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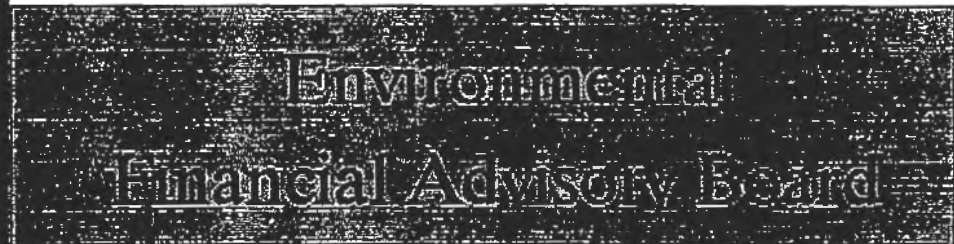
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**FINANCING THE REMEDIATION OF HAZARDOUS
WASTE SITES UNDER THE NORTH AMERICAN
FREE TRADE AGREEMENT**

This report has not been reviewed for approval by the U.S. Environmental Protection Agency; and hence, the views and opinions expressed in the report do not necessarily represent those of the Agency or any other agencies in the Federal Government.

April 1994

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APR 29 1991

Honorable Carol M. Browner
Administrator
U.S. Environmental Protection Agency
Washington, D.C. 20460

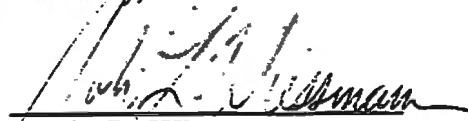
Dear Administrator Browner:

On behalf of the Environmental Financial Advisory Board (EFAB), we are very pleased to transmit to you the EFAB Report, "Financing the Remediation of Hazardous Waste Sites under the North American Free Trade Agreement." The Agency asked the Board to examine the financing of Mexican border remediation efforts, an important issue in the discussions between the U.S. and Mexico on the implementation of NAFTA.

The Board believes several principles will facilitate the remediation of hazardous waste disposal along the Mexican border -- first, those who pollute must pay for their pollution; second, Mexico should continue its enforcement efforts, which have been impressive over recent years and should lead to further identification of the polluters which generate hazardous waste; and third, a finance program to remediate sites should be developed which would have strong incentives for polluters to undertake the remediation, and strong disincentives for doing otherwise. In the report we have structured a finance program to consist of: (1) long-term loans from the newly created North American Development Bank to identified polluters, (2) the establishment of a General Remediation Fund financed by polluters not causally linked to individual sites, (3) the creation of tax increment districts and incremental tax proceeds, and (4) the creation of a series of financial incentives for private sector polluters to undertake remediation of sites to which they either can or cannot be causally linked.

The above approach strives to develop an effective system of rewards and penalties whereby polluters will have the incentive to work with, rather than against, the government. We believe this approach would be useful in the work of the newly created binational agencies, i.e. the Border Environmental Cooperation Commission and the North American Development Bank. The Board offers its assistance to the Administrator in your capacities as a director of these agencies, and we are also available at your convenience to discuss this report and to provide any further analyses you may require.

Sincerely,


Robin L. Wiessmann
Chair, Environmental
Financial Advisory Board


Herbert Barrack
Executive Director, Environmental
Financial Advisory Board

**Report of the
Environmental Financial Advisory Board
of the
United States Environmental Protection Agency**

**Financing the Remediation of Hazardous Waste Sites
under the
North American Free Trade Agreement**

Pursuant to the discussions between the Government of Mexico and the Government of the United States concerning the implementation of the North American Free Trade Agreement (NAFTA), the Administrator of the Environmental Protection Agency (EPA) requested the advice and recommendation of the Board regarding the financing of remediation efforts at hazardous waste sites along the Mexican border. The Board delegated this request to the International Committee ("the Committee"). Although there is no reason why the principles described in this report could not be applied to the United States' side of the border, the Committee's comments are directed toward remediation efforts in Mexico.

On November 19, 1993, the Committee met in Washington, D.C., and received a presentation from EPA staff regarding hazardous waste conditions in Mexico, Mexican laws regarding the disposal of hazardous waste, and the status of compliance with such laws.

There are three principal sources of hazardous waste along the Mexican border: Mexican industry, *maquiladoras*, and what might be termed casual generators. *Maquiladoras* are assembly plants, many of which are American-

owned, which receive parts manufactured in the United States, assemble them, and return the finished product to the United States. ("*Maquila*" is a Spanish term which originally referred to that portion of flour paid to a miller for milling a farmer's grain; more recently, it has loosely come to mean the process of sending out work.) By the term "casual generators", is meant the plethora of filling stations, garages and other light industrial operations, which may or may not be licensed, which use materials which, when disposed of, constitute hazardous waste.

Mexico has adopted a series of strict hazardous waste disposal regulations and standards. It has also adopted strong administrative sanctions to enforce them. Fines may be imposed on a daily basis for non-compliance; and, in extreme cases, an operator's business license may be revoked. In 1988, new measures were instituted which allow for plant closings upon failure to pass industrial inspection. Conditions for reopening plants are formal and include written acknowledgment of the violation and submission and approval of a remediation proposal by the National Institute of Ecology. In many cases surety bonds are required to be posted to secure clean-up or correction of violations.

There are approximately 2,000 *maquiladoras* in Mexico. A 1991 survey of 1,450 of such facilities by the US General Accounting Office found that some 800 were producing hazardous waste but that only 446 were registered at that time with the Mexican Government. Mexican law provides that hazardous waste generated in the *maquiladora* industry must be repatriated to the country of origin of the raw materials. Thus, to the extent that *maquiladoras* import hazardous substances from the United States, they are required under Mexican law to repatriate them. The La Paz Agreement of 1983, to which both the United States and Mexico are signatories, obligates the U.S. to accept return of hazardous waste generated from raw materials which originate in the U.S. and are shipped to *maquiladoras* in accordance with U.S. regulations.

Lawrence I. Sperling, Senior Attorney-Advisor with the International Enforcement Program in the Office of Enforcement at EPA, reported that over the last three years, increasing cooperation has developed between EPA and its Mexican counterpart, the Secretariat for Social Development (SEDESOL). The

Administration of President Carlos Salinas de Gortari has dedicated a substantial amount of both human and financial resources to a massive enforcement effort especially along the border. To expand and improve enforcement activities, Mexico established, in 1992, an office of Attorney General for the Protection of the Environment within SEDESOL.

The enforcement efforts of SEDESOL over the last few years have been impressive. In 1982-84, slightly over 1,000 industrial inspections were conducted in Mexico. In the period, 1991-93, well over 11,000 such inspections were made. Of the 4,580 industrial inspections conducted in 1992, 3,963 resulted in citations for non-compliance. Of these, 3,144 resulted in fines or other enforcement actions, 714 resulted in temporary or partial shutdown orders, and 105 resulted in the permanent shutdown of facilities. The EPA staff have expressed a high degree of confidence in SEDESOL's enforcement efforts and have praised the high degree of cooperation between the two agencies.

The Committee members were most interested in the comments of the EPA staff because they believe that without strong statutes and well enforced sanctions all other efforts to control and dispose of hazardous waste will ultimately be fruitless.

In considering the problem of enforcement and the identification of polluters responsible for specific contaminated sites, the Committee divided the issue into two major natural categories. They are:

Category A - contaminated sites where one or more polluters could be causally linked to the contamination at such site.

Category B - contaminated sites where no specific polluters could be causally linked to such sites.

In considering the problem of financing remediation efforts for contaminated sites, the Committee adopted a series of seven principles. The first two principles relate to the issue in general. They are:

- * In accord with the principles of the Stockholm Convention of 1972, those who pollute must pay for their pollution.
- * Enforcement action should lead to the identification of the polluters which generate hazardous waste.

The Committee then adopted two principles which should apply to Category A sites where specific polluters can be causally associated with specific sites. They are:

- * The principal private sector polluters should be given the first opportunity to remediate, assuming such remediation is approved by SEDESOL.
- * If a polluter undertakes remediation in good faith, government should support and facilitate such efforts to the greatest extent possible short of public subsidies.

Finally, the Committee adopted three additional principles to be applied in Category B circumstances where no specific polluter(s) can be causally associated with particular sites. These principles are as follows:

- * In circumstances where particular companies are known to use or produce hazardous substances, but where they can not satisfactorily account for the disposal of such materials, then these polluters should be required to pay into a General Remediation Fund (the Fund), which should be created for this specific purpose.
- * Polluters, which cannot properly account for the disposal of their hazardous wastes, should be required to pay into the Fund based on the quantity of hazardous substances used or produced in their businesses and the number of years such firms have been in business at their current sites.

* The Fund should be used in conjunction with the other financial incentives described below to remediate Category B contaminated sites which cannot be causally linked to specific polluters.

In accord with the above principles, the Committee recommends that a finance program for the remediation of hazardous waste sites be created which incorporates both carrots and sticks, i.e., strong incentives and strong disincentives, and also provides for the financing of site remediation where a particular polluter cannot be tied to a particular site.

The Committee believes that both strong incentives and strong disincentives are necessary to bring the private sector into the remediation process. Traditional remediation efforts have historically depended on the absolute identification of polluters and the establishment of a causal link between specific polluters and specific sites. This process can be extremely time consuming, costly and difficult. It may be impossible in many instances. Where it is impossible, an alternative remediation facility should be created, as described below. But even in these Category B circumstances, incentives and disincentives should be created to induce the participation of the private sector to the maximum extent possible.

In Category A circumstances, where specific polluters can be causally linked to specific contaminated sites, the Committee believes it would be most effective to design, at the onset, a program which encourages private sector polluters to come forward and to work with the government in a cooperative effort to remediate sites. The Committee feels strongly that, if both the system of rewards and penalties is strong enough, polluters will have the incentive to work with the government rather than against it.

CATEGORY A SITES

For Category A sites, bearing in mind the beneficial effects which a well-designed program can have on the process of identifying responsible and

cooperative polluters, the Committee recommends a program containing the following four elements:

1) If identified polluters will not undertake remediation efforts in a timely manner, then the Government of Mexico, or any appropriate political subdivision, should immediately undertake such efforts to the end that the cost of such remediation efforts be levied against the offending polluter in a manner in which such costs are immediately due and payable. In addition to the normal judicial procedure under Mexican law for collecting such sums, additional sanctions, such as fines for non-payment and the temporary closure of the polluter's facility until such time as the debt is discharged, should also be considered.

This element constitutes the disincentive, or stick, approach. Under this alternative, polluters can expect to pay considerably more for remediation than if they had undertaken it themselves. This statement is in no way meant in derogation of the Mexican government. It is simply a fact of life that whenever public funds are involved, in any country, the time, effort and expense of undertaking projects increases significantly because of the need to observe all of the appropriate safeguards of public funds. The other disincentive factor, of course, is that the polluter will be required to pay immediately for the remediation performed by the government as well as any fines or penalties which may be applicable. If the polluter does not cooperate, he will not be offered any financial incentives.

2) On the other hand, if the polluter undertakes, on its own, in good faith, the appropriate remediation efforts and effectively remediates the offending site to the satisfaction of SEDESOL, then the government should extend certain financial assistance to the remediating polluter to facilitate such efforts. In addition, remediating a site to the satisfaction of SEDESOL should also limit the polluter's legal liability for such site. This constitutes the incentive, or carrot, approach.

3) One form of financial assistance which could be extended is the sponsorship or support of a loan to the polluter from the North American Development Bank (NADBank) which is being created pursuant to the NAFTA.

In this regard, the NADBank should be encouraged to offer the longest possible amortization period for such loans. If possible, terms as long as fifty to one hundred years should be offered. There are two reasons why such long amortization periods are important. The first is that it will simply reduce the remediator's financial burden by lowering his annual payments. The second is that it will dramatically enhance the effect of the second form of financial assistance described below. Moreover, it should be noted that there are recent precedents for fifty to one hundred year terms in the international capital markets which will undoubtedly be used to fund the NADBank's contemplated borrowings.

In addition, the NADBank should be encouraged to offer the lowest possible interest rate, short of public subsidy, on such loans as well. Under the structure contemplated by NAFTA, the NADBank should be rated "AAA" by international credit rating agencies. If possible, such rates should be passed along to polluters that remediate in good faith. This will be a major incentive since few companies will be able to float long-term debt at AAA rates only on the strength of their own credit.

4) A second form of financial assistance would involve the creation of tax increment districts in the environs of the site to be remediated. A tax increment district is a financial instrumentality in use in many areas throughout the United States. It involves freezing the amount of real property taxes paid to traditional governmental recipients of such taxes for property within the district based on the levels of taxation prior to the creation of the district. Thus, the traditional governmental recipients of such taxes suffer no diminution of revenues. On the other hand, as property values within the district increase, the taxes paid with respect to the incremental value only are used for other purposes.

In this case, it is proposed that the good-faith remediator be rewarded with part of the benefit of his remediation. In specific, it is proposed that the taxes collected based on the incremental value of real property in and around remediated hazardous waste sites inure to the credit of the polluters that undertook in good faith to remediate such sites. It is proposed that the incremental tax receipts be paid to the NADBank to buy down the outstanding

principal balance of the loan to the remediating polluter. When the remediator's loan is fully amortized, the incremental tax revenues can revert to the appropriate government jurisdictions.

Under such circumstances, the extraordinarily long amortization period proposed for the NADBank loan to the remediating polluter assumes great significance, since the longer the loan period, the more beneficial will be the mitigating effects of the tax increment revenues on the cost burden of the remediating polluter. Assuming that a tax increment district would encompass not only the site itself but also a substantial amount of adjoining property (which actually enjoyed significant economic benefits from the successful remediation), over thirty, fifty or even one hundred years, the incremental tax revenues from such properties should dramatically reduce the remediator's financial burden. Even small increments in tax revenues will, over a fifty to one hundred year period, drastically reduce the remediator's loan.

CATEGORY B SITES

For Category B sites, involving polluters who cannot be causally linked to specific sites, the Committee's recommends a program containing the following four elements:

- 1) A General Remediation Fund should be created under the auspices of the NADBank. The Fund should be the primary financial resource for the remediation of Category B sites. Polluters which cannot properly account for the disposal of their hazardous wastes should be compelled to pay into the Fund based on the estimated amount of hazardous waste they have produced over time. Payment into the Fund constitutes the stick, or disincentive.

- 2) Polluters which are required to pay into the Fund should be offered incentives to more actively participate in the hazardous waste site remediation process. This is especially true of polluters which are required to make substantial payments into the Fund. In these cases, a polluter should be offered the opportunity to take the responsibility for remediating a particular

site, regardless of the fact that such polluter cannot be causally linked to such site. This is where the carrots, or incentives, come in. There are four proposed incentives:

A) The first incentive would be that, once the polluter and SEDESOL have agreed on the scope of work to be done at a particular site as well as the estimated costs associated with the agreed upon scope of work at such site, those costs would be divided into two components. The first component would be for the account of the polluter, which is the amount the polluter was required to pay to the Fund. The second component would be for the account of the Fund. This would be the balance of monies needed pursuant to the agreed remediation cost estimate. The Fund's component of the cost would be expressed in absolute dollars (pesos) not in a percentage. Thus the Fund would be required to pay X dollars regardless of actual cost. Thus, if, because of private sector efficiencies, the polluter were able to accomplish the site remediation to the satisfaction of SEDESOL at a cost below the estimate, the polluter would be able to reduce its own contribution on a dollar for dollar basis.

B) The second incentive would be to offer the polluter who takes responsibility for the remediation of a Category B site the opportunity to finance his component of the remediation cost through the same long-term loan facility described above for Category A sites.

C) The third incentive would be to offer the actual ownership of the Category B site, itself, to the polluter who takes responsibility for the remediation of such site. This incentive should be regarded as an option. Its value would depend on the location of the contaminated site and the estimated value of the site after remediation.

D) A fourth incentive, which should also be regarded as an option, is that in circumstances where a polluter is offered the ownership of a Category B site which he elects to remediate, he could also be offered a generous, long-term real property tax abatement. This would enhance the economic value of the remediated land.

3) Regardless of whether a private sector polluter or the Mexican government or a political subdivision thereof undertakes the responsibility for remediation of a Category B site, a tax increment district, as described above for Category A sites, should be created encompassing properties around such site. In this case, however, the incremental property tax payments from such Category B tax increment districts should be made into the Fund to increase the amount of money in the Fund. In this regard, it should be noted that once an annual stream of incremental property tax payments is regularly being made into the Fund, this revenue stream can be capitalized by the NADBank through the issuance of debt securitized by such revenue streams. Thus, even small annual incremental property tax payments from Category B tax increment districts can have a significant, near-term effect on the amount of monies available for Category B site remediation.

4) In conjunction with Category B site remediation efforts, consideration should be given to the prioritization of sites for remediation. Sites which pose acute threats to public health should always have highest priority. But in circumstances where sites do not pose an acute threat to public health, consideration should be given to ranking the sites on the basis of their post-remediation economic value. There would be two benefits to this approach. First, this would naturally increase the value of the incentives described above for private sector polluters, to undertake the remediation of Category B sites. Second, this would also increase the revenue potential of the proposed tax increment districts which has the further effect of increasing the amount of monies in the Fund available for Category B site remediation.

* * * * *

In summary, the Committee believes that the hazardous waste enforcement efforts of SEDESOL and the degree to which it is cooperating with EPA will significantly reduce the hazardous waste problem along the border. The Committee suggests that such efforts can be strengthened and augmented by the development of a financing program which would create strong

incentives for polluters to undertake the remediation of the hazardous waste sites, as well as a strong disincentive for not undertaking such remediation. Such a financing program would include:

- * Loans from the NADBank to identified polluters, who elect to remediate sites to which they have been causally linked, at the lowest, unsubsidized interest rates for terms of up to fifty or even one hundred years.
- * The creation of a General Remediation Fund into which polluters would pay who could not be causally linked to individual sites; and the use of such Fund as the primary financial resource for the remediation of sites which cannot be causally linked to specific polluters.
- * The creation of tax increment districts encompassing the property benefiting from the remediation, and the use of the incremental tax proceeds to buy down the principal on NADBank loans to remediating polluters or to support the efforts of the General Remediation Fund.
- * The creation of a series of financial incentives for private sector polluters to undertake the remediation of hazardous waste sites to which they either could, or could not, be causally linked.

The Committee believes that such a program, incorporating the above elements, will greatly facilitate the remediation of hazardous waste disposal sites along the Mexican border, especially when viewed against alternatives which involve government remediation at greater expense and at far more onerous financial terms to offending polluters.