapter I, 42 U.S.C. §§ 7401-7515.
52 Subchapter II, 42 U.S.C. §§ 7521-7590.
53 CAA § 181, 42 U.S.C. § 7511.

enhanced inspection and maintenance (I/M) program, implementing a new source permitting program, requiring Reasonably Available Control Technology (RACT) for VOC emissions for additional stationary sources,[55] vapor recovery controls for gasoline fueling,[56] participating in EPA's fleet vehicle clean fuels program,[57] and completing a major air modeling effort this year.[58] Additionally, existing industrial polluters are unable to expand production and new sources will be unable to locate in the El Paso area unless anticipated pollution increases are offset[59] with emission reductions.

Secondly, as a moderate[60] carbon monoxide nonattainment area, El Paso implemented alternative vehicular fuels or oxygenated fuels program during the winter months.[61] Carbon monoxide, as a product of mobile sources, results from incomplete

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54 CAA § 182(c)(2), 42 U.S.C. 7511a(c)(2).

55 CAA § 182(c)(2), 42 U.S.C. § 7511a(c)(2); *see also State Approves Second Phase of Emission-Reduction Plan*, UPI, May 6, 1994 (the Texas Natural Resource Conservation Commission approved the second and final phase of a plan to reduce ozone-forming emissions by seeking a total 15 percent reduction from commercial bakeries, industrial wastewater facilities, municipal landfills, gasoline terminals, naphtha dry cleaners, and other sources).

56 CAA § 182(c)(3), 42 U.S.C. § 7511a(c)(3).

57 CAA § 182(c)(4), 42 U.S.C. § 7511a(c)(4).

58 *Texas Weighs Reformulated Gas, Strict RVP for El Paso Fuel Program*, Clean Air Report, Jan. 13, 1994 (as one step towards obtaining the fifteen percent reduction in VOCs by 1996, the Texas Natural Resources Conservation Commission (TNRCC) proposed a 6.5 psi standard for Reid Vapor Pressure RVP for El Paso. Chevron proposed an RVP of 7.0 which was rejected by EPA and Texas was to hold public hearings on the additional cost of gasoline if a RVP of 6.5 is to be achieved. One Texas official said if public resistance was too great, Texas would simply require El Paso to participate in the reformulated gas program).

59 CAA § 182(c)(10), 42 U.S.C. § 7511a(c)(10); (serious nonattainment areas are required to reduce the ratio of total emission reductions of volatile organic compounds to total increase emissions of such air pollutant by at least 1.2 to 1).

60 CAA, § 186, 42 U.S.C. § 7512.

61 *Points of the Compass*, Christian Science Monitor, Jan. 6, 1993 at 11. (El Paso began selling oxygenated gasoline last winter (1992), a year before the new Clean Air Act required it); [hereinafter POINTS OF COMPASS].

combustion and occurs more frequently during the winter months from "cold engine" starts. Oxygenated fuel contains more oxygen which burns more readily at lower temperatures reducing the mobile source's carbon monoxide output.

Finally, as a moderate PM_{10} nonattainment area,[62] El Paso must implement new and modified major stationary source review, attainment demonstration, and additional RACM for existing affected stationary and area sources.[63]

Despite all of these measures, there is considerable doubt that El Paso will achieve the necessary reductions to fulfill the SIP requirements, but this is not due to any fault of its own.

Juarez, El Paso's sister city, has a population of 1.3 million--nearly three times the size of El Paso--but socioeconomically Juarez's inhabitants are decades behind in terms of wages, working conditions, basic living conditions, and are among the poorest in Mexico.[64] The automobiles are twice as old as the U.S. average and usually are devoid of any emission-control devices which in part explains the El Paso- Juarez air pollution.[65] In order to keep warm without electricity, thousands of Juarez's homes burn fires fueled by wood or cardboard.[66] In the morning, buses carry the workers to maquiladoras over miles of unpaved streets and roads sending dust into the air. Archie Clouse, director of the El Paso district for the Texas Air Control Board, says, "The road to clean air lies through Juarez, Mexico."[67]

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62 CAA § 188, 42 U.S.C. § 7513.

63 CAA § 189, 42 U.S.C. § 7513a.

64 J. Michael Kennedy, *The Free Trade Dilemma: The Environmental Costs of a U.S.-Mexico Pact,* L.A. Times, Nov. 20, 1991, A1.

65 *Id.*

66 *Id.*

67 POINTS OF COMPASS, *supra* note 61.

El Paso's air pollution from Mexico will certainly make it extremely difficult to not only comply with the SIP requirements but may as well sabotage its efforts to attain NAAQS under the Clean Air Act. The 1990 Clean Air Act Amendments included section 179B[68] entitled "International Border Areas," that authorizes special treatment of areas coping with transboundary pollution. If a state can demonstrate to the Administrator's satisfaction that their state implementation plan (SIP) meets all the requirements under the Act and the SIP would be adequate to achieve attainment but for emissions emanating from outside the United States, the Administrator must approve the plan.[69] Based on this same principle, an ozone, carbon monoxide, and particulate nonattainment area such as El Paso is also excused from the provisions of Clean Air Act sections 181,[70] 186,[71] and 188.[72]

If the answer to clean air for El Paso lies through Juarez, then it will rely substantially on Mexico's environmental laws and their enforcement.

IV. MEXICAN ENVIRONMENTAL LAW

Mexico, rightly or wrongly, has been accused of being a "pollution haven" for two reasons: first, the perception that Mexico lacks an environmental statutory and regulatory regime comparable to the United States and secondly, if the laws and regulations do exist, they are simply not enforced. In reality, Mexico has an environmental statutory and regulatory regime similar to the United States's and enforcement is becoming more effective.

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68 42 U.S.C. § 7509a.

69 *Id.*

70 42 U.S.C. § 7509a(b).

71 42 U.S.C. § 7509a(c).

72 42 U.S.C. § 7509a(d).

The Mexican environmental legal regime is established pursuant to Articles XXV and XXVII of the Mexican Constitution.[73] Article XXV calls specifically for environmental protection, while Article XXVII refers directly to "all natural resources."[74]

In 1988, Mexico enacted its first comprehensive environmental law, the General Law on Ecological Equilibrium and Environmental Protection[75] (the General Law) protecting air, water, and soil. While only six years old, the General Law has substantial comparability to United States environmental law[76] and is evolving quickly. The General

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[73] ENVIRONMENTAL PROTECTION AGENCY, EVALUATION OF MEXICO'S ENVIRONMENTAL LAWS, REGULATIONS AND STANDARDS (Nov. 5, 1993) 4 [hereinafter EPA EVALUATION].

[74] *Id.*

[75] Ley General Equilibrio Ecológico y la Protección al Ambiente.

[76] EPA issued an interim report entitled, *Mexican Environmental Laws, Regulations and Standards: Preliminary Report of EPA Findings* (1991), [hereinafter MEXICAN ENVIRONMENTAL LAWS] which concluded:

> "...Mexico's environmental laws, regulations and standards are in many respects similar to those in the United States. The 1988 General Law of Ecological Balance and Environmental Protection ("General Ecology Law") embodies many principles and approaches similar to ours ... The regulations and technical standards implementing the Mexican law are generally comparable to their counterparts in the United States, although each regime includes provisions that the other lacks. To the extent that differences in scope are due to the early stage of development of Mexico's program, it would be premature to draw too many conclusions about overall stringency or comparability."

This interim report was followed by an EPA comparison of United States and Mexican environmental standards in a number of industrial sectors in each of the four principal media areas: water, air, hazardous waste, and pesticides and industrial chemicals. With few exceptions, EPA has concluded that many of the Mexican environmental standards in the principal media areas are comparable to U.S. standards and that, overall, the two regulatory regimes are designed to achieve comparable levels of environmental protection; *but see State Department Meets With Mexico About Coal-Fired Plant South of Border*, Daily Report for Executives (BNA) (Sep. 24, 1993) (one of the few areas that the two laws differ is with sulfur dioxide emissions controls for coal-fired power plants such as Carbon I and Carbon II located in Piedras Negras which may have an effect on visibility in Big Bend National Park).

Law, like many United States environmental laws, requires promulgation of additional regulations[77] and implementation of technical ecological norms (NTEs)[78] in order to provide standards. While the regulations provide general policy guidance, the NTEs state specific numeric criteria that must be met.[79] Once promulgated, the NTEs must then undergo a cost-benefit analysis under the Federal Law on Measurement and Standardization.[80] As of March 1993, eighty-three NTEs and ecological criteria (sixteen of which address air pollution) had been developed and another one hundred twenty are scheduled to be presented for approval by the end of 1994,[81] some of which will further regulate air pollution.

The development of Mexican environmental standards and their enforcement fall within the jurisdiction of the Secretariat of Urban Development and Ecology (SEDUE) which in 1992 was reorganized under a new Mexican agency -- the Secretariat of Social

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77 EPA EVALUATION, *supra* note 73 at 5 n.6 (In Mexico, regulations have a status similar to statutes in the U.S., and they must be signed by the president of the country).

78 BORDER PLAN, *supra* note 1, at A-1.

79 REGULATIONS AND ENFORCEMENT, *supra* note 7, at 5-6.

80 EPA EVALUATION, *supra* note 73 at 7-8 (The Federal Law on Measurement and Standardization was enacted in 1992 and requires that new and existing technical standards designed to protect human safety and safety, animal health, vegetation, the environment, or natural resources be subjected to a cost-benefit analysis. The cost-benefit analysis requires the promulgating agency to provide: (1) a description of the potential benefits of the norm, including those benefits that cannot be quantified in monetary terms, and identification of the specific population within Mexico that will benefit from the norm; (2) a description of the potential costs of the norm, including any adverse effects that cannot be quantified in monetary terms, and the identification of those segments of the population likely to bear the costs; (3) a calculation of the net benefit to society of adopting the norm, including an evaluation of the beneficial effects that cannot be expressed in monetary terms; and (4) a justification of why the norm, among the other possible alternatives, will allow the desired goal to be achieved at the highest net benefit feasible).

81 *Id.* at 5 n.8 (EPA had received previously information that 125 new environmental norms were to be issued by the end of 1994 and has requested verification of the number of new norms from SEDESOL).

Development (SEDESOL).[82] SEDESOL's environmental functions are divided between two autonomous agencies, the National Institute of Ecology and the Office of the Attorney General for Protection of the Environment.[83] The National Institute of Ecology is primarily responsible for design, implementation, and assessment of environmental programs and policies, and the Attorney General is charged with ensuring enforcement of the environmental standards and regulations through inspections and sanctions for noncompliance.[84]

Hazardous waste is also addressed by the General Law although Mexico is still developing regulations and enforcement standards that implement hazardous waste requirements similar to those in the United States. Hazardous waste regulations implementing the General Law, like those for RCRA,[85] provide for: (1) federal classification of hazardous waste; (2) a requirement that hazardous waste be reported and accompanied by a manifest when transported; (3) federal standards for generators, transporters, and storage and disposal facilities; (4) registration of facilities through a permitting program; (5) authorization of state programs; (6) inspection and enforcement to ensure compliance with environmental regulations; and (7) civil and criminal penalties for violators, including fines and imprisonment.[86] While the General Law and RCRA are substantially similar, there are differences as well. The General Law

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82 All references to SEDUE shall be SEDESOL.

83 REGULATIONS AND ENFORCEMENT, *supra* note 7, at 6.

84 *Id.*

85 Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6933.

86 U.S. GENERAL ACCOUNTING OFFICE, HAZARDOUS WASTE: MANAGEMENT OF MAQUILADORAS' WASTE HAMPERED BY LACK OF INFORMATION (1992), at 4 [hereinafter HAZARDOUS WASTE].

does not impose restrictions on land disposal of hazardous waste, regulate leaking underground storage tanks or provide for the cleanup or hazardous waste sites.[87]

Maquiladoras are obligated under the General Law to return their hazardous waste to the country of origin but this was originally provided for in a 1983 "Maquiladora Decree," which was followed by a 1986 United States agreement to readmit maquiladora hazardous waste. While the shipment of hazardous materials and wastes are to follow the registration and manifest procedure set out above, the movements of these wastes are inadequately documented, illegal disposal is commonplace, and these wastes pose a substantial threat of contamination to surface and groundwater and air pollution due to evaporation and burning.[88]

A unique feature of the General Law is its requirement that SEDESOL give advance authorization for public or private actions that could cause adverse ecological effects or violate federal environmental regulations and standards.[89] Prospective owners and/or operators of such activities are required to conduct preconstruction environmental impact appraisals (EIA) or submit a form to SEDESOL and obtain a determination that an EIA is not required.[90] EIAs analyze a proposed project's potential environmental impact,

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87 *Id* at 4; *See also* REGULATIONS AND ENFORCEMENT, *supra* note 7 at 6-7.

88 BORDER PLAN, *supra*, note 1, at III-20.

89 U.S. GENERAL ACCOUNTING OFFICE, U.S.-MEXICO TRADE: ASSESSMENT OF MEXICO'S ENVIRONMENTAL CONTROLS FOR NEW COMPANIES, (1992), at 10 [hereinafter NEW COMPANIES].

90 *Id.* at 10-11 (To initiate this environmental approval process, a prospective new company owner/operator must first submit an EIA or an "Informe Preventivo" form, a standard form filled out by companies whose environmental impact may be minimal and may not need an EIA. In practice, if contacted by a company that thinks it may need to submit an EIA, SEDESOL tells companies to submit a "Dictamen de Viabilidad," but not to prepare an EIA until SEDESOL determines that an EIA is needed. The "Dictamen de Viabilidad" is a summary describing the planned location and operations. Within 15 days of receipt, SEDESOL evaluates the information to determine (1) whether the intended

provide possible mitigation measures to minimize adverse effects , and ensure compliance with other environmental laws.[91] While the United States's NEPA[92] is a comparable statute with similar requirements, it is only triggered by major federal actions significantly affecting the quality of the human environment.[93]

Once an EIA or risk assessment is completed or a determination is made that an EIA is not necessary, then a prospective owner/operator can obtain the necessary operating permits which will then subject it to the Mexican inspection regime. For new maquiladora companies, the Secretariat of Commerce and Industrial Promotion (SECOFI) is responsible for ensuring that they notify SEDESOL and initiate the EIA process before giving them permission to operate a maquiladora in Mexico.[94] But again the breakdown in this system is not with the statutory or regulatory provisions; rather, it is with enforcement.[95]

SEDESOL has primary authority for the implementation and enforcement of the General Law, but--at the same time (like many of the United States environmental laws delegating program authority to states)--the individual Mexican states may adopt and impose stricter state standards than the federal standards.[96] Since the General Law was

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facility violates any local, state, or federal land use restrictions, including the system of national ecological zones, and (2) whether the environmental impact is significant enough to warrant an EIA and risk study. Companies originally submitting a "Dictamen de Viabilidad" will be requested to submit an "Informe Preventio" if SEDESOL determines they will not significantly affect the environment. Based on this evaluation, SEDESOL issues a letter that either disallows the project, approves the project without an EIA or risk study, or specifies the type of EIA and risk study required).

91 *Id.*

92 National Environment Policy Act of 1969, 42 U.S.C. §§ 4321 to 4370d [hereinafter NEPA].

93 *Id.* at § 102, 42 U.S.C. § 4332.

94 NEW COMPANIES, *supra* note 89 at 12.

95 *See* Section VI, *infra*.

enacted in 1988, nineteen of the Mexican states, including the border area States of Coahuila, Sonora, Nuevo Leon, and Tamaulipas, have adopted environmental statutes,[97] but enforcement of the environmental statutes has been primarily the responsibility of SEDESOL.

V. MEXICAN AIR POLLUTION LAW

The General Law, articles 110 through 116, provides the legal framework for Mexico's current air quality program.[98] While SEDESOL has the primary implementation responsibility through issuance of technical emission and ambient standards, the individual states and municipal authorities are permitted to enter into agreements with industry and require the installation of pollution control equipment.[99] In addition, state and local governments are responsible for conducting stationary source emission inventories, establishing vehicle inspection programs, establishing air monitoring networks, regulating traffic and emissions from nonfederal public transportation vehicles, taking measures to avoid serious air pollution, and imposing sanctions for violations of state and local laws.[100]

In order to implement the General Law, Mexico has adopted two regulations related to air pollution and numerous technical standards under those two regulations.[101] The broader of the two regulations contains five chapters covering general provisions, stationary source controls, mobile source controls, establishment of a national air quality

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96 BORDER PLAN , *supra* note 1, at A-12.
97 BORDER PLAN, *supra* note 1, at A-11.
98 EPA EVALUATION, *supra* note 73 at 24.
99 *Id.*
100 *Id.*
101 *Id.*

monitoring system, and enforcement, including sanctions.[102] The second regulation is specifically designed to address Mexico City's air pollution, which is the worst in the world, through regulation motor vehicle use, traffic, motor vehicle emissions, and vehicle inspections.[103]

Mexican and United States air pollution laws are substantially similar in that they both require adoption of ambient air quality standards for specific pollutants. Mexico has issued such standards, called "maximum permissible levels" (MPLs) for ozone, carbon monoxide, sulfur dioxide, nitrogen oxide, total suspended particulates, and lead.[104] The same pollutants are regulated under the Clean Air Act except particulate matter which was replaced by PM_{10} , and the Mexican MPLs are set at the same or nearly identical levels as the United States NAAQS.[105] Similarly, both the Mexican and United States air pollution programs require their implementing agencies to conduct emissions inventories, monitoring, establish emission limits and technology-based standards for certain individual source types;[106] but unlike the United States, Mexico lacks a nationwide air monitoring system and, while one exists in Juarez, it was only made possible through an EPA project.[107] While substantial similarities exist between the Mexican and United States air pollution laws and regulations, there are marked differences as well.

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102 *Id.*

103 *Id.*

104 United States Trade Representative [USTR], *The NAFTA: Report On Environmental Issues* (November 1993), at 40 [hereinafter ENVIRONMENTAL ISSUES].

105 *See* Table 1, *supra*.

106 EPA EVALUATION, *supra* note 73 at 10.

107 Maggie Rivas, *Juarez Finding Success In Battling Pollution; Man In Charge Angers Some Industrialists, Ecology Officials*, Dallas Morning News (Mar. 13, 1994), A45, (as part of a U.S. Environmental Protection Agency project, Juarez has four air quality monitoring stations and no personnel to collect the data from them. At least once

First, the United States's NAAQS provides for both short and long term averaging periods for some pollutants which provide protection against both acute and chronic exposure levels of air pollution.[108] Second, the Clean Air Act provides for the establishment of secondary ambient air quality standards required to protect the public welfare[109] from any known or anticipated adverse effects associated with the presence of an air pollutant in the ambient air but we do not actually use them in any meaningful way.[110] Finally, the Clean Air Act 's Prevention of Significant Deterioration (PSD) Program[111] limits the amount of degradation permitted in attainment areas.

While sharing a common approach in measuring criteria pollutants, Mexico and the United States differ on the method of achieving attainment of the ambient standards. In the United States, the states are responsible, with EPA oversight, for assuring attainment of the NAAQS. The states develop SIPs which are submitted to EPA for approval.[112] Attainment and maintenance of the applicable standards are demonstrated through air quality modeling[113] which reflect ambient air decreases and levels of the criteria pollutants. In contrast, Mexico relies on a source permitting program instead of SIP program but

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a week, Mr. Reynoso's staff [El Paso's City-County Health and Environmental District Quality Program] drives across the international border to collect filters and other information from the Juarez air monitoring sites) [hereinafter RIVAS].

108 40 C.F.R. §§ 50.2-50.12 (1992).

109 CAA § 301(h), 423 U.S.C. § 7602(h) ("welfare" includes effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants).

110 CAA § 109, 42 U.S.C. § 7409.

111 CAA Subchapter I, Part C, §§ 160-169B, 42 U.S.C. §§ 7470-7492.

112 CAA § 110, 42 U.S.C. § 7410.

113 *Id.*

federal oversight is virtually nonexistent largely due to the lack of adequate monetary and technical resources. The 1990 CAAA are also going to a permit program.

Like the United States, Mexico has developed a system for further restricting emissions in chronically polluted areas, called "critical zones." A critical zone in Mexico is defined as a zone with high concentration of pollutants and two critical zones are located on the U.S.-Mexico border -- Tijuana and Juarez.[114]

A. Stationary Source Controls

Mexico controls stationary source air emissions through source registration and a permitting program similar to the Clean Air Act's Subchapter V,[115] although less than ten percent of all industrial sources hold permits.[116] Assuming that emission standards have been established for that source category,[117] they are incorporated into the permit.[118] Mexico's NTEs to control stationary source emissions resemble the Clean Air Act's new source performance requirements[119] establishing maximum permissible emission levels for the various pollutants per unit of raw material or production. The Mexican standards, unlike the Clean Air Act, apply to both new and existing sources.[120]

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114 EPA EVALUATION, *supra* note 73, at 28.

115 CAA §§ 501-507, 42 U.S.C. §§ 7661f.

116 EPA EVALUATION, *supra* note 73, at 28.

117 *Id.* at 28-29 (Mexico is in the process of sunsetting its existing technical norms and adopting new standards. Thus, only a few stationary standards exist, including source-specific standards for sulfuric acid plants, cement plants, and coal-fired power plants, as well as general PM limits for sources not otherwise covered by a source-specific standard).

118 *Id* at 28.

119 CAA § 111, 42 U.S.C. 7411.

120 EPA EVALUATION, *supra* note 73, at 28.

Once a new source has a permit, it must submit annual reports which include test data. The permit must be modified if changes are made in the source, but in the absence of source modification, the permit duration is unclear. SEDESOL reviews the submitted data and, if a violation appears to have occurred, may inspect the source and close it, partially or completely, temporarily or permanently, or impose a fine.[121]

Concerning hazardous air pollutants, Mexico's law does not contain any program or provision similar to the Clean Air Act's,[122] although it does appear to authorize the development of such standards. Mexican law addresses toxic emissions by requiring prior authorization for the emission of hazardous air pollutants.[123]

B. **Mobile Source Controls**

Mexico's mobile source control program is more comparable to the Clean Air Act since both rely on similar approaches, such as tailpipe emission standards, vehicle inspection and maintenance, fuel content requirements, and transportation controls. The difference between the two programs lie in the extent to which each is implemented and the stage of development of the various implementing programs.[124]

An ecological standard issued in 1988 establishes tailpipe emission standards for new cars.[125] The new car standard required decreasing emissions beginning in 1989, with

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121 ENVIRONMENTAL PROTECTION AGENCY, MEXICAN ENVIRONMENTAL LAWS, REGULATIONS AND STANDARDS, PRELIMINARY REPORT OF EPA FINDINGS (1991), 12 [hereinafter PRELIMINARY EPA EVALUATION].

122 *See* CAA § 112, 42 U.S.C. 7412.

123 EPA EVALUATION, *supra* note 73 at 30.

124 *Id.*

125 PRELIMINARY EPA EVALUATION, *supra* note 121 at 13.

dramatic emissions beginning in 1991, apparently envisioning a phasing-in of cars with catalytic converters.[126] This standard will effectively require catalytic converters to be installed on all cars that are manufactured in Mexico in 1993 and afterwards.[127] The 1993 MPL for hydrocarbons (HC), carbon monoxide, and nitrogen oxides are equivalent to current U.S. standards under the CAAA for light duty vehicles.[128]

While these measures are certainly laudatory, certain issues relating to the effectiveness of these provisions remain unclear: Mexico's test procedures for determining compliance with the emissions standards;[129] whether cars must meet the standards for a specified "useful life;"[130] whether there are warranty and recall provisions;[131] and whether there are any restrictions on the sale of "after-market parts" that could affect emissions performance if originally equipment is replaced.[132]

Vehicular inspection and maintenance programs are critical to the success of any emissions control program. Twenty-two cities in Mexico now have vehicle inspection stations,[133] and in 1993 Juarez began their program inspecting 148,000 of its 319,000 cars.[134]

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126 *Id.*

127 *Id.*

128 EPA EVALUATION, *supra* note 73 at 31.

129 *Id*; *see also* CAA § 206, 42 U.S.C. §7526 (new motor vehicle or new motor vehicle engines are required to be tested ensuring they meet the emission standards of CAA § 202).

130 EPA EVALUATION, *supra* note 73 at 31; *see also* CAA § 202(g), 42 U.S.C. § 7521(g), (useful life is defined as 10 years or 100,000).

131 CAA § 207, 42 U.S.C. § 7541.

132 EPA EVALUATION, *supra* note 73 at 31.

133 PRELIMINARY EPA EVALUATION, *supra* note 121 at 13.

134 RIVAS, *supra* note 107.

In 1991, SEDESOL assumed regulatory control of fuel content from PEMEX, the nationally-run petroleum company, and regulates fuels and fuel additives similar to EPA's authority under the Clean Air Act.[135] Leaded gasoline is still the most common gasoline available in Mexico although unleaded gasoline is available in larger cities and main truck lines. While the use of unleaded gasoline will substantially improve air quality, two factors will continue to work against its everyday use -- price and availability. In December 1991, PEMEX cut the price of unleaded gasoline in half, but it is still more expensive than leaded gasoline and--as previously discussed--not available country-wide.[136]

Even though Mexico's environmental laws and specifically its air pollution laws are similar to the United States's and despite recent improvements, it has failed to make a significant impact on Mexico's environmental problems primarily due to its lack of effective enforcement.

VI. MEXICO'S ENVIRONMENTAL ENFORCEMENT PROGRAM

In examining the Mexican environmental enforcement system, you cannot divorce it from Mexico's underlying legal system which is based on a civil law rather than a common law system as in the United States. The civil law system emphasizes administrative resolution or the negotiated settlement of disputes. In contrast, the United States's common law system emphasizes, more and more it seems, the role of litigation and the art of negotiation has seemingly been forgotten.

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135 CAA § 211, 42 U.S.C. § 7545.

136 EPA EVALUATION, *supra* note 73 at 31.

Mexican enforcement measures generally involve one or more of the five mechanisms: (1) inspections; (2) plant closings; (3) the negotiation of compliance agreements, particularly in response to a temporary plant closing; (4) the posting of a surety bond to secure compliance with an agreed or ordered schedule of compliance; and (5) the imposition of fines.[137]

SEDESOL's primary enforcement methods appear to be plant inspections and closures.[138] From 1988 through 1990, SEDESOL conducted 6,418 inspections, resulting in 1,068 plant closings.[139] From January through August 1991, SEDESOL performed 1,144 inspections and closed about 706 plants.[140] According to SEDESOL officials, 120 of these 1,144 inspections were of maquiladoras, resulting in fifty-six instances in which SEDESOL temporarily closed down part of the maquiladoras' operations.[141] From September 1992 through November 1993, SEDESOL is reported to have conducted

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137 ENVIRONMENTAL ISSUES, *supra* note 104 at 37.

138 REGULATIONS AND ENFORCEMENT, *supra* note 7 at 7 (Mexico's system for implementing and enforcing its environmental protection program varies from new and existing facilities. The primary components of the system are permits specifying the operating requirements and inspections to ensure compliance. These components are similar to those used in the United States.

Owners and operators of existing facilities planning new modifications that may adversely affect the environment are also required to submit an EIA and risk assessment, if applicable. After approval of the EIA and risk assessment, a permit to construct the facility is issued. Before beginning operation, owners and/or operators of new facilities must also obtain separate permits or authorizations for air emissions, water discharges, and handling of hazardous waste, as applicable. Upon completion of this process, they receive an operating license or permit and are subject to future inspection to ensure that they remain in compliance); *but see* NEW COMPANIES, *supra* note 89 at 3 (none of the six new U.S. majority-owned maquiladoras in the sample that established plants in Mexico between May 1990 and July 1991 had prepared an EIA or had obtained a letter from SEDUE stating that an EIA was not required. In addition, SEDUE allowed four of the six companies to operate before obtaining operating permits).

139 HAZARDOUS WASTE, *supra* note 86.

140 *Id.*

141 *Id.*

15,897 inspections with a rate of closure due to severe irregularities during the first three months peaking at 42 percent.[142] While these statistics are impressive, the basis for the any closure and corresponding corrective action is missing. The temporary closure of these plants without any substantiation of environmental corrective action surely would cynically boost claims of environmental toughness while maintaining "business as usual." At the same time, SEDESOL's recent aggressive inspection program will achieve two milestones towards an effective environmental regulatory program. First, it will identify the total number of facilities subject to regulation, and--secondly--it will ultimately lead to a permitting system similar to the Clean Air Act's Subchapter V permitting program.[143]

SEDESOL's increased inspection activity has, not surprisingly, corresponded with its increased funding. SEDESOL's budget increased from $5 million in 1988 to $39 million in 1991[144] and the number of inspectors grew from 19 to 113 .[145] As of October 28, 1993, the number of inspectors has grown to 460 with 130 of the inspectors concentrated in the border area.[146] Last fall, the United States announced that under the terms of NAFTA's environmental side agreement the United States will commit $225 million a year for four years which will be matched, dollar-for-dollar, by Mexico.[147]

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142 LABORDE, *supra* note 22.

143 CAA § 501-507, 42 U.S.C. § 7661-7661f.

144 REGULATIONS AND ENFORCEMENT, *supra* note 7, at 8.

145 HAZARDOUS WASTE, *supra* note 86, at 5-6.

146 ENVIRONMENTAL ISSUES, *supra* note 104.

147 Comments of Carol Browner, Administrator, EPA to the National Press Club (Nov. 2, 1993) (transcript available in LEXIS, Nexis Library, World File) (Administrator Browner met with SEDESOL Secretary Colosio in Ensenada, Mexico, and they announced plans to begin work in early 1994 on a more comprehensive Border Action Plan continuing and expanding the work under the Border Plan, *supra* note 1); *see also* Lee, *supra* note 6, at A8 (the package includes $2 billion presently in President Clinton's budget, a $2 billion World Bank loan to Mexico and $4 billion in North American Development Bank funds, to be contributed by both Mexico and the United States. The

With the growth of Mexico's inspector ranks, the number and type of inspections have changed as well. SEDESOL inspections, like the United States's inspections, are turning to a multimedia approach.[148] Admittedly, Mexico's multimedia inspections are largely only visual,[149] but even a simple multimedia inspection is not only more comprehensive but more holistic in its approach. If an inspector detects environmental violations, this may lead to temporary or permanent plant closure. But unlike the United States where plant closures are the usually the choice of last resort only after negotiations have failed, Mexico will summarily close a plant and then negotiate the necessary compliance agreement before permitting reopening. Needless to say this "stick" of plant closure leads to many pro-government and pro-environment compliance agreements.[150]

Comparatively, under the Clean Air Act,[151] unless there is a showing of imminent and substantial endangerment to public health or welfare, or the environment, an immediate closure of facility is unlikely until administrative due process requirements have been fulfilled. The administrative due process requirements vary depending on the type of administrative enforcement tool selected by EPA. For example, if a facility receives a field citation,[152] which is designed for minor violations, it may elect to pay the penalty assessment or request a hearing on the field citation. If the facility requests a hearing and receives an unfavorable ruling, then it may seek review of the assessment in federal district

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funds pegged mostly are for air pollution and water treatment programs.)

148 *See* Peter J. Fontaine, *EPA's Multimedia Enforcement Strategy: The Struggle to Close the Environmental Compliance Circle*, 18 Colum. J. Envtl. L. 31 (1993).

149 ENVIRONMENTAL ISSUES, *supra* note 104.

150 *See* LABORDE, *infra* note 154.

151 CAA § 303, 42 U.S.C. § 7603, *see also* CAA § 113(b), 42 U.S.C. § 7413(b) (which also authorizes the Administrator to commence a civil action for a permanent or temporary injunction).

152 CAA § 113(d)(3), 42 U.S.C. 7413(d)(3).

court which acts as an appellate court and may not set aside or remand the assessment unless there is not substantial evidence in the record, taken as a whole, to support the finding of a violation or the penalty assessment constitutes an abuse of discretion.[153] The more serious the administrative enforcement action, the greater the administrative due process protections.

Ultimately, like EPA, the majority of SEDESOL's enforcement actions result in negotiated compliance agreements involving not only an appropriate fine but also environmental audits.[154] Under current Mexican law, SEDESOL is permitted to impose fines equivalent to between 20 and 20,000 times the daily minimum wage in the Federal District of Mexico (up to approximately $85,000, as of January 1993).[155] By comparison, the Clean Air Act provides for civil administrative penalty of up to $25,000 per day of violation and limited to a maximum of $200,000[156] or civil judicial penalty of $25,000 per day for each violation and limited only by the statute of limitations.[157] But again, under a negotiated compliance agreement the maximum authorized penalties may have very little resemblance to what is ultimately recovered.

One tool of Mexican environmental enforcement that is unparalleled in United States law is administrative detention, which can result in the deprivation of a corporate

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153 CAA § 113(d)(4), 42 U.S.C. 7413(d)(4).

154 LABORDE, *supra*, note 22 (of the 200 facility closures, 62 percent were able to overcome their environmental problems by acquiring new technology or new equipment and agreeing to conduct environmental audits). *See also* Christine Hanley, *United Technologies Fined For Pollution Violations*, Phil. Enq., Aug. 24, 1993 (in addition to paying $5.3 million in fines for widespread violations of the Resource Conservation and Recovery Act and Federal Water Pollution Control Act, United Technologies also agreed to perform one of the most extensive environmental audits ever conducted).

155 EPA EVALUATION, *supra* note 73 at 90.

156 CAA § 113(d), 42 U.S.C. § 7413(d).

157 CAA § 113(b), 42 U.S.C. § 7413(b).

officer's freedom for up to thirty-six hours, but more commonly it is applied for several hours on a daily basis until an agreement is reached on a compliance plan and schedule.[158]

Finally, Mexican environmental regulations do provide for criminal prosecutions which--although rare--have been increasing, particularly in cases involving hazardous waste disposal, where disposed wastes may provide clear evidence of patently criminal activity.[159] In a recent case, an operator of a solvent recycling facility was charged with mismanagement and illegal disposal of wastes brought on-site despite inadequate recycling capacity.[160] The operator was arrested, placed in custody, and released on a $1 million bond securing his cooperation in cleaning up the waste.[161]

Singularly, neither the United States nor Mexico is capable of stopping the flow of transboundary pollution. It will require a sustained, cooperative effort between the two nations and while there have been numerous past attempts to forge an effective binational commission to address the border needs, none have reached the level that will be necessary to address today's environmental needs. That is not to say it cannot be done, but only if the lessons learned from past efforts are built upon. In 1990, the initiative for such an attempt was made when the two countries agreed on the the Integrated Environmental Plan for the Mexican-U.S. Border Area.

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158 ENVIRONMENTAL ISSUES, *supra* note 104 at 43.

159 *Id.*

160 *Id.*

161 *Id.*

VII. U.S.-MEXICO ENVIRONMENTAL COOPERATION

A. 1983 United States-Mexico Border Environment Agreement (La Paz Agreement)

The United States and Mexico cooperation on environmental issues can be traced back a century to agreements regulating the use and quality of transboundary rivers.[162] In 1944, the two countries entered into the Treaty on the Utilization of Waters of the Colorado and Tijuana Rivers, and the Rio Grande.[163] This treaty replaced the International Boundary Commission with the International Boundary and Water Commission (IBWC) which regulated the rights and duties of each nation. The IBWC was given authority to examine and settle boundary demarcation disputes, construct water projects pertaining to water quality, conservation, and utilization, and dam construction and flood control of the Tijuana, Rio Grande, New, and Colorado rivers.[164] Even though the IBWC is responsible for undertaking "any sanitary measures or works which may be mutually agreed upon by the two Governments"[165] and to "give preferential attention to the solution of all border sanitation problems,"[166] it has been largely ineffective.

First, the treaty failed to make any commitment to protecting the environment.[167] Secondly the IBWC has construed their powers rather narrowly in order to avoid political controversy. Finally, the IBWC lacks enforcement powers.[168]

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162 UNITED STATES TRADE REPRESENTATIVE INTERAGENCY TASK FORCE, REVIEW OF U.S.-MEXICO ENVIRONMENTAL ISSUES 53 (1991) (on file with the Environmental Protection Agency Library, Waterside Mall, Washington, D.C.).

163 Treaty Between the United States of America and Mexico Relating to the Utilization of the Waters of the Colorado and Tijuana Rivers, and of the Rio Grande, Feb. 3, 1944, 59 Stat. 1219, T.S. No. 994, 3 U.N.T.S. 313 [hereinafter WATER TREATY].

164 REVIEW OF U.S.-MEXICO ENVIRONMENTAL ISSUES, 1992, [USTR], p. 9 [hereinafter PRELIMINARY USTR REVIEW].

165 WATER TREATY, *supra* note 163, Art. 2.

166 *Id.* art 3.

167 Mark A. Sinclair, *The Environmental Cooperation Agreement Between Mexico*

As a result of the Maquiladora Program and the increasing population along the border, the environmental degradation accelerated through the 1970s and 1980s. In 1983 Mexico and the United States signed a landmark agreement -- the 1983 Agreement between the United States and Mexico on Cooperation for the Protection and Improvement of the Environment in the Border Area -- which committed each country to cooperatively addressing the environmental issues affecting the border area and is commonly referred to as the La Paz Agreement.[169]

The La Paz Agreement and its several implementing Annexes provides a framework for cooperation between the United States and Mexico on controlling sources of pollution that affect air, land, and water in a 100 kilometer area on each side of the international boundary.[170] EPA and SEDESOL were designated as national coordinators[171] to coordinate and monitor implementation of the Agreement and to convoke meetings of experts for the purposes of coordinating national programs to protect the quality of the border environment.[172] EPA and SEDESOL have designated five work groups of technical experts to address issues involving air pollution, water pollution, hazardous waste, environmental accidents, and enforcement.[173] While the La Paz Agreement was certainly unprecedented in addressing border area environmental issues, it still had several weaknesses.

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and the United States: A Response to the Pollution Problems of the Borderlands, 19 Cornell Int'l L.J. 87, 102 (1986) [hereinafter SINCLAIR].

168 *Id.*

169 22 I.L.M. 1025 (1983) [hereinafter LA PAZ AGREEMENT].

170 PRELIMINARY USTR REVIEW, *supra* note 164, at 11.

171 LA PAZ AGREEMENT, *supra* note 169, Article 8.

172 *Id.*, Articles 11 and 6.

173 PRELIMINARY USTR REVIEW, *supra* note 164, at 11.

While the Agreement refers to pollution, it fails to define it.[174] The Agreement relies upon annexes[175] to implement its broad environmental policy which itself is open to interpretation by either party and links each party's remedial project action to national laws, regulations, and policies.[176] Consequently, the parties may disagree on what constitutes pollution or even assuming pollution exists, it does not violate any domestic law, regulation, or policy and therefore no action is necessary.

Since 1983, five implementing annexes have been agreed upon by Mexico and the United States. Annex I (1985) concerns border sanitation problems at Tijuana/San Diego.[177] Annex II (1985) establishes the framework for the "United States-Mexico Joint Contingency Plan" regarding polluting accidents along the joint inland international inland boundary by discharges of hazardous substances.[178] Annex III (1986) addresses transboundary shipments of hazardous waste and substances.[179] Annex IV (1987) concerns the problem of transboundary air pollution caused by copper smelters along the border by establishing maximum sulfur dioxide emissions limits for both new and existing copper smelting facilities.[180] Annex V (1986) creates specified "study areas" within which Mexico and the U.S. have agreed to collect data on air pollutant concentrations, air

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174 LA PAZ AGREEMENT, *supra* note 169, Art. 2 which provides: "The Parties undertake, to the fullest extent practical, to adopt the appropriate measures to prevent, reduce and eliminate sources of pollution in their respective territory which affect the border area of the other. Additionally, the Parties shall cooperate in the solution of the environmental problems of mutual concern in the border area, in accordance with the provisions of this Agreement."

175 *Id.* Art. 3.

176 *Id.* Art. 7.

177 PRELIMINARY USTR REVIEW, *supra* note 164, at 11.

178 *Id.* at 12.

179 *Id.* at 12.

180 *Id.* at 13.

pollutant transport, and the physical mechanisms facilitating this transport.[181] Recently, the State of Texas asked President Clinton to propose an Annex VI creating an International Air Quality Management District (IAQMD) encompassing El Paso County, Doña Ana County, New Mexico, and the greater metropolitan area of Ciudad Juarez, Chihuahua.[182] At the time Texas proposed the IAQMD, the NAFTA debate was raging in Congress and no formal action was taken, but an IAQMD certainly would be consistent with the international cooperative efforts that are the only way to bring about a resolution to transboundary air pollution.

While the La Paz Agreement and its annexes made limited progress in the control of transboundary pollution, there was no comprehensive plan to the environmental issues facing the border area until 1990.

B. The Integrated Environmental Plan for the Mexican-U.S. Border Area.

In June 1990, the United States and Mexico issued a joint statement supporting negotiation of a free trade agreement.[183] President Bush notified Congress in September 1990 of his intent to negotiate such an agreement, and on November 27, 1990, President Bush and Mexican President Carlos Salinas de Gortari met in Monterrey, Mexico.[184]

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181 *Id.* at 13.

182 *Texas Proposes Adding U.S.-Mexico Border Air District To La Paz Agreement*, Int'l Env't Rep. (BNA) 649 (Sep. 8, 1993) (specific purposes of the IAQMD include: (1) developing a consolidated air emissions inventory and ambient air quality database; (2) recommending joint pollution control strategies to the U.S. and Mexican governments; and (3) establishing cooperative compliance efforts between the two governments); *Texas Governor Asks President For Border Air Management District*, Int'l Env't Rep. (BNA) 584 (Aug. 11, 1993);

183 U.S. GENERAL ACCOUNTING OFFICE, NORTH AMERICAN FREE TRADE AGREEMENT: U.S.-MEXICAN TRADE AND INVESTMENT DATA, (1992), 1 [hereinafter TRADE AND INVESTMENT].

Environmental groups were almost unanimous in their agreement as to the negative environmental effects of free trade. Those concerns included: the continued and accelerated environmental degradation, particularly in the Border Area; the fear that United States and Canadian plants would not be able to compete against Mexican-based enterprises that escape tough and expensive pollution standards; and that free trade might directly or indirectly undercut environmental standards within the United States.

The environmental conditions of the Border Area are already abysmal. Free trade promised to eliminate some tariffs immediately and phase out others over five, ten, or fifteen years. As these barriers to trade are eliminated, increased industrialization of Mexico, and particularly the Border Area, is inevitable. Increased industrialization brings with it additional pollution whether through the manufacturing process itself[185] or through ancillary environmental effects of increased employment and transportation requirements requiring substantial infrastructure investment to accommodate these needs. Infrastructure improvements will also include more border inspection facilities, customs and immigration inspectors,[186] and an improved road system.[187]

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184 BORDER PLAN, *supra*, note 1, at I-1.

185 This would include the manufacturing waste discharged into the air or water which may be inherently hazardous or, even assuming it is not a hazardous waste, it may or may not require pretreatment prior to being discharged into a river or stream. If the industrial plant is connected to a municipal waste water treatment plant, the issue may arise as to whether the waste water treatment plant is capable of treating the manufacturing waste.

186 U.S. GENERAL ACCOUNTING OFFICE, U.S.-MEXICO TRADE: SURVEY OF U.S. BORDER INFRASTRUCTURE NEEDS, (1991), [hereinafter INFRASTRUCTURE NEEDS] (Staffing levels for Customs and INS inspectors have not kept pace with increases in work load along the southwest border. For example, the INS's work load increased by 49 percent from 1986 to 1990 [along the northern and southern land borders] while the permanent staffing has increased by only eight inspector positions, less than a 1 percent increase. Customs has fared better. From 1981 to 1990, the number of Customs inspectors has increased 63 percent, but work load has increased 169 percent during the same period).

The environmentalists' second concern is the specter of "environmental dumping" meaning environmentally "good" companies located in the United States and Canada will close and open environmentally "bad" companies in Mexico.[188] This concern is justified based on Mexico's past enforcement history although a contra argument can be made that increased economic activity will bring with it a greater environmental awareness and the resources to enforce the General Law.[189]

The final concern was and remains whether free trade will undercut United States environmental standards. This can be done in two ways: greater industrialization on the Mexican side of the border will result in greater pollution being carried by the various media across the border into the United States and, secondly, that the potential U.S. loss of jobs will bring political pressure to bear on the states and federal government to loosen enforcement of our stricter environmental laws.

In an attempt to quell the environmental opposition to the free trade agreement, both presidents ordered their respective environmental authorities -- EPA and SEDESOL -- to develop a comprehensive border plan to address the environmental problems of the Border Area.[190] The result was the Integrated Environmental Plan For the Mexican-U.S.

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187 *Id.* at 35 (The Texas plan for the El Paso area encompasses six highway projects costing an estimated $513 million. Of this, $139.8 million is for 10 projects ranked with high impact from a free trade agreement, $3.2 million. El Paso city officials report that the city does not have adequate highway and bridge capacity to handle congestion generated by the border crossing and their first priority is to develop additional international bridge capacity and secondly, develop a loop system of highways to divert commercial traffic around the city alleviating congestion and downtown air pollution). *See also Texas Appeals To Feds To Address Trucking Issues Stemming From NAFTA*, Int'l Trade Rep. (BNA) 607 (April 20, 1994). (Bridge of the Americas linking El Paso and Juarez is reportedly sinking because of overweight trucks).

188 HUFBAUER, *supra* note 12, at 132.

189 *See* Section VI, *supra*.

190 LA PAZ AGREEMENT, *supra* note 169 (Article 4 defines the Border Area as an

Border Area (Border Plan)[191] which was designed to stand independent of subsequently announced tri-national NAFTA. In that way, if NAFTA passed the two could be coordinated and if not, the Border Plan would be still be implemented.

The Border Plan has four objectives: (1) to strengthen enforcement of existing environmental protection laws; (2) to reduce pollution and improve the quality of the border area through new initiatives; (3) to increase cooperative planning, training and education; and (4) to improve understanding of the border area environment. In order to meet these objectives, the Border Plan is divided into stages. In the first stage (1992-94), the objectives are to delineate the environmental characteristics of the area and describe the current state of the area's major environmental issues.[192] The plan relies on cooperative border environmental implementation plans by binational, national, state and local government agencies.[193]

While the Border Plan has been called an "historic first step,"[194] it also attempts to address a wide range of environmental problems with implementation strategies dependent on the cooperative efforts of SEDESOL and EPA. While aspiring to lofty environmental goals, the Border Plan has received substantial criticism for being "short on funding, lacking in deadlines, vague on enforcement issues, unclear in spelling out how state

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area 100 kilometers on each side of the international boundary. The term "Border Area" has the same meaning in the Border Plan).

191 BORDER PLAN, *supra*, note 1, at I-3.

192 *Id.*

193 *Id.*

194 Interview of James M. Strock, Administrator, California Environmental Protection Agency, *International Trade, Texas Governor's Environmental Advisor Calls Mexican Border Plan 'Disappointing,'* (BNA), Feb. 27, 1992 [hereinafter TEXAS GOVERNOR].

agencies and the Environmental Protection Agency will coordinate efforts, and requiring unnecessary needs assessments."[195]

At the same time, the plan does provide for substantial investments by both governments who pledged to spend $860 million from 1992 through 1994.[196] In particular, on October 23, 1991, the Mexican government announced a three-year commitment of their share $460 million to address deficiencies in Border Area deficiencies in the areas of wastewater treatment, collection and proper disposal of solid waste, road construction, and territorial reserves for housing.[197] The United States's share has been spent on infrastructure needs, including waste water and drinking water construction grants along the Californian-Mexican border.[198]

The Border Plan does address air quality in El Paso but primarily in technical terms. The Border Plan provides for appraisals of urban air pollution problems, continued long-term air and meteorological monitoring, short-term field studies, identification of air modeling techniques, completion of a refined air emissions inventory for Juarez, and development of realistic control strategy scenarios.[199] While these are certainly precursors to an effective air pollution control program, the only concrete steps taken in the plan to control emissions are the establishment of a vehicular inspection and maintenance program and the extension of the oxygenated fuels program to Juarez.[200]

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195 *Id.*
196 *Id.*
197 *Id.*
198 *Id.*
199 BORDER PLAN, *supra* note 1, at V-23-25.
200 *Id.*

While the proponents and opponents of the Border Plan debate its merits, or lack thereof, those who actually live on the U.S.-Mexican border, including those in El Paso, were thankful for any sign of relief. But the debate over the Border Plan was just a skirmish before the battle over NAFTA in the fall of 1993.

VIII. THE GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT).[201]

Despite the passage of the North American Free Trade Agreement (NAFTA) the United States corporate investment in Mexico was already well underway. At the end of 1991, the United States was Mexico's dominant foreign investor, with 63 percent of cumulative foreign direct investment in Mexico[202] and based on U.S. statistics, in 1991 the United States recorded a merchandise trade surplus of two billion dollars with Mexico for the first time since 1981.[203] The conclusion is inevitably drawn that with or without NAFTA investment and trade with Mexico was going to grow, why then was NAFTA needed?

In order to understand why NAFTA and its environmental side agreement was necessary, you must understand the history, present state, and environmental controversies arising under the General Agreement on Tariffs and Trade (GATT).

Following World War II, GATT was created to promote international trade by reducing trade barriers among 100 countries creating, as near as possible, international

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201 General Agreement on Tariffs and Trade, Oct. 30, 1947, T.I.A.S. No. 1700, 55 U.N.T.S. 187 [hereinafter GATT]; *See also* Hilary F. French, *The GATT: Menace or Ally?*, World Watch 12 (Sep/Oct 1993) (the United States and Mexico are signatories to the GATT) [hereinafter MENACE OR ALLY].

202 TRADE AND INVESTMENT, *supra* note 183, at 3.

203 *Id.*

free trade.[204] The motivation for GATT was to stave off a depression like the one that occurred after World War I.[205] GATT's preamble states that its purpose is to contribute to a higher standard of living, full employment, large growing real income, and the "full use of the resources of the world" through "reciprocal and mutually advantageous arrangements" aimed at reducing trade barriers and "discriminatory treatment" in international commerce.[206] GATT makes no reference to the environment and is silent on any relationship between trade and environmental protection policies which may have an effect on trade. At the same time, given the year that GATT was created, the post-World War II worldwide economic state, and the prevailing thought that earth's resources were inexhaustible, omission of any reference to the environment is inconsequential.

GATT's multinational trade negotiations or "rounds," last several years and, since its inception, there have been eight rounds.[207] The first six rounds drastically reduced tariffs and, beginning in 1975, the seventh round (or Tokyo round) began the current effort to reduce nontariff trade barriers such as governmental subsidies to certain industries.[208]

The most recent round (the Uruguay Round) which began in 198[illegible] was to reduce nontariff trade barriers, but negotiations broke down in 1990 over some nations' refusals to reduce export subsidies of agricultural goods and to expand free trade in

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204 MENACE OR ALLY, *supra* note 201, at 13 (GATT has cut industrial countries' tariffs from an average of 40 percent in 1947 to 5 percent in 1990).

205 Michael Robins, *The North American Free Trade Agreement: The Integration of Free Trade and the Environment*, 7 Temp. Int'l & Comp. L.J. 123 n.7 (1993) [hereinafter ROBINS].

206 GATT, *supra* note 201, preamble.

207 MENACE OR ALLY, *supra* note 201, at 13 (each round generally lasts from four to six years, with many named after the city or country in which it began).

208 ROBINS, *supra* note 205, at 124.

services.[209] GATT's slow progress of addressing nontariff trade barriers and the increasing United States trade deficit led President Reagan to pursue a free trade agreement with Israel and Canada followed by President Bush's signing of NAFTA. But while NAFTA was being debated, environmentalists argued that NAFTA lacked environmental safeguards and that an environmental side agreement was necessary. In support of their position, they pointed to two cases of GATT being used to circumvent United States environmental laws.

A. GATT and the United States-Mexico Tuna-Dolphin Dispute

In the Eastern Tropical Pacific Ocean (ETP), large schools of tuna swim below dolphins, and fishermen from around the world use dolphins to locate or "mark" the tuna.[210] Once the dolphins are marked the fishing trawler will launch a motorboat or seine skiff which holds one end of the purse-seine net while the trawler circles unfurling the seine net. Once the circle is complete the seine skiff attaches its end to the trawler which purses the net by winching a cable attached to the bottom edge of the net while simultaneously drawing the top cable gathering the net contents. This is an effective way to fish for tuna, but it also kills or maims the captured dolphins.

The United States banned Mexican tuna imports based on the method or process of catching tuna which violated the 1972 Marine Mammal Protection Act (MMPA).[211]

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209 MENACE OR ALLY, *supra* note 201, at 124.

210 *Id.*

211 16 U.S.C. §§ 1361-1407 (1992) (The MMPA was enacted in 1972 to protect marine mammals from unnecessary activities which endangered them. This includes a general prohibition of "taking" [harassment, hunting, capture, killing, or attempt thereof and importation into the United States of marine mammals] except where an exception is explicitly authorized. Its stated goal is that the incidental kill or serious injury of marine

The MMPA implemented strict dolphin mortality quotas for domestic and imported tuna that effectively eliminated the purse-seine method for United States fishermen, but it did not prevent other international tuna fleets, including Mexico, from using the purse-seine method and in response the United States placed restrictions on the importation of Mexican tuna.[212] On January 25, 1991 Mexico requested a GATT dispute panel,[213] and on August 16, 1991 the panel ruled that the catching of the tuna occurred outside the United States, and, therefore, the United States could not apply its law to the product.[214]

In its argument justifying the ban, the United States relied on Article XX, to the obligations of the General Agreement. Specifically, the United States argued that the ban was authorized by Article XX(b), which provides an exception for laws and regulations that are "necessary to protect human, animal or plant life or health, " and Article XX(g) which provides an exception for measures "relating to the conservation of exhaustible natural resources."[215]

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mammals in the course of commercial fishing be reduced to insignificant levels approaching zero. The MMPA contains special provisions applicable to tuna caught in the ETP, defined as the area of the Pacific Ocean bounded by 40 degrees north latitude, 40 degrees south latitude, 160 degrees west longitude, and the coasts of North, Central, and South America) [hereinafter MMPA].

212 *Id.* § 101(a)(2), 16 U.S.C. § 1361(a)(2) provides that the Secretary of Treasury shall ban the importation of commercial fish or products from fish which have been caught with commercial fishing technology which results in the incidental kill or incidental serious injury of ocean mammals in excess of United States standards.

213 GATT, *supra* note 201, Article XXIII.

214 *United States - Restrictions on Imports of Tuna, Report of the Panel,* GATT Doc. DS29/R (June 1994). (Mexico's success was followed by the European Economic Community (EEC) challenge of the United States's restriction of tuna and tuna product imports based on identical grounds. On May 20, 1994, the GATT dispute panel ruled that the United States's prohibitions based on Marine Mammal Protection Act violated GATT).

215 GATT, *supra* note 201, Article XX provides that:

> Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination

Mexico responded that the protection of life and health of humans or animals was limited within the territory of the contracting party and that exhaustible natural resources, by definition, were resources which, once taken or utilized, cannot be renewed. Mexico also asserted that, even assuming a declining dolphin population, dolphins may reproduce and are not exhaustible or threatened with extinction.

Concerning the health and safety exception of Article XX(b), the panel rejected the United States's position that the exception justified the measures applied outside the jurisdiction of the United States and expressed concern that, if permitted to utilize the exception in this manner, then "each contracting party could unilaterally determine the life or health protection policies from which other contracting parties could not deviate without jeopardizing their rights under the General Agreement.[216]

Similarly, the Panel also ruled that Article XX(g) measures could not be employed to justify measures designed to protect natural resources that existed outside of the jurisdiction of the party invoking the exception.[217] The Panel based its decision on the concern that allowing extra-jurisdictional effect for the provision would undermine the General Agreement by allowing contracting parties to "unilaterally determine the

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> between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:
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> (b) necessary to protect human, animal or plant life or health; ...
>
> (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

[216] *Dispute Settlement Panel Report on United States Restrictions on Imports of Tuna*, Aug. 16, 1991, *reprinted* at 30 I.L.M. 1594 [hereinafter PANEL REPORT].

[217] *Id.* at 1621.

conservation policies from which other contracting parties could not deviate without jeopardizing their rights under the General Agreement.[218]

While superficial, the ruling drew a distinction between the process and the product; the heart of the ruling is that countries should not be allowed to use trade tools to influence practices outside their borders for environmental purposes. This ruling may have dire consequences on at least seventeen international treaties involving limitations on trade such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) treaty on endangered species which is implemented under the Endangered Species Act (ESA).[219] Conversely, if United States environmental law is successfully challenged under GATT, then every trade agreement or treaty to be negotiated in the future will have to include some provision or annex for environmental concerns. The United States has sought repeated appeals of the GATT dispute panel decision perhaps not only on the principle of the issue, but also for its potential effects on United States environmental laws and political pressures.

The Uruguay Round was finally completed on December 15, 1993, officially signed on April 15, 1994, in Marrakech, Morocco and is presently awaiting Congressional approval. If passed by Congress, the agreement will cut foreign tariffs on manufactured products by over one third; protect the intellectual property in industries such as pharmaceuticals and software; ensure open foreign markets for exporters of services such as accounting, advertising, computer services, tourism, engineering and construction; greatly expand export opportunities for agricultural products by limiting the ability of

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218 *Id.*

219 MENACE OR ALLY , *supra* note 201.

governments to block exports through tariffs, quotas, subsidies, and a variety of other domestic policies and regulations; and create an effective set of rules for the prompt settlement of disputes.[220] The Uruguay Round Agreement also created a new World Trade Organization (WTO) designed to expand and improve trade rules, harmonize trade and environmental issues, and eliminated the one-nation veto power.

While GATT has made significant changes in the world trade rules over the years, the single largest challenge it faces is to define, arbitrate, and resolve nontariff trade barriers such as conflicts with national environmental laws. There is no doubt that the Mexican-United Stated tuna-dolphin dispute has been a lightning rod for environmental concerns over GATT but its most serious challenge is yet to be decided.

B. GATT and CAFE Standards

Under the Energy Policy and Conservation Act,[221] corporate average fuel economy (CAFE) standards require that automakers' domestic fleets average at least 27.5 miles a gallon and that the "gas guzzler" tax[222] on big cars and the 1991 luxury tax be applicable to cars costing more than $32,000. These requirements allegedly discriminate against European automobiles. These were challenged by the European Union (EU) under GATT's anti-discrimination rule and a ruling is expected this summer.[223] If successful, the Uruguay Round GATT reforms could work against the United States environmental law.

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220 United States Trade Representative, *1994 Trade Policy Agenda and 1993 Annual Report*, (1994) 13 [hereinafter TRADE POLICY AGENDA].

221 15 U.S.C. § 2001, et seq and 40 C.F.R. Part 600.

222 Energy Tax Act of 1978, 26 U.S.C. § 4064.

223 Peter Behr, *Trade Case Poses Threat to Environmental Law, GATT*, Wash. Post, Jun. 10, 1994, at F1, F3 (Unfortunately for the United States, Congress provided a smoking gun for the EU argument in a 1975 House Ways and Means Committee report

Prior to the Uruguay Round, under GATT procedures, any nation could veto a GATT dispute panel decision, but under the new procedures for the WTO that eliminated the one-nation veto, the United States is exposed to unprecedented foreign pressures on environmental and food safety laws.[224] The United States can elect not to abide by the GATT dispute panel decision but the Europeans, or any subsequent winning party, is free to impose trade penalties equal to its damages which was $216 million in 1992 for just Mercedes-Benz.[225] Without a one-nation veto power, the end result could be the imposition of retaliatory trade penalties by an aggrieved nation which is essentially what GATT was originally designed to solve.

While the Clinton administration tries to downplay the potential challenges to United States environmental and food safety laws, many underdeveloped nations view environmental regulations as trade barriers designed to impose foreign law and dictate resource utilization. If such nations must choose between economic prosperity by challenging United States environmental laws as a nontariff trade barrier or foregoing such out of respect to United States stature, the choice is clear.

Given the present conflict of international trade and environmental issues, integration of the two will be necessary in any future trade agreement. This was one of the primary concerns during the 1992 presidential election and last fall's NAFTA debates. During the presidential campaign, President, then candidate, Clinton endorsed NAFTA

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that rejected across-the-board taxes on low-mileage cars, domestic and foreign, because the committee said it "did not want to provide a stimulus to increased imports of autos, in view of the depressed state of the United States auto industry.").

224 *Id.*

225 *Id.*

and promised to address its deficiencies, notably in the areas of environmental, labor, and import surges.[226]

IX. NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA)

On December 17, 1992, Presidents Bush and Salinas and Prime Minister Mulroney signed the North American Free Trade Agreement (NAFTA) which will phase out all trade barriers between the three countries over the next fifteen years.[227] When fully implemented, NAFTA will create the world's largest market comprising 370 million people and $6.5 trillion of production.[228] It will open the Mexican economy to U.S. exporters, investors, and service providers, expanding U.S. jobs by an estimated 200,000 in the first two years.[229] While it has been over six months since NAFTA's passage[230] and the heated debate as to NAFTA's effects on labor and the environment are nearly forgotten, there is an overriding benefit derived from NAFTA's passage -- Mexico's political stability.

Mexico is a country with an estimated population of 84 million people with an average annual population growth rate of two and a half times that of the United States. The average Mexican's income is only 28 percent of his/her American counterpart, yet each Mexican is faced with an annual inflation rate of 69 percent.[231] The result is an

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226 Nancy E. Soderberg, Editorial Section, Wash. Post, May 25, 1994, A23.

227 Robert Trautman, *U.S., Mexican, Canadian Leaders Sign Free Trade Pact,* Reuters Ltd., Dec. 17, 1992 (available in LEXIS, Nexis Library, World File).

228 ENVIRONMENTAL ISSUES, *supra* note 104, at ES-1.

229 *Id.*

230 NAFTA was passed by the House of Representatives on Nov. 17, 1993 by a vote of 234-200.

231 HUFBAUER, *supra* note 12, at 5 (for the period of 1980-89, the United States' population was 247 million with an average annual growth rate of 1 percent and Mexico's population was 84 million with an average annual growth rate of 2.4 percent; during this same period, the United States's per capita income was $19,851 as compared to Mexico's

impoverished country in need of jobs for a burgeoning population that is prone to political and economic instability.

On January 1, 1994, the day NAFTA went into effect, Mexican rebels took armed control of the southern state of Chiapas, in mid-March Alfredo Harp Helu, a prominent banker was kidnapped, and on March 23, Luis Donaldo Colosio, the ruling party presidential candidate was assassinated.[232] The economic consequences of Mexico's political instability have been enormous -- $5.2 billion of capital has fled the country since Mr. Colosio's assassination, the Mexican stock market has tumbled to its lowest level in five months, and the peso lost 8.8 percent of its value against the dollar during the first three months of this year.[233] In response, the Mexican government boosted interest rates on treasury certificates from a February low of 8.8 percent to 14.58 percent in April, and some speculate that if interest rates do not fall the Mexican government may consider devaluing the peso.[234] If the Mexican government devalues the peso, the United States will have to brace for an increased flow of illegal immigrants (similar to that following the 1982 devaluation) just at a time when the United States has toughened enforcement along the Mexican border resulting in increased tension between the two countries.[235] While these events strike an uncanny parallel to the plot of a recent novel,[236] NAFTA is already

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of $5,323).

232 David Clark Scott, *The Christian Science Monitor*, April 19, 1994, 8.

233 *Id.*

234 *Id.*

235 David Haskel, *U.S.-Mexico Relations Never Better*, Reuters, May 9, 1994 (available in LEXIS, Nexis Library, World File) [hereinafter HASKEL].

236 *See* Harold Coyle, *Trial By Fire, Pocket* Books, 1992 (a fictional book based on similar events in which the Mexican government is overthrown and armed confrontation ensues between Mexico and the United States).

playing an important part in stabilizing Mexico's economy[237] and may eventually stem the flow of illegal immigration.

NAFTA's impact on the Mexican and American economies could be substantial. It is estimated that NAFTA has or will cause: (1) exports to Mexico to increase substantially, increasing United States jobs supported by merchandise exports by an additional 200,000 by 1995 by almost 40 percent, bringing 350,000 gross new jobs to the economy;[238] (2) increase Mexican economic activity as much as 11 percent; and (3) Mexican per capita incomes to rise more if higher incomes cause birth rates to fall, as expected.[239]

The debates over NAFTA were historic for many reasons, especially its focus on nontrade issues such as the potential loss of jobs, respect for human rights, issues of cultural identity, and most prominently, the environmental impact of free trade. NAFTA is unparalleled among trade agreements in its attention to environmental issues and the degree to which it subordinates commercial considerations to environmental concerns. NAFTA will fulfill the inevitable integration of the economies of its three partners but particularly those of the United States and Mexico. Comparatively, NAFTA's potential benefit to Mexico is greater than to the United States[240] as it ensures more open and

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237 HASKEL, *supra* note 235 (Mexico's Trade Ministry announced April 12 that 33 companies including Chrysler Corporation, General Motors Corporation, Ford Motor Company, and J.C. Penney plan to invest $6.1 billion dollars in Mexico this year).

238 *San Antonio Is Hot For NAFTA*, U.S. News and World Report, Sep. 13, 1993, 63. (An example of increased exports to Mexico is Pace Foods, maker of Pace Picante Sauce located in San Antonio, Texas. In 1990, after filming a TV commercial in Mexico City Pace left 350 jars of its picante sauce with a local grocer. Within two weeks all 350 jars were gone and Pace established a test market in Monterrey, Mexico and captured 11 percent of its Mexican sauce market).

239 ENVIRONMENTAL ISSUES, *supra* note 104, at 69.

240 HUFBAUER, *supra* note 12, at 11 (While Mexico's economy is growing, its GNP

secure access to a market that accounts for three-quarters of total Mexican exports and reduces the threat of U.S. protectionism.[241] Secondly, NAFTA will lock in the domestic Mexican reforms instituted since 1985.[242] Thirdly, it will promote investment in Mexico.[243]

A. Goals and Objectives

In the preamble of NAFTA, the parties agree to pursue the elimination of trade barriers "in a manner consistent with environmental protection and conservation."[244] Specifically, the parties commit to promoting sustainable development and to strengthening the development and enforcement of environmental laws and regulations.[245] While the language and goal is hortatory with no implementation plan, they are important for the principles and framework for the subsequent interpretation, implementation, and dispute settlement under the international accord.

B. Relation to Other International Environmental Agreements

NAFTA's general rule is it will exercise control over other international agreements between the parties but Article 104 guarantees that trade restrictions under

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is less that 4 percent that of the U.S. economy).

241 HUFBAUER, *supra* note 12, at 12.

242 *Id.* (In the initial wave of trade liberalization, licensing requirements were cut back for about 3,600 items, leaving 908 items under control. Since then, the maximum tariff level has been cut back from 100 to 20 percent, the trade-weighted average tariff has fallen to just above 10 percent, most licensing requirements have been eliminated, and the official reference prices for customs valuation purposes have been progressively removed. In addition, regulations regarding foreign investment and technology transfer have been liberalized and the intellectual property laws substantially revamped).

243 *See* HASKELL *supra* note 235.

244 North American Free Trade Agreement, 32 I.L.M. 289, 297 [hereinafter NAFTA].

245 *Id.*

certain specified environmental and conservation agreements shall take precedence over inconsistent NAFTA obligations and cannot be challenged as a NAFTA violation.[246] The list of agreements includes: CITES, the Montreal Protocol on Substances that Deplete the Ozone Layer, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Agreement between Canada and the United States Concerning the Transboundary Movement of Hazardous Waste, and the La Paz Agreements for the Protection in the Border Area.[247]

Historically, environmental restrictions have been viewed as impermissible trade barriers and been struck down under international trade agreements such as GATT.[248] NAFTA was drafted with experiences learned from other trade disputes and if NAFTA conflicts with the aforementioned international agreements, NAFTA defers, albeit conditionally, to them. Specifically, NAFTA provides that where a Party has a choice among "equally effective" and "reasonably available" means of complying with the environmental obligation, it is to choose the alternative that is "least inconsistent" with other provisions of NAFTA.[249]

While this seems reasonably clear in relation to the international environmental agreements listed or hereafter adopted by the three Parties,[250] one of the unanswered questions is whether the prospect of a NAFTA dispute will deter a Party from

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246 *Id.*, Art. 104(1).

247 *Id.* Art 104 & Annex 104.1; *See also* Malissa Hathaway McKeith and Mary Hall, *Environmental Compromise: Striking the Balance Between Trade and Ecology*, Int'l Envtl. Rep. (BNA) 724 (Nov. 4, 1992).

248 *See* Section VIII, *supra*.

249 NAFTA, *supra* note 244, Art. 104.

250 *Id.* (The Parties may agree in writing to modify Annex 104.1 to include any amendment to an agreement referred to in paragraph 1 and other environmental or conservation agreement).

promulgating domestic environmental laws and regulations or entering into other international environmental agreements. A corollary concern is if other countries join NAFTA,[251] it will become increasingly difficult to add other environmental agreements; eventually, NAFTA's deference to international environmental and conservation agreements will grow proportionately smaller.[252]

C. Health and Safety Standards

One of the major areas of environmentalists' concerns is the NAFTA engendered increase in Mexican exports, such as fruits and vegetables, that are subject to substantially less stringent health and safety standards than those observed domestically.[253] NAFTA provides that the parties may, in appropriate circumstances, impose trade restrictions based upon environmental and conservation standards and technical regulations more stringent that international standards.[254]

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251 *Chile Intends to Seek Membership*, Int'l Trade Daily (BNA) (Jun. 8, 1994) (Chilean officials have expressed strong interest in membership in the North American Free Trade Agreement, and the country has often been mentioned as the likely first South American country to be invited to join NAFTA. While informal trade discussions between the United States and Chile have already begun, the United States has not decided whether it will proceed through NAFTA accession or by negotiating a separate bilateral agreement).

252 *NAFTA Implementing Bill's Language Requires Few Changes, Administration Says*, Int'l Trade Rptr. (BNA) 1890 (Nov. 10, 1993) (Mexico and Canada committed to adding two agreements to the list specified in Article 104 once NAFTA takes effect. These are: the Convention Between the United States of America and the United Mexican States for the Protection of Migratory Birds and Game Animals and the U.S.-Canada Convention on the Protection of Migratory Birds. Other international environmental or conservation agreements identified for inclusion in NAFTA are the Convention for the Regulation of Whaling and the Convention for the Establishment of an Inter-American Tropical Tuna Commission).

253 ENVIRONMENTAL ISSUES, *supra* note 104, at 108.

254 NAFTA , *supra* note 244, Arts. 104, 712.

Chapter Seven, Sanitary and Phytosanitary (SPS) Measures,[255] ensures that each country may adopt and maintain SPS measures, including those more stringent than international standards, to secure its chosen level of protection.[256] In establishing sanitary and physanitary measures, a pivotal question and reoccurring issue is how much protection may each country establish against a particular risk. Article 724[257] provides that both Parties may decide on "the appropriate level of protection" defined as "the level of protection of human, animal, or plant life or health in the territory of a Party that the Party considers to be appropriate." Thus, both Parties recognize that their sanitary and phytosanitary measures differ and that Article 713 provides for the use of relevant international standards without reducing the level of protection of human, animal or plant life or health in order to facilitate free trade. A common concern is whether this provision compromises United States measures. Article 713.1 explicitly provides that while the use of international standards may serve as a basis, this is to be done without reducing the requisite level of protection.[258] If a dispute arises concerning whether an S & P measure is truly designed for protection, a party may then request written proof of the reasons for the measure.[259]

Chapter Nine addresses "technical barriers" to trade or all other standards-related measures (SRM) other than SPS, which provides that each party may adopt any such measure relating to "safety, the protection of human, animal or plant life or health, the

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255 *Id.*, Arts. 709-723, (SPS measures are those designed to protect human, animal, or plant life or health from pests, diseases, and risks posed by additives or contaminants).

256 *Id.* Art. 712.

257 *Id.* Art. 724.

258 *Id.* Art 713.1.

259 *Id.* Art. 713(4).

environment or consumers and any measure to ensure its enforcement or implementation."[260] While Chapter Nine provides that international standards shall be used as a basis by the parties for setting their own standards-related measures, it does not prevent a party from adopting measures resulting in a higher level of protection.[261] All nonconforming imports may be banned provided that the respective nonstandards related measures do not discriminate and have a demonstrated purpose linked to a "legitimate objective."[262] A "legitimate purpose" is defined to include safety, sustainable development, and protection of human health, the environment, or consumers and maybe based on risk assessment.[263]

These two provisions of NAFTA would thus protect the circumvention of the United States nonagricultural environmental, health, and safety standards assuming they meet the appropriate tests set out above.

In the event that the Parties are unable to agree on SPS and SRM measures or other disputed matters, NAFTA established the Free Trade Commission to assist the parties in finding a mutually satisfactory resolution.[264] If the dispute relates to either a SPS or SRM, recourse to dispute settlement procedures is limited to NAFTA and the complaining party may not seek relief under GATT.[265]

If the commission cannot resolve the dispute, it must establish an arbitral panel upon request of the disputing party.[266] The commission and the arbitral panel may request

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260 *Id.* Art 904.
261 *Id.* Art. 905.
262 *Id.* Art. 904.
263 *Id.* Arts. 907, 915.
264 *Id.* Chapter 20.
265 *Id.*, Art. 2005(4).
266 *Id.*, Art. 2008.

the assistance of technical experts as they deem appropriate.[267] Additionally, the panel may request that a scientific review board examine and review the dispute facts and issue a report.[268] The panel then issues an initial report containing findings of fact and recommendations for resolving the dispute. The parties may then submit comments on the initial report followed by the panel's final report to the commission. If the panel has found that a party's measure is inconsistent with NAFTA and the violating party fails to adhere to the panel's decision, the complaining party may suspend the violating party's benefits within the same sector affected by the measure.[269] This provision will hopefully isolate trade differences and prevent them from escalating into unaffected sectors and eroding NAFTA.

All hearings as well as deliberations of the commission, panel, and review boards are confidential. The panel's final report must be published within fifteen days after it is submitted to the commission, unless decided otherwise.

D. Agreement Concerning the Establishment of a Border Environment Cooperation Commission and North American Development Bank[270]

When NAFTA was drafted both Mexico and the United States recognized the importance of addressing the border area's transboundary environmental problems. To assess, control, cure, and plan for economic expansion and pollution will require joint Mexican-United States action. The two countries augmented NAFTA with the

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267 *Id.*, Art. 2014.

268 *Id.*, Art. 2015-17.

269 *Id.*, Art. 2019.

270 Mexico-United States: Agreement Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank [hereinafter BORDER ENVIRONMENT AGREEMENT].

Agreement Concerning the Establishment of a Border Environment Cooperation Commission (BECC)[271] and the North American Development Bank (NADB) to address border area issues.[272] The BECC and the NADB work in tandem. The BECC coordinates the project preparation, development, and assesses the infrastructure impact to the border region while the NADB finances, or procures financing, for the BECC certified project.

Initially, infrastructure projects related to water pollution, wastewater treatment, municipal solid waste, and related matters are given preference, but eventually the Commission is authorized to provide any and all such assistance as it deems appropriate.[273]

The BECC is key to the operation of the Agreement. The BECC accepts applications from states, localities, public entities and private investors for certification of environmental infrastructure projects. The BECC then evaluates the proposed project for its technical, environmental, financial or other relevant criteria. If the proposed border region project has significant transboundary environmental effects, an environmental assessment must be completed and the BECC's Board of Directors must determine that the project meets the necessary conditions to achieve a high level of environmental

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271 *See, Also In The News*, Int'l Trade Rptr. (BNA) 557 (Apr. 6, 1994) (The U.S.-Mexico Border Environmental Cooperation Commission (BECC) will be located in Ciudad Juarez, Mexico--across the border from El Paso, Texas, State Department and Environmental Protection Agency officials told BNA March 31).

272 BORDER ENVIRONMENT AGREEMENT, *supra* note 270.

273 *Id.*, Article II, Section 2(b); Telephone Interview with Sanford Gaines, Attorney, United States Trade Representative (Jul. 5, 1994) (Mr. Gaines indicated that while the BECC would consider requests other than those related to water pollution, he did not foresee BECC becoming involved in air pollution infrastructure projects at this time. Mr. Gaines added that the Administrator, Environmental Protection Agency (EPA), is a member of BECC's Board of Directors and any requested project funding would be coordinated through EPA).

protection for the affected area. In arriving at this determination, the Board of Directors is required to consider the potential environmental benefits, environmental risks, and costs, as well as available alternatives and the environmental standards and objectives of the affected area.

The BECC will not exercise project supervisory control but will provide the technical and environmental assistance through its own staff[274] or those available through the International Boundary and Water Commission (IBWC).[275] Assuming the proposed project meets the requisite criteria, the BECC will certify the project to the NADB or other source of financing requesting the certification.

The NADB is to be initially capitalized with $450 million dollars contributed equally by Mexico and the United States and $2.55 billion dollars in callable capital. Its primary mission will be to provide financing for projects certified by the BECC by either guaranteeing loans made by private financial sources or, where private financing is unavailable, loans made directly by the NADB.[276]

E. NAFTA and Air Quality

Air quality, while not specifically addressed in NAFTA, is one of the areas of pollution addressed by the Border Plan.[277] Air pollution and its consequential effect on air quality is directly or indirectly linked to the industrialization of the border area. The burgeoning Mexican population's demands for increasing electricity led to the construction

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274 BORDER ENVIRONMENT AGREEMENT, *supra* note 270, Article III, Section 4(d).

275 *Id.*, Article III, Section 6.

276 *Id.*, Chapter II, Article I, Section 1.

277 BORDER PLAN, *supra* note 1, at V-23.

of Carbon I and II power stations located 20 miles south of the Texas border.[278] Emissions from these stations have had a significant adverse effect on visibility in Big Bend National Park in the United States - 130 miles away.[279] On October 26, 1993, in the context of a Ministerial meeting pursuant to the Border Plan, the United States and Mexico agreed to establish a binational technical working group to address existing situations of substantial air quality degradation, including the visibility problems at Big Bend National Park.[280] In addition to Carbon I and II, major sources of air pollution include copper smelters, maquiladoras, motor vehicle emissions, and residential sources.[281]

While NAFTA relies primarily on the Border Plan to address air quality issues, the USTR forecasts two plausible scenarios of NAFTA's effect on the border area.[282] Both scenarios assume an increase in the number of pollutant-emitting facilities in Mexico and

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278 *State Department Meets with Mexico About Coal-Fired Plant South of Border*, Daily Report For Executives (BNA) 184 d34 (Sep. 24, 1993) (Carbon I power plant was constructed in Piedras Negras by the Mexican national electricity authority, Comision Federal de Electricidad, in the early 1980s. It has four coal-powered, 300-megawatt units. The national utility is building four more units, called Carbon II near Carbon I, and each unit will have 350-megawatts of power; all are expected to be operational in 1995. Neither Carbon I nor II have controls for sulfur dioxide (SO_2) even though Mexico's SO_2 limit of 0.13 parts per million--averaged over a 24-hour period--is slightly more stringent than the U.S. ambient air quality standard of 0.14 ppm. Mission Energy, a U.S. affiliate of Southern California Edison Company, and its Mexican partner, Grupo Acerero del Norte, contracted in 1992 to purchase Carbon II and there has been speculation that the utility may shift a portion of its electrical power generation to Mexico to avoid compliance with the Clean Air Act and then export the power to the United States).

279 ENVIRONMENTAL ISSUES, *supra* note 104, at 111.

280 *Id.*

281 *Id.* at 111 (Sulfur dioxide [SO_2] emissions from copper smelters on both sides of the border have been significant sources of air pollution but have been addressed under Annex IV, adopted in 1987, to the La Paz Agreement resulting in a standard emission limitation on U.S. and Mexican border copper smelters. Emissions inventories are presently underway for the maquiladoras and an aggressive motor vehicle inspection program is combating emissions control equipment tampering in Juarez).

282 *Id.* at 112-118.

increases of commercial and residential pollution sources on both sides of the border. Scenario A is predicated on unchecked pollution growth due to a lack of SEDESOL regulation or, more likely, lack of effective enforcement while Scenario B assumes an effective implementation and enforcement of the Border Plan initiatives including: enhanced industrial inspections and enforcement; tighter emissions standards for new automobile emissions; startup of vehicular inspection and maintenance programs in Tijuana and Juarez; and retrofitting and retirement of existing, highly polluting industries.[283] But even under the best scenario which assumed NAFTA's passage and proportionally more growth in the Mexican interior rather than in the border area, border air emissions projections range from a 20 percent decrease to an 85 percent increase.[284] In other words, the border area's best hope is for a moderate decrease of already debilitated air quality or at worst, air quality that will consistently pose a threat to human, animal, and plant life. While neither of these alternatives seems particularly attractive, it may very well underestimate NAFTA's investment in the Mexican interior and assumes the continued importance of the border area.

While not minimizing the border area's environmental concerns, the border area has enjoyed economic prosperity as a result of border related businesses. This not only includes the employment opportunities for Mexicans in the maquilas but also for the maquiladoras related services and transportation needs. In a recent study,[285] Dr. James R. Giermanski studied the border area's current trade practices which contribute to border

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283 *Id.* at 112-118.

284 *Id.* at 112-118.

285 Dr. James R. Giermanski, Testimony Before the National Commission on Intermodal Transportation, *The U.S.-Mexico Border: An Impediment to Seamless Cargo Flows* (May 12, 1994).

congestion and thus pollution. In particular, he examined the drayage system (cargo transferring between Mexico and the United States) which presently requires the exporting country to deliver truck shipments across the border to a truck terminal and then return without any cargo. As a result, only one half of the transportation capacity is utilized and only one half of the commercial truck traffic presently straining the border cities' roads and bridges is necessary.[286] Other contributing factors to border congestion and pollution include: inadequate use of current facilities, such as the new Solidarity (Columbia) bridge; limited hours of Mexican-American customs services; Mexican freight forwarding practices which holds trailers and goods until duties are paid; inadequate enforcement of highway taxes which, in effect, denies the states infrastructure monies; and overweight shipments which cause infrastructure damage.[287]

NAFTA's purpose of free trade will eventually eliminate tariffs between the United States and Mexico spurring Mexican consumer demand for American products. This should drive American companies deeper into the Mexican interior resulting in the demise of the maquiladora program. Without the pre-NAFTA geographic and customs border concerns, much of the border cities transportation related business will become a thing of the past.[288] As an example, Dr. Giermanski points to the European Community's (EC) economic integration and the experience of one border town--La Jonquerra, Spain.[289]

Prior to EC integration, La Jonquerra was a thriving border town where truckers commonly hired middlemen to complete the necessary forms for border passage and clerks

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286 *Id* at 5.

287 *Id.* at 2-19.

288 *Id.* at 29.

289 *Id* at 33.

would earn about $2,500 a month.[290] But with EC integration, 35 percent of La Jonquera's work force is unemployed and the four thousand trucks that would stop daily pass through the open border without stopping.[291] If the United States-Mexican border undergoes a similar transformation permitting manufacturer-retailer "door-to-door" delivery with return trip utilization, it would certainly hurt the border town's economy but the environment should experience a significant boost.

F. North American Agreement on Environmental Cooperation (NAAEC)

The environmental consequences of NAFTA were a significant issue during the presidential debate of 1992. Then candidate, now President, Clinton stated that NAFTA alone was insufficient to adequately protect the environment and that, if elected president, he would negotiate a supplemental agreement to address NAFTA's deficiency. NAAEC was negotiated by a multidisciplined team which included representatives from the Environmental Protection Agency; Department of State; and the Departments of Agriculture, Commerce, Justice, and Interior to ensure strong enforcement of Mexico's environmental laws.[292] The side agreement requires each Party to "effectively enforce its environmental laws and regulations through appropriate governmental action" with the goal of "achieving high levels of environmental protection and compliance."[293] Additionally, NAACE ensures the right of private parties to administrative, quasi-judicial, or judicial proceedings for the enforcement of a Party's environmental laws.[294]

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290 *Id.*

291 *Id.*

292 ENVIRONMENTAL ISSUES, *supra* note 104, at 14.

293 North American Agreement on Environmental Cooperation, Part Two, Article 5 [hereinafter NAAEC].

To facilitate effective environmental enforcement, NAAEC establishes the Commission for Environmental Cooperation which will address any environmental or natural resource issue through its standing committees, work or expert groups.[295] The environmental side agreement is unparalleled and a brief review of its key provisions are important for understanding its future implications for subsequently negotiated free trade agreements.

F1. **NAACE Preamble**

The preamble establishes the aspiratory goals and principles of the Agreement. Notably, the Parties recognize: the overall importance of the conservation, protection, and enhancement of the environment in their territories and the essential role of cooperation in these areas in achieving sustainable development while reaffirming the right of States to exploit their own resources for development policies.

F2. **Obligations**

The obligations of each Party are set forth in Part Two. The linchpin of Part Two and an important part of the overall Agreement is Article 5 - Government Enforcement Action[296] which has no precedent in existing trade agreements or international

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294 *Id.*, Part Two, Article 6.

295 *Id.*, Part Three, Article 9.

296 NAAEC, *supra* note 293, Article 5: Government Enforcement Action provides, in part:

> 1. With the aim of achieving high levels of environmental protection and compliance with its environmental laws and regulations, each Party shall effectively enforce its environmental laws and regulations through appropriate governmental action, subject to Article 37, such as:

environmental agreements. Article 5 requires each party to effectively enforce domestic environmental laws and enumerates appropriate governmental action including environmental audits that may provide early detection of potentially hazardous situations. If environmental violation occurs, Article 5 requires sanctions and remedies to exact any economic benefit derived from the violation and includes provisions for compliance agreements, fines, imprisonment, injunctions, the closures of facilities, and the cost of containing or cleaning up pollution.

F3. **Commission for Environmental Cooperation**

Perhaps the most significant aspect of the Agreement is the creation of the Commission for Environmental Cooperation (CEC). The CEC will address the full spectrum of environmental issues presented not only by the advent of NAFTA but those predating NAFTA's enactment. The CEC is comprised of a trinational Council of

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(a) appointing and training inspectors;
(b) monitoring compliance and investigating suspected violations, including through on-site inspections;
(c) seeking assurances of voluntary compliance and compliance agreements;
(d) publicly releasing noncompliance information;
(e) issuing bulletins or other periodic statements on enforcement procedures.
(f) promoting environmental audits;
(g) requiring record keeping and reporting;
(h) providing or encouraging mediation and arbitration services;
(i) using licenses, permits or authorizations;
(j) initiating, in a timely manner, judicial, quasi-judicial or administrative proceedings to seek appropriate sanctions or remedies for violations of its environmental laws and regulations;
(k) providing for search, seizure or detention; or
(l) issuing administrative orders, including orders of a preventative, curative or emergency nature.

Ministers, a Secretariat, and a Joint Public Advisory Committee. The council is given broad oversight of a broad range of environmental issues[297] and may direct them to *ad hoc* or standing committees, working groups, or expert groups or otherwise seek the necessary advice.[298] Additionally, the CEC is to strengthen cooperation on the development and continuing improvement of environmental laws and regulations without reducing levels of environmental protection.[299] This "upward harmonization" of environmental laws and regulations is accomplished by establishing a process, through

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297 NAAEC, *supra* note 293, Article 10.2 provides that the Council may consider, and develop recommendations regarding:

> (a) comparability of techniques and methodologies for data gathering and analysis, data management, and electronic data communications on matters covered by this Agreement;
> (b) pollution prevention techniques and strategies;
> (c) approaches and common indicators for reporting on the state of the environment;
> (d) the use of economic instruments for the pursuit of domestic and internationally agreed environmental objectives;
> (e) scientific research and technology development in respect of environmental matters;
> (f) promotion of public awareness regarding the environment.
> (g) transboundary and border environmental issues, such as long-range transport of air and marine pollutants;
> (h) exotic species that may be harmful;
> (i) the conservation and protection of wild flora and fauna and their habitat, and specially protected natural areas;
> (j) the protection of endangered and threatened species;
> (k) environmental emergency preparedness and response activities;
> (l) environmental matters as they relate to economic development;
> (m) the environmental implications of goods throughout their life cycles;
> (n) human resource training and development in the environmental field;
> (o) the exchange of environmental scientists and officials;
> (p) approaches to environmental compliance and enforcement;
> (q) ecologically sensitive national accounts;
> (r) eco-labelling; and
> (s) other matters as it may decide.

298 *Id.* at Art. 9.

299 *Id* at Art. 10.3.

technical or working groups, that will compare environmental technical regulations and propose uniform standards acceptable to all Parties.

The Secretariat is headed by an Executive Director, chosen by the CEC, to provide the technical, administrative and operational support to the Council, committees, and groups. The Executive Director will select the Secretariat staff, subject to a two-thirds veto by the Council of any appointment not meeting the general standards. The Executive Director is guided in his/her staff selections by the general standards based on professional competency and with due regard to equitable national proportion.

The Secretariat is also charged with the responsibility of preparing an annual report of the Commission that addresses, in part, the actions taken by each Party in connection to its environmental enforcement activities.[300] Additionally, the Secretariat is to forward any enforcement complaints to the respective Party for response and upon its receipt, the Secretariat may refer the matter to the Council for a factual record.[301] This will provide not only a forum for citizens' complaints but will also provide public documentation for each Parties' adherence to NAFTA's environmental provisions.

The third branch of the CEC is the Joint Public Advisory Committee (JPAC)[302] which is comprised of fifteen members that provide advice to the CEC on annual programs and budgets and may provide the Secretariat with technical, scientific, or other information for the purposes of developing a factual record.

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300 *Id* at Art. 12.

301 *Id* at Art. 14-15.

302 *Id* at Art. 16.

F4. **Dispute Resolution of Environmental Enforcement Laws**

NAAEC establishes a dispute resolution mechanism to ensure the Parties effectively enforce their environmental laws.[303] The primary purpose of the process is to correct the problems of a "persistent pattern of failure to effectively enforce its environmental law"[304] rather than to level sanctions.

A Party initiates the process by making a written consultation request with any other Party, and if the matter is unresolved within sixty days, the Parties may agree in writing to a special session of the CEC. If the Council is unable to resolve the dispute within sixty days of convening, the Council shall, on the written request of any consulting Party, and by two-thirds vote, convene an arbitral panel to consider the grievance.[305] The five arbitral panelists will be chosen from a standing roster of forty-five individuals with expertise or experience in environmental law or its enforcement.[306] After hearing the factual basis of the dispute and any needed expert advice, the panel issues an initial report within one hundred days and each Party may submit written comments within thirty days. Following the deadline for any Party's submission, the panel will issue its final report within thirty days, which will also be made public five days after it is transmitted to the Council.[307]

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303 *Id* at Arts. 22-36.

304 *Id* at Art. 22(1) (the persistent pattern of failure by a Party must relate to a situation involving workplaces, firms, companies, or sectors that produce goods or provide services: (a) traded between the territories of the Parties; or (b) that, for the territory complained against, compete with goods or services produced or provided by persons of another Party).

305 *Id* at Art. 24.

306 *Id* at Arts. 25-27.

307 *Id* at Art. 32.

If the Panel finds that a Party has engaged in a persistent pattern of failure to effectively enforce its environmental law, the Parties may, within 60 to 120 days, agree on a mutually satisfactory "action plan" to remedy the nonenforcement.[308] If no action plan is agreed upon by the Parties, then within sixty to one hundred twenty days after the final panel report, the panel shall be reconvened to establish an action plan and may also impose monetary enforcement assessments.[309] If an agreed upon action plan fails to be fully implemented, the complaining Party may request the panel to reconvene to impose a monetary enforcement assessment which may not exceed $20 million dollars for the first year the NAACE goes into effect and thereafter may not exceed .007 percent of the total trade in goods between the Parties.[310] If a Party fails to pay the monetary enforcement assessment or continues its failure to enforce its environmental law, the complaining Party may suspend NAFTA benefits based upon the amount of the assessment.[311]

CONCLUSION

In the past, transboundary pollution between the United States and Mexico has been approached through a patchwork of international environmental agreements. Each of the agreements discussed in this thesis has benefits as well as its drawbacks. Wastewater treatment is, and remains, the predominant transboundary pollution problem along the United States-Mexican border and is the focus of many of the international agreements. No one agreement as yet adequately addresses air pollution and, in

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308 *Id* at Arts. 33-34.

309 *Id* at Art. 34.

310 *Id* at Annex 34.

311 *Id* at Art. 36 and Annex 36B.

particular, the El Paso-Juarez air pollution problem. The issue is whether any of the existing treaties or agreements discussed in this thesis can be effectively utilized to accomplish this goal or is a new agreement between the countries necessary. Texas and several of the environmental groups have asked President Clinton to designate an international air quality management district (IAQMD) for El Paso-Juarez by adding an Annex VI to the La Paz Agreement,[312] this may provide a partial solution but, at the same time, it presents just as many unanswered questions.

The La Paz Agreement is probably the most effective vehicle to address the El Paso-Juarez air pollution problem for several reasons. First, unlike the Border Plan, the La Paz agreement is a formal agreement between the two countries that expressly recognizes the long-term economic benefits of a health environment;[313] promotes the adoption of appropriate measures to prevent, reduce, and eliminate sources of pollution;[314] obligates the parties to pursue coordination of national environmental programs;[315] and provides for expert assistance in coordinating national programs.[316] In other words, the La Paz agreement already has established the framework and all that is needed is an annex establishing an El Paso-Juarez airshed.

An IAQMD is also a common sense approach to a binational pollution problem as it addresses the problem on a geographical basis without regard to political boundaries. El Paso-Juarez air pollution must be approached in this cooperative manner, and the

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312 *See supra* note 172 .
313 LA PAZ AGREEMENT, *supra* note 169, Preamble.
314 LA PAZ AGREEMENT, *supra* note 169, Article 2.
315 LA PAZ AGREEMENT, *supra* note 169, Article 6.
316 LA PAZ AGREEMENT, *supra* note 169, Article 11.

establishment of an International Air Quality Management District (IAQMD) would provide such a basis, but the establishment of the IAQMD must be just the beginning.

The Sierra Legal Defense Fund has proposed an Annex VI and implementing agreement for the consideration,[317] and the first issue that will arise is whether the Administrator has the legal authority to designate an IAQMD. The Administrator is authorized to designate as an air quality control region any interstate area or major interstate area which he/she deems necessary or appropriate for the attainment and maintenance of ambient air quality standards.[318] Assuming prior coordination and participation by the Mexican government, the Clean Air Act does not prohibit designation of an international area for the purposes of attaining and maintaining ambient air quality standards. While potential opponents may argue the Clean Air Act does not authorize such a designation, the overriding purpose or intent of the Clean Air Act is to control air pollution, and--given El Paso's circumstances--an IAQMD is a feasible means to an end.

Assuming an IAQMD is created, it should assume supervisory control of the present emissions inventory and develop and coordinate joint control strategies with state and local agencies responsible for air quality planning. Joint control strategies could

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[317] Annex VI to the Agreement between the Government of the United States of America and the Government of the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area, App. I [hereinafter PROPOSED ANNEX]; Draft Agreement to Establish and Empower an International Air Quality Management District, App. II [hereinafter DRAFT AGREEMENT].

[318] CAA § 107(c), 42 U.S.C. § 7407(c). *See also* CAA §§ 176A, 42 U.S.C. § 7506a (authorizing the Administrator to establish a transport region when it is believed that the interstate transport of air pollutants contributes significantly to a violation of a national ambient air quality standard in one or more states); CAA § 182(j), 42 U.S.C. § 7511a (establishment of a multi-state ozone nonattainment area); CAA § 187(e), 42 U.S.C. § 187(e), 42 U.S.C. § 7512a(e) (coordination of revisions and implementation of state implementation plans for a single nonattainment area covering more than one state).

encourage investment in pollution control projects such as emission reductions or offsets in Juarez to be used by new or modifying sources located in El Paso.[319] This type of investment is not only authorized by the Clean Air Act[320] but has recently been encouraged by EPA guidance,[321] and the hope is American companies would purchase Juarez's old air pollution dinosaurs to obtain needed offsets. Additional factors that should be considered in designing the IAQMD include: (1) its effectiveness in addressing air quality problems; (2) administrative feasibility, specific funds and personnel; and (3) public acceptance.[322]

The IAQMD could also play an expanded role in air quality goals, planning, and the implementation of pollution control and prevention programs. The draft agreement does provide that the IAQMD should be comprised of representatives from each country[323] who jointly participate in state inspections,[324] source testing, monitor compliance,[325] and in developing recommendations for remedial action where necessary.[326]

Additionally, if a dispute arises on continuing noncompliance, the draft agreement includes a provision for referral to the Commission for Environmental

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319 CAA § 173(c), 42 U.S.C. § 7503(c); *see also* CAA § 182(c), 42 U.S.C. § 7511a(c) (as a serious ozone nonattainment area, El Paso must satisfy emission offset reductions of volatile organic compounds to total increase emissions by at least 1.2 to 1).

320 CAA § 182(g)(4), 42 U.S.C. § 7511a(g)(4).

321 Economic Incentive Program Rules, 59 Fed. Reg. 16,690 (1994) (to be codified at 40 C.F.R. Part 51); *See also Binational Air Quality Districts May Be Formed For Twin border Cities*, Int'l Env't Daily (BNA) (Jun. 21, 1994) (Richard Kiy, Acting Environmental Attache to the United States Embassy in Mexico said that an El Paso-Ciudad Juarez air quality management district would institute emissions trading schemes and if successful would serve as a model for other twin cities along the border).

322 Environmental Defense Fund, Discussion Paper on Management of Transboundary Air Pollution, (April, 1993) (unpublished paper, on file with the author).

323 DRAFT AGREEMENT, *supra* note 317, Art. II.

324 *Id.*, Art. III

325 *Id.*

326 *Id.*

Cooperation Council for resolution.[327] An aspect of the referral process that needs clarification is who may request a dispute be referred to the Council? Again the referral process should be patterned after the NAAEC in which any party may request a special session of Council to resolve a dispute.[328]

Additionally, if the IAQMD assumed or participated in monitoring responsibilities it would know which facility was the dirtiest emission source, could coordinate economic incentive program investments, and possibly reap a fee defraying its expenses. At the same time, the establishment of an IAQMD without a binational agreement on standards, deadlines, funding, and enforcement will subject the IAQMD to the same criticism leveled at the Border Plan.[329]

Table 1 shows that the Mexican and United States ambient air quality standards are essentially the same and where disagreement exists, it should negotiated and standards included in the annex. Without knowing the emission monitoring results, deadlines are impossible to set, but can be included in subsequent negotiations and exchanges of diplomatic notes. IAQMD funding should be borne equally between the parties while air quality improvement projects could be financed either through private industry, financial institutions, or the NADB.

The key to any successful pollution control program is enforcement and probably one of the most important aspects of an enforcement program is sanctions. The draft agreement fails to provide sanctions, and without sanctions for noncompliance the annex and draft agreement are "paper tigers." Sanctions provide not only a compliance

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327 NAAEC, *supra* note 293, Part 5.

328 *Id.*

329 *See* TEXAS GOVERNOR, *supra* note 194.

incentive, but also assurance that those who do violate the agreement will be punished and any economic gain from noncompliance recouped. A potential solution is to include language that any dispute referred to the CECC may also be considered for imposition of a monetary enforcement assessment.[330]

The only environmental certainty concerning NAFTA is that it will transform the border area in the years to come. The question is how to seize the opportunities presented and turn them into environmental benefits rather than detriments. Admittedly, while the environmental remedies seem clear, they can become clouded with the addition of American and Mexican politics. But for the citizens of El Paso and Juarez, the creation of an IAQMD is a first step in controlling their common air pollution problems.

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[330] NAACE, *supra* note 291, Part Five.

APPENDIX

ANNEX VI TO THE AGREEMENT BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF THE UNITED MEXICAN STATES ON COOPERATION FOR THE PROTECTION AND IMPROVEMENT OF THE ENVIRONMENT IN THE BORDER AREA

AGREEMENT OF COOPERATION BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF THE UNITED MEXICAN STATES REGARDING THE FORMATION AND PURPOSES OF AN INTERNATIONAL AIR QUALITY MANAGEMENT DISTRICT

The Government of the United States of America ("the United States") and the Government of the United Mexican States ("Mexico") ("the Parties"),

Recognizing that substantial improvement of air quality is needed in their common border zone;

Realizing that such air quality improvement can occur most effectively and efficiently with increased cooperation;

Recognizing that the formation of a joint district to work for such air quality improvement is desirable in the El Paso, Texas - Ciudad Juarez, Chihuahua - Dona Ana County, New Mexico area;

Reaffirming Principle 21 of the 1972 Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm, which provides the nations have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other Nations or areas beyond the limits of national jurisdiction;

Recognizing that Article 3 of the Agreement between the Parties on Cooperation for the Protection and Improvement of the Environment in the Border Area of 1983 ("the 1983 Agreement") provides that the Parties may conclude specific arrangements for the solution of common problems in the border areas as annexes to that Agreement,

Have agreed as follows:

ARTICLE I
GENERAL PURPOSE

In cooperation with existing National, State, and Local authorities, the Parties agree to hereby establish an International Air Quality Management District ("IAQMD") on their common border.

ARTICLE II
APPLICABILITY

1. The IAQMD shall encompass the following geographic area of jurisdiction: El Paso County, Texas; Doña Ana County, New Mexico; and the greater Metropolitan Area of Ciudad Juarez, Chihuahua.

2. Nothing in this agreement will supersede the obligations of affected United States and Local authorities or affected Mexico State and Local authorities to meet all existing applicable rules and regulations of the United States and Mexico, respectively.

ARTICLE III
SPECIFIC PURPOSES

The purposes of the IAQMD will be as follows:

(1) to develop a consolidated air emissions inventory and ambient air quality data base

and, using environmental targets established by the Parties, including those based on health considerations,

(2) to develop options for both short-term and long-term air pollution control and prevention measures, including an emergency action plan

(3) to identify optimum, joint control strategies, including an economic incentives-based program to encourage investment in pollution control projects and similar innovative mechanisms of pollution control

(4) to recommend joint control strategies to the respective National Governments

(5) to work with respective National, State, and Local Governments to implement joint control strategies and to promote transboundary transfer technology and skills to facilitate the optimization of such strategies

(6) to educate the general public regarding air quality control issues

(7) to establish procedures to allow effective and efficient communication among the parties

(8) to establish cooperative compliance efforts between the respective governments, provide a forum for citizen participation, and jointly develop recommendations for appropriate remedial actions by the respective governments.

ARTICLE IV
STRUCTURE OF GOVERNING BOARD

The Parties agree to establish a Governing Board ("the Board") for the IAQMD. The Board shall be established according to the following guidelines:

(1) The Board shall be appointed by the Parties. The Board shall consist of representatives from the Federal, State (Texas, New Mexico, Chihuahua) and Local (El Paso, Ciudad Juarez, Doña Ana County) Governments. The Parties shall each appoint two members-at-large representing the public, including at least one each representing local industry. All Board members shall serve a three year term.

(2) The Board shall have the authority to appoint an Executive Director and technical staff to enable it to carry out its responsibilities. The size and composition of the staff shall be determined by the Board, consistent with operational needs.

(3) The Parties agree to provide sufficient funding and personnel to ensure the IAQMD's functions can be adequately carried out.

ARTICLE V
RELEASE OF INFORMATION TO THIRD PARTIES

The Parties shall follow the guidelines set for in Article 16 of the 1983 Agreement related to the procedure for sharing technical information with third parties and Article VI of Annex V of the 1983 Agreement for establishing procedures to protect the confidentiality of proprietary or sensitive information conveyed between the Parties pursuant to this Annex.

ARTICLE VI
EFFECT ON OTHER INSTRUMENTS

Nothing in this Annex or its appendices shall be construed to prejudice other existing or future agreements concluded between the Parties or affect the rights or obligations of the Parties under international agreements to which they are a party.

ARTICLE VII
IMPLEMENTATION

Implementation of this Annex is dependent upon the availability of sufficient funding.

ARTICLE VIII
APPENDICES

Appendices to this Annex may be added through an exchange of diplomatic notes and shall form an integral part of this Annex.

ARTICLE IX
AMENDMENT

This Annex, and any appendices added thereto, may be amended by mutual agreement of the Parties through an exchange of diplomatic notes.

ARTICLE X
REVIEW

The National Coordinators under the 1983 Agreement or their designees shall meet at least every year from the date of entry into force of this Annex, at a time and place to be mutually agreed upon, in order to review the effectiveness of its implementation and to agree on whatever individual and joint measures are necessary to improve such effectiveness.

ARTICLE XI
ENTRY INTO FORCE

This Annex shall enter into force after signature when each Party has informed the other through diplomatic notes that it has completed the internal procedures necessary for the Annex to enter into force.

ARTICLE XII
TERMINATION

This Annex shall remain in force indefinitely, unless one of the Parties notifies the other in writing through diplomatic channels of its desire to terminate it, in which case the Annex shall terminate six months after the date of such written notification.

IN WITNESS WHEREOF, the undersigned, being duly authorized by their respective Governments, have signed this Annex.

Done at _____(location)_____, in duplicate, this _____(date)_____ in the English and Spanish languages, both texts being equally authentic.

FOR THE GOVERNMENT OF THE THE UNITED STATES OF AMERICA:	FOR THE GOVERNMENT OF UNITED MEXICAN STATES:
_____	_____

DRAFT AGREEMENT TO ESTABLISH AND EMPOWER AN INTERNATIONAL AIR QUALITY MANAGEMENT DISTRICT

ARTICLE I. Purpose and Basis for Agreement

(1) International environmental problems result from transboundary air pollution in the Paso Del Norte region encompassing El Paso, Texas; Cuidad Juarez, Chihuahua; and Sunland Park, New Mexico (Region). Geography and climate contribute to air pollution problems that do not respect political boundaries, resulting in a common airshed.

(2) Public concern over health and welfare effects of air pollution mandate air quality be managed in a coordinated and comprehensive manner.

(3) The Government of the United States of America (U.S.) and the Government of the United Mexican States (Mexico) have agreed in Annex V to the 1983 La Paz Agreement to work together on common urban air pollution transport issues and have cooperated together on Annex V activities in the Paso Del Norte region for over four years. Greater cooperation is desirable and needed to solve common air pollution problems.

(4) Per Article XI of Annex V, the U.S. and Mexico agree that join measures and management are needed to improve the effectiveness of air pollution abatement programs within the Region.

(5) To successfully implement a comprehensive air pollution control program to protect public health and welfare, the U.S. and Mexico hereby agree to establish an International Air Quality Management District (IAQMD).

ARTICLE II. Management of the IAQMD

(1) The IAQMD shall be managed by a Board appointed by the U.S. and Mexico. The Board shall consist of representatives from the federal, state (Texas, New Mexico, and Chihuahua) and local (El Paso, Ciudad Juarez, and Sunland Park) governments. The U.S. and Mexico shall each appoint two members-at-large representing the public. All Board members shall serve a three-year term.

(2) The Board shall work to establish relationships with existing institutions and agencies that have had a significant role in planning, implementing or managing air quality programs in the Region.

(3) The Board is authorized to establish a governance method consistent with the requirements and spirit of this Memorandum of Agreement. The Board is authorized to establish policies and direct the IAQMD's activities, as needed to effect those policies.

(4) The operations of the IAQMD may be carried out by a bilaterally representative staff appointed by the Board. The size and composition of the staff shall be determined by the board, consistent with operational needs. The Board may designate a U.S. and Mexican executive director to supervise daily operations.

(5) The U.S. and Mexico agree to provide sufficient funding and personnel to ensure that the functions and activities of the IAQMD can be adequately carried out, subject to the availability of funds.

ARTICLE III. Powers and Duties of the IAQMD

The IAQMD shall have the following powers and duties:

(1) Development of ambient air quality standards/goals

The IAQMD shall develop air quality goals for the Region that promote expeditious attainment of U.S. national ambient air quality standards and la Norma Mexicana de Calidad del Aire.

(2) Development of pollution control and prevention plan

Within ___ months of its formation, the IAQMD shall develop a plan that will be effective in meeting air quality standards (or goals) for the Region. The plan shall include:

(a) An emissions inventory of air pollution sources within the Region, which shall be updated at least annually. The IAQMD shall (i) examine and evaluate all non-confidential emissions information throughout the airshed; (ii) develop estimates of emissions from minor, areawide and mobile sources which are not otherwise required to monitor and report emissions; (iii) compile a joint data base containing such emissions information; and (iv) accompany air pollution officials in any of the three localities on inspections, site visits, nonconfidential enforcement conferences, and other official business activities.

(b) A comprehensive characterization of ambient air quality conditions throughout the Region. The IAQMD shall: (1) examine and evaluate all ambient air quality data collected by any governmental entity in the Region, and compile a joint data base, which will be publicly accessible; and (2) evaluate the feasibility of establishing and operating an ambient air quality monitoring program for the Region, including procedures for compiling and analyzing a joint data base.

(c) Guidelines for air pollution control and prevention programs and practices that will be effective in meeting air quality standards/goals for the Region. The IAQMD shall identify a set of emission limitations, operation and management practices, and other measures (including, transportation control measures, automobile inspection

and maintenance programs, use of alternative clean-burning fuels) as may be necessary to achieve air quality goals.

(d) Economic incentives to promote investment in the most cost-effective methods of pollution abatement. The IAQMD shall establish criteria and procedures for evaluating, authorizing, and recording the creation, use, and transfer of emission reduction credits throughout the Region. Such criteria shall be functionally consistent with U.S. requirements for emission reduction credits.

(e) A program for ensuring that economic and industrial growth in the Region occurs in a manner consistent with timely achievement of air quality goals. This may include a preconstruction review program to assist in proposed new sources in obtaining offsetting emission reductions to ensure reasonable progress to achieving air quality goals.

(3) Development of mechanisms to ensure that the necessary pollution reduction and prevention programs are developed, implemented and enforced on a binational basis, including:

(a) Establishing reporting and recordkeeping requirements consistent with applicable statutes and regulations or as may be necessary to ensure efficient and effective tracking of compliance status.

(b) Monitoring compliance efforts of the respective governments, developing recommendations for remedial actions, and providing a forum for dispute resolution in cases of continuing noncompliance (including referral to the North American Commission For Environmental Cooperation Council).

(c) Providing a forum for citizen complaints regarding air quality problems and developing recommendations for remedial actions.

(4) Dissemination of public information, including:

(a) Preparation of an annual report describing air quality conditions and trends, the status of pollution control programs, and activities and issues related to compliance.

(b) Preparation of emergency episode plan, including procedures for public notification and implementation of remedial actions.

ARTICLE IV. Public Participation and Administrative Procedures

(1) The IAQMD shall establish procedures to ensure adequate public participation in its activities, including, at a minimum, provisions for public notice, comment and opportunity for public hearings on any guidelines, plans, and standards proposed for adoption and during the preconstruction review of major stationary sources.

(2) The IAQMD shall establish procedures to allow affected members of the public to submit complaints and petitions to the Board. The Board shall consider and act on such requests within ___ days.

(3) Nothing in this Agreement limits the right of any person adversely affected by a decision of the Board to appeal that decision, as provided by applicable federal and state statutes.

ARTICLE V. Length, Amendment and Termination of Agreement

(1) The U.S. and Mexico agree to support the formation and efficient operation of the IAQMD for a trial period of three years. The U.S. and Mexico agree to review and suggest changes to the operation of the IAQMD each year, by means of a comprehensive report on activities to be prepared by the Board and presented to the National Environmental Coordinators meeting.

(2) This Agreement shall remain in effect for a three year trial period, unless one of the parties notifies the other in writing through diplomatic channels of its desire to terminate the Agreement, in which case it shall terminate six months from the date of notification. Unless otherwise agreed, such termination shall not affect the validity of any agreements made under this Agreement.

(3) This Agreement may be amended and the trial period extended by mutual agreement of the parties through an exchange of diplomatic notes.