“Environmental Insurance as Facilitator in Brownfields Transactions”

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Abstract. This analysis provides an analytical framework which may be used by the potential seller of contaminated real properties to determine whether these transfers make economic sense in today’s marketplace. This analysis concludes that the average owner of such “brownfields” sites can realize a greater expected value by selling such sites than by allowing them to sit idle. Further, this analysis concludes that the average seller of contaminated properties can realize a higher expected return through the use of environmental insurance in such situations.

1. Introduction

For several years now, individuals in both the public and private sectors have searched for innovative solutions to revitalizing the urban centers of the large industrial cities of the United States.1 One impediment to such efforts is the large number of contaminated properties that lie vacant at the heart of many such cities. Known as brownfields, these sites are defined as abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. Generally speaking, the cleanup and re-utilization of brownfields is envisioned as being the key to revitalization of America’s inner cities, and as the beginning of an urban renewal process that can result in a cleaner environment, new jobs, an enhanced tax base, and a sense of optimism about the future.2
Unlike with other environmentally-related problems, however, the federal government seems to feel that the involvement of private parties is essential to resolving the brownfields crisis. It is not clear what the reasons are for this attempt at a public-private partnership. It could be due to a renewed sense of cooperation with corporate America, in recognition of the failures of previous purely public efforts, and/or caused by sheer desperation in recognition of the magnitude of this crisis.

This paper makes the case for the use of environmental insurance to facilitate private participation in many brownfields transactions by reducing the cost of capital for such projects and by eliminating much of the uncertainty associated with cleanup costs should contamination be discovered after the land is purchased and redeveloped. In doing so, we focus on the decision faced by many institutional and individual owners of real property: namely, whether (i) to allow properties that may be contaminated to sit idle in the hopes that in doing so potential environmental liability can be avoided, or (ii) to sell these properties to redevelopers who can clean up any existing contamination and reuse the land for other projects.

2. A Typical Scenario

Consider the following hypothetical scenario, which characterizes the situation in many urban areas today. Selling Company, Inc. ("SELLCO") currently owns an abandoned chemical plant in the heart of Oldtown. Due to rising crime rates and property taxes, SELLCO closed its operations in Oldtown well over a decade ago to move to greenfield
sites in the surrounding suburbs of Newburg and Greenburg. In addition to offering attractive land prices and property taxes, the suburbs were desirable for other intangible reasons. Generally speaking, the employees of companies like SELLCO chose to live in the suburbs, and would rather drive their cars to work than take commuter trains to downtown Oldtown.

In the last few years, however, the situation has changed dramatically. Due to the high demand for suburban real estate, land prices and related property taxes in the suburbs are now actually more expensive than for many prime downtown locations. Thanks to urban renewal efforts, Oldtown is once again an unparalleled shopping and entertainment center. Accordingly, a sizable share of the workforce, most notably young professionals, has moved back to Oldtown, preferring the sophisticated urban lifestyle. As might be expected, developers are snapping up old industrial properties and redeveloping them for a variety of uses. One such real estate development company, Real Estate Company, LLC (REALCO) has had its eye on SELLCO’s abandoned plant for some time now. The location is ideal, being minutes away from Oldtown’s central business district.

But there is one problem. Being the site of a former chemical plant, there is the strong possibility that the site may have been contaminated. While this has never been proven, or even investigated for that matter, the possibility has been enough to discourage development. SELLCO would prefer not to sell the property, as this act, and the accompanying environmental surveys and excavation which will inevitably be demanded by any potential purchaser, would greatly increase the likelihood of the discovery of
contamination on the site, exposing SELLCO to environmental liability. Similarly, REALCO does not wish to expose itself to environmental liability by purchasing the old SELLCO site, but the potential for profits which may be realized in the redevelopment of this site are simply too great to ignore.

During the last year the president of REALCO has heard of several new environmental insurance products. While he remains skeptical, he has been told by his contemporaries in the industry that these products address many of the concerns of both purchasers and sellers of contaminated properties. He has also been told that these products are attractive to the lenders that usually are involved in such transactions, and might even encourage the government to contribute tax dollars to such ventures. Greatly encouraged, he calls his old friend, the CEO of SELLCO, and asks for a meeting to discuss the potential sale of the old SELLCO site. What should the CEO of SELLCO do?

3. Environmental Insurance as Facilitator

The answer to the question "what should the CEO of SELLCO do?" can only be answered by a very fact-specific analysis. Environmental insurance cannot magically make every brownfields transaction or redevelopment a profitable endeavor. In the game of real estate development, the economic difference between the options of (i) cleaning up and redeveloping a brownfields site, or (ii) leaving a site in its contaminated state can be very slight indeed. In such situations, environmental insurance can be a deciding factor determining whether private parties are likely to realize expected net benefits.
through the redevelopment of a brownfields site. If so, insurance can facilitate the cooperation of all interested parties so as to make the redevelopment plan a reality.

More specifically, environmental insurance can ease the concerns of both sellers and purchasers of contaminated properties with respect to the creation and allocation of environmental liabilities. It can encourage lenders to provide capital to such ventures, often at a more favorable rate. And it can convince both federal and state governments to provide scarce funds and resources to a particular brownfields project. In short, environmental insurance can facilitate the process by which brownfields deals get done, creating an economically feasible alternative to allowing a contaminated site to lie vacant which would not otherwise exist.

3.1 Facilitator to Sellers

Our analysis begins with the seller of a brownfields site who must decide whether to put the contaminated or potentially contaminated site on the market. The seller knows that it is potentially liable for any contamination discovered on its land and is responsible for the resulting cleanup costs. Further, if the seller is an issuer of publicly traded securities it must report such findings. Nevertheless, an economically rational potential seller will want to dispose of the property if it can get a high enough price to cover the cost of cleaning up the property and to yield a higher expected return than would be realized by allowing the property to remain an unused corporate site with the unproven specter of possible contamination. In addition, such a seller can reap the intangible rewards of
bolstering its public image by playing a proactive role in the revitalization of the community in which its property is located.

Thus, the tradeoff facing the property owner in choosing between the two options it faces (not selling and selling) can be put rather simply. If the seller allows its property to lie idle, it is not likely that any contamination will be discovered, but there is potential revenue lost in keeping the parcel of land in limbo. If the seller tries to sell the site to realize this revenue, however, most potential purchasers will require, at a minimum, that the environmental history of the site be investigated. This makes the discovery of contamination, if it exists, likely and the potential seller responsible for cleanup of any contamination uncovered, even if such contamination is discovered after the site is sold.9

The decision as to whether to entertain the sale of a brownfields site, therefore, depends on whether the potential seller can successfully estimate (i) the probability that contamination will ever be discovered on the property, and (ii) the costs likely to be incurred in remediating the site given such a discovery. Should the potential for profit in selling the property outweigh the potential cost of remediating the site, the seller's decision then turns on the certainty with which it can rid itself of any unanticipated residual environmental liability at the same time it rids itself of the property.

As was mentioned, the seller is not necessarily off the hook merely because it transfers title to a potentially contaminated property. It is clear that should contamination be discovered prior to sale, the cost of remediation will either be borne directly by the seller,
if it is forced to clean up the site, or indirectly as an offset to the purchase price should the purchaser assume the burden of remediation. This is not terribly troublesome, as this expense can be factored into the potential seller's decision calculus regarding whether to sell the brownfields property. What does concern the potential seller, however, is the possibility, however slight, that contamination may only be discovered after the sale of the property, despite the seller's best efforts to discover said contamination. Obviously, the specter of unanticipated costs related to undiscovered contamination is a threat to rational decisionmaking based on whether expected profits will exceed potential costs and, accordingly, whether the sale of a brownfields property makes economic sense.

Fortunately, Property Transfer Insurance is currently available which covers the expense of remediating new, previously unknown, pockets of contamination which are not discovered until after the sale, redevelopment and, if necessary, remediation of a potential brownfields site, thereby easing the seller's concerns. Should such a site investigation not uncover contamination at a brownfields site, but be subsequently found after the parcel is sold, a Property Transfer policy will, less a deductible and within policy limits, pay for the expenses of remediating any subsequently discovered contamination. Although the purchaser of the property, as landowner, would hold title to this policy, the cost of such insurance would be factored into the selling price of the property. Most important, the seller would be assured that the costs of remediating any contamination discovered after the sale of the property would not come back to haunt him or her.
Generally speaking, no brownfields property is ever redeveloped without a purchaser. Whether that purchaser is a developer seeking prime real estate or a government agency anxious to bring new jobs and hope to an ailing community, there can be no deal unless someone wants the property in question.

Often, it is difficult for a purchaser, who would be perfectly satisfactory to the seller if the transaction involved a greenfields site, to qualify as the purchaser in a brownfields transaction. The purchaser of a property with potential or known environmental issues must qualify financially before the seller will feel comfortable giving control of the property to the purchaser. Since exposing the facility to redevelopment increases the chances of a possible contamination-related claims, not to mention regulatory action, leaving the site closed is preferable to inviting possible trouble, without some assurance that the new owner has the fiscal strength and financial resources to handle such trouble. As entities which redevelop properties are often single-purpose entities, with intentionally limited funding so as to limit liability of investors, many will not qualify as brownfields purchasers.

Insurance can help in this type of situation. With a Property Transfer Liability insurance policy in place, the ongoing possibility of environmental claims occurring even after remediation takes place, is covered. Or, if an environmental audit does not initially reveal contamination, the Property Transfer Liability can cover the consequences of previously unknown, undiscovered contamination. In effect, then, the purchasers "borrow" the financial strength of the insurer for covering any environmental risk they
face. This can facilitate the eligibility and participation of many potential purchasers who would otherwise only qualify to purchase a greenfields site.

The potential purchaser also needs assurance that remediation of any contamination discovered will be completed within budget, whether uncovered through a site investigation prior to the actual sale of the property or discovered after the transaction has taken place.11 In some unfortunate cases, the actual costs of remediating a brownfields site dwarf preliminary estimates, bankrupting the redeveloping entity and leaving remediation at the project site only partially completed. Environmental insurance, known as Stop-Loss or Cost-Cap insurance, is available to specifically address this risk, assuring that most of the expenses incurred in excess of preliminary estimates are paid by the insurer.11 Such policies will generally charge a premium to cover costs of remediation which exceed an agreed upon "attachment point" up to the limits of liability established in the policy. Attachment points are generally set at some amount slightly higher than the cost estimate.

Consider the following example. Suppose the estimate to complete a remediation project is $5 million. The policy will be triggered by remediation costs exceeding an attachment point, say $5.5 million, and pay cost overruns up to the policy limit, say $10 million. Of course, attachment points and policy limits are flexible, and can be tailored to fit the financial requirements of the transaction. As with all insurance, the more coverage that is desired, the more expensive the corresponding policy is likely to cost. Nevertheless, premiums for this type of insurance have dropped dramatically since first introduced, as
insurers have become more comfortable and experienced with this type of risk. Since remediation at a particular site can be guaranteed within policy limits, insured brownfields projects should be much more attractive to potential purchasers.

Even if the potential purchaser can be assured that any currently required remediation may be accomplished within budget, it may also be concerned that federal and state governmental authorities may eventually revise their definition as to what constitutes an acceptable level of cleanliness to which the property must be remediated, thereby requiring more extensive and thorough future cleanup of known areas of contamination.\textsuperscript{15} Historically, purchasers have attempted to deal with this concern by obtaining appropriate assurances from state and federal environmental officials that once known contamination at a site is remediated to current standards of cleanliness, the government will not require more extensive future remediation.\textsuperscript{16} However, even if such assurances provide sufficient certainty to prospective purchasers of a contaminated property,\textsuperscript{17} they can come at a rather prohibitive price. For example, state and federal parties to such agreements will often require that a restrictive covenant be placed in the land records relating to the property in question, limiting the property to its current uses of record.\textsuperscript{18} This necessarily limits the transferability of the property, and the profitability of the project.

A different way of dealing with this concern is to rely on insurance. Post-Remediation Insurance policies can be obtained to pay for the expenses of re-remediation of known contaminated areas, should federal, state, or local standards become more stringent.\textsuperscript{19} If this type of coverage is purchased by the new property owner, it is often not necessary for
purchasers or sellers to secure difficult-to-obtain assurances from regulatory officials that the present remedial plan will still be considered adequate in the future.

However, many environmental insurers still require a so-called "comfort letter" from state or federal officials, which states merely that no further remedial action is required at a given site as of the time the letter is written, assuming that planned remediation is successfully performed. Such letters are somewhat more informal and easier to obtain than prospective purchaser agreements, as they often allow the government to require further remediation should their clean-up standards subsequently change. Accordingly, they rarely require that a permanent restrictive covenant be placed on the land records with respect to the use of the remediated property. Given the limited protections such letters afford sellers and purchasers, parties to transactions regarding brownfields properties are hesitant to rely exclusively on them. Nevertheless, such assurances are usually enough for environmental insurers to rely upon in issuing Post-Remediation Insurance policies, which will assume the risk should the government subsequently change its mind as to required remediation standards, and will cover the costs of any additional remediation required within policy limits.

3.3 Facilitator to Lenders

Lenders are often the parties which are most interested in the use of environmental insurance. Essentially, lenders wish simply to be repaid, and generally this wish does not
come true if the lender provides funds to a project which is not financially successful. Thus, lenders are understandably concerned that initial remediation be performed within a project's budget, and that subsequently discovered contamination be dealt with in a way that does not overwhelm the revenue generated by the project. If this is not so, the costs of remediation can easily consume any potential profits a project might generate, greatly reducing the probability that a lender will be repaid. Consequently, the use of Cost-Cap, Property Transfer, and Post-Remediation Insurance is as important to lenders as it is to potential buyers and sellers, should the project be financed with debt.

However, the utility of environmental insurance for lenders does not end with the financial success or failure of a brownfields project. When a project fails and is unable to support the repayment of debt incurred to finance it, the usual next step is for the lender to foreclose its mortgage securing the debt, taking the property to either operate or resell in an attempt to recoup its investment. Even this minimal involvement, however, has been interpreted by some courts as being enough to incur CERCLA liability. For example, lenders have been held responsible for the environmental violations of their borrowers should they be forced to foreclose on an environmentally affected property.\textsuperscript{21} Thus, the environmental behavior of borrowers has become of keen interest to lenders.

One might naturally presume that these are precisely the types of risks that lenders are paid to assume, and that the cost of capital is rationally determined by the market to account for this risk. The danger is, of course, that lenders will irrationally avoid the stigma of involvement in brownfields transactions due to this additional risk of
environmental liability assumed by the financial institution itself, raising the cost of capital beyond what is necessary to rationally compensate for the risk involved in a brownfields transaction. Carried to an extreme, this stigma can cause institutions to avoid lending to environmentally affected properties altogether, regardless of the relative risk involved, which unfortunately occurs quite frequently. Environmental insurance can again act as facilitator in such situations, addressing both the rational and irrational concerns of lenders in dealing with the financial and stigmatic affects of lending to brownfields projects and encouraging lenders to participate in the brownfields arena. Currently, Environmental Impairment Liability Insurance is available, which covers the cost of remediating accidental contamination of a property due to present and future operational use of the site. Thus, should borrowers accidentally re-contaminate a site covered by this insurance during its remediation or after its redevelopment, and lenders be forced to foreclose on the property, thereby assuming CERCLA liability in the process, the expenses related to this liability would be covered. Thus, the use of this type of insurance can address these risks with regard to brownfields project lending, simultaneously making more capital available for this purpose and lowering the related costs.

3.4 Facilitator to the Government

Government assistance in the form of tax breaks, which allow investors in qualified brownfields projects to immediately deduct the costs of remediation in the current tax
year rather than to capitalize and deduct said costs over the useful life of the project, can make it economically viable for a brownfields project to occur. The same can be said of outright government grants, which can partially or completely offset the expenses of remediation.

Of course, there are far more potential brownfields projects than can possibly be addressed with the state and federal dollars available. It is here that environmental insurance can again play its role as facilitator, ensuring that in the competition for those scarce dollars, insured brownfields projects are more attractive to those governmental agencies providing financial incentives than are uninsured projects. One primary concern of public entities in providing such assistance is that it be used to actually complete remediation of the site benefitted. As was mentioned, the actual costs of remediating a brownfields site often dwarf preliminary estimates, bankrupting the entity to which aid has been given and leaving remediation at the project site only partially completed. It is much more certain that remediation at an insured brownfields site will actually be successfully completed, thus easing the concerns of officials who award such grants and thereby attracting state and federal dollars, making it much more lucrative for the private parties involved in the sale and redevelopment of a contaminated site.

4. Using Decision Analysis to Evaluate Environmental Insurance

Thus far this paper has concentrated on the qualitative analysis as to how environmental insurance might act as a facilitator in brownfields transactions. But the real questions that
must be answered are quantitative in nature. Do the benefits of environmental insurance offset the costs? And perhaps more importantly, is there a measurable economic benefit to the parties involved in using environmental insurance? Certainly these questions cannot be answered for every potential brownfields project. However, a good starting point is to show at least one realistic scenario where environmental insurance can make it feasible to complete a brownfields transaction that would otherwise not be justifiable.

To illustrate the use of decision analysis, consider the hypothetical decision faced by SELLCO as it ponders whether it should sell its abandoned site to REALCO. Of course, one can analyze this problem from any of the perspectives presented above, as brownfields transactions cannot occur without the participation and cooperation of all of the parties involved. Nevertheless, for the sake of simplicity, we choose to develop our analysis from SELLCO's perspective as the prospective seller of potentially contaminated property.

SELLCO is initially confronted with two options: namely to sell or not to sell the property, the choice between which may be determined by whether or not environmental insurance is available to cover the risk that the property may be contaminated.

4.1 Factors Influencing Choice

*Risk Associated with Property Contamination* In determining whether or not to sell, SELLCO is concerned with two exogenous factors related to holding the property: (i)
whether the property is actually contaminated, and (ii) if it is contaminated, whether
SELLCO will have to pay for remediation. With respect to the first factor, a study of
9,000 environmental audits on a national basis indicates that there is approximately a 10
percent chance that a commercial property will have contamination in excess of
permissible government exposure levels, whether or not the site has been previously
investigated or remediated.30 As the SELLCO property in our scenario is industrial in
nature, we will presume that there is a 30 percent chance that our property requires
remediation.

An examination of the costs of federal and state mandated cleanups at more than 3,000
sites indicates that the cost of remedial action ranges from $102,000 for underground
storage tanks to just over $33 million for Federal National Priority List sites (1991
dollars).31 A study by the RAND Corporation estimates that the average cost to remediate
such sites is approximately $1.2 million.32 We will presume this figure to be applicable
to the SELLCO site.

Turning to the second factor, environmental officials are generally only "successful" in
recouping the costs of remediation 1/3 of the time if the property owner decides not to
sell.33 Further, if the property owner decides to sell and the site is found to be
contaminated after the sale, there will inevitably be litigation to establish who, as between
seller and purchaser, will be held responsible for remediation of the site, as both will have
presumably incurred CERCLA liability. Regardless of the merits of one's case, we will
assume that there is a fifty percent chance that the seller will lose such litigation.34 The
consequences of losing such litigation are dire. The liable party will pay for the expenses of litigation, which average one-third of all remediation expenses or, on average, $400,000.\(^5\) We will assume for the sake of simplicity that should the property owner decide to sell and contamination is discovered prior to transfer, the seller will be solely liable for remediating the property.

*Role of Insurance* The decision of whether to sell or not sell the property will also be influenced by the impact that environmental insurance (if available) will have on the market value, and, accordingly, the sale price of the potentially contaminated property. Assuming for the moment that the site can produce an annual cash flow of $500,000, the market value of the property depends on the rate at which this cash flow is discounted in perpetuity. Consequently, in analyzing the merits of environmental insurance, we are interested in the discount rate differential between an insured and uninsured project. In an analysis of factors influencing the market value of property, one source estimated that the cost of capital could increase by 15 percent or more if the property owner was purchasing a brownfield property rather than a property that was known to be uncontaminated.\(^6\)

While environmental insurance greatly reduces the risks posed to those involved in a brownfields transaction, it would not be reasonable to presume that the appropriate discount rate for an insured transaction would be the same as that of an uncontaminated property. Thus, to be on the conservative side, we will assume the annual cost of capital for an insured parcel of property to be 10 percent and for an uninsured parcel 15 percent,
thereby specifying an annual rate differential of **five percent**. The market value of the property with an annual cash flow of $500,000 in perpetuity would then be $3.3 million ($500,000/.15) if not insured, and $5 million ($500,000/.10) if insured.

Should a Property Transfer insurance policy be purchased to cover the expenses related to remediation of any contamination not discovered and remediated prior to the sale of the property, then a premium would have to be paid whether or not contamination is eventually discovered. It can be assumed that this premium would be factored into the purchase price paid to the seller. A typical Property Transfer insurance policy designed to cover potential contamination would cover all future cleanup costs, except for a $100,000 deductible that the property owner would have to bear. Assume that the pre-transfer Phase I or Phase II investigation of the site is 90% accurate in detecting contamination. This is a fairly conservative estimate, given the experience of many environmental insurers. If the chances of the site being contaminated are 30% and the average cleanup cost is $1.2 million, then the insurer would be exposed to approximately $1.1 million in losses on average ($1.2 million in costs less the $100,000 deductible), which yields an expected loss for the insurer of (.1)(.3)($1.1 million), or $33,000.

Assuming a loading factor of 1 of the actual policy premium to be charged so as to adjust the expected loss for the uncertainty of these estimates and to provide coverage up to a policy limit of $5 million, the applicable insurance premium would be ($33,000)(2), or $66,000. In this case, the property transfer policy which would pay for the costs of remediating any previously undiscovered contamination up $5 million.
4.2 Impact of Insurance on Decision to Sell

Figure 1 depicts the branches of the decision tree for determining whether the CEO of SELLCO "should" sell his company's brownfields property, and the role that insurance plays in the final choice. At the end of each branch of the tree are the outcomes for each of the different contingencies.

Case 1: Don’t Sell Property For the case where the property owner decides not to sell, the only time there is a loss is when the property is contaminated and the government is successful in recouping the costs of remediation. As shown, the combined probability of these two events is .10. Hence the expected loss emerging from this decision is (.10) x (-$1.2 million), or -$120,000.

Case 2: Sell Property Without Insurance If, on the other hand, SELLCO decides to sell the property, it faces the decision of whether to purchase insurance. As was previously mentioned, the market value of the property, if uninsured, is $3.3 million. Accompanying this decision is the .015 joint probability that the initial site assessment will prove to be inaccurate (finding no contamination), the property will subsequently be found to be contaminated after the property is transferred, and that SELLCO will lose the resulting litigation with REALCO at a cost of $1.6 million. Also accompanying this decision is the .27 joint probability that the initial survey, undertaken as a prerequisite to the sale imposed by the purchaser, will accurately uncover contamination prior to any transfer of the site, forcing the seller to bear the expense of remediating the site. The expected value
of the property here is $3.3 million - (.015) ($1.6 million) - (.27) ($1.2 million), or $2,952,000.

Case 3: Sell Property With Insurance  If insurance is purchased for the property, the market value increases to $5 million, which must be adjusted to account for the payment of an insurance premium in the amount of $66,000. As in the uninsured scenario, this decision is accompanied by the .27 joint probability that the initial survey, this time undertaken as a prerequisite to obtaining insurance required by the insurer, will accurately uncover contamination prior to the transfer of the site, again requiring the seller to bear the expense of remediating the site. Hence the market value of the property will be approximately $5 million - $66,000 - (.27) ($1.2 million), or $4,610,000.

Given these states of the world, SELLCO's decision is very clear. Not only should SELLCO sell the property in question, but it should purchase environmental insurance to cover the transaction. Its expected profit from this decision is $4.61 million compared to $2.92 million (Selling without Insurance) or $-120,000 (Don't Sell). From the perspective of the potential seller, then, environmental insurance not only makes it possible to realize a positive net present value from the sale of the property, it makes it possible to realize a much larger return on the sale of the unused asset than SELLCO could realize without the purchase of insurance.

It is interesting to note, however, that the relative difference between the cost of having environmental insurance and the cost of not having environmental insurance, as measured
by the expected loss related to the risk of potential remediation expenses retained by the uninsured, is very slight. The factor which decisively tips the scale in favor of environmental insurance is the corresponding reduction in risk which accompanies environmental insurance. This reduces the cost of capital for brownfields ventures and increases the property’s market value.

5. Conclusion

The bottom line of this analysis is that a potential seller of contaminated properties can realize a greater expected value by selling the property than by allowing the property to sit abandoned and unutilized. Further, there are large potential advantages to the application of environmental insurance to brownfield transactions. By reducing the potential cost of capital for a brownfields project and by reducing the uncertainty that such projects can be completed within budget and without the assumption of liability on the part of the buyer, environmental insurance can further increase the expected value which may be realized by a potential seller. This can often facilitate such transactions which would otherwise not otherwise be economically feasible.

Notes

1See Porter (1995) for the classic explanation of the search for a solution to this problem.
2This is the clearly stated position of the United States Environmental Protection Agency (EPA, Brownfields Action Agenda, 1996).
3See Browner (1997) for the perspective of the Administrator of the Environmental Protection Agency regarding the need for more cooperation between private entities and the federal government with respect to environmental matters.
For example, the efforts of the federal government to clean up the most heavily contaminated sites in the United States have been widely regarded as an inefficient and ineffective failure. Thirty-six percent of the approximately $11.6 billion spent on cleanup of these so-called "Superfund" sites has been paid in transaction costs, such as the fees paid to lawyers litigating actions to determine responsibility for cleanup, rather than for the costs of cleanup itself. Further, in nearly fourteen years of effort, the Environmental Protection Agency managed to clean up only 217 out of 1,177 sites identified as needing immediate and extensive remediation (Dixon 1994, 4-5).

The General Accounting Office has estimated that there are 130,000 to 450,000 contaminated sites around the country, and that it will cost an estimated $650 billion to remediate these sites (GAO 1993).

Clearly, environmental insurance is only one weapon in the brownfields arsenal. It cannot be relied on to the exclusion of other potential solutions, and must be used with a knowledgeable understanding of its limitations. For an example of disastrous reliance upon, and the misapplication of, environmental insurance, see Hirsh (1996).

Under federal law, the present owner of property which is found to be contaminated is liable for its cleanup. See the Comprehensive Environmental Response, Compensation and Liability Act (1994), hereinafter referred to as "CERCLA" or "Superfund." It makes no difference whether the present owner actually contaminated, or contributed to the contamination, of the site. Mere ownership is enough for liability to attach (CERCLA, §9607(a)(2)).

In addition to the administrative burden imposed in making public such information, this process can lead to a decline in the price of the company's publicly traded shares (Bray 1997).

Although the statutory language would seem to indicate to the contrary, selling a contaminated property does not necessarily absolve the innocent seller of liability for contamination it did not produce. According to CERCLA, any person who owned or operated a contaminated property at the time of contamination is liable for its cleanup (CERCLA, §9607(a)(2)). This language logically implies that past owners, who were not the owners when the property was polluted, retain no liability upon the sale of the contaminated property. Three United States Circuit Courts of Appeal have adopted this position. See, e.g., ABB Industrial Systems v. Prime Technology, Inc. (2d Cir., 1997) Other Circuit Courts of Appeal, however, have apparently adopted the position that merely being a part of the chain of title is enough to incur liability (West Group, 1997). As the United States Supreme Court has not yet spoken on the issue, this confusing conflict has not yet been resolved.

Freeman & Kunreuther (1997).

For a more detailed discussion of the implications of "stigma" on property values see Kunreuther & Slovic (1997). Some federal courts have recently recognized this phenomenon, compensating innocent purchasers for the decrease in market value of properties purchased caused by the stigma of contamination created by previous owners (Shea 1997).

See Bray (1997).
As was previously mentioned, it is quite clear under federal law that current owners of contaminated property are liable as responsible parties for the cleanup of the property (CERCLA, §9607(a)(2)).

See Freeman & Kunreuther (1997).

This is commonly known as the "how clean is clean" debate.

Since 1989, the United States Environmental Protection Agency, at least on paper, has been willing to enter into "Prospective Purchaser Agreements" with purchasers of contaminated properties, the effect of which is to supposedly provide such assurances. See EPA, Guidance on Landowner Liability Under Section 107(a) of CERCLA (1989), and EPA, Guidance on Settlements With Prospective Purchasers of Contaminated Property (1995).

For an extended discussion of the legal and practical uncertainties left unresolved by Prospective Purchaser Agreements, see Rosemarin (1996).

Schwenke (1997).

See Freeman & Kunreuther (1997).


For a discussion of the evolution of this theory of lender liability under CERCLA, see Freeman (1997). It should be noted, however, that Congress has attempted to eliminate this liability in most circumstances (Asset Conservation, Lender Liability, and Deposit Insurance Protection Act of 1996). Following the lead of Congress, the Environmental Protection Agency has also taken steps to eliminate this liability (EPA, Policy on Interpreting CERCLA Provisions Addressing Lenders and Involuntary Acquisitions by Government Agences, 1997). However, these measures do not address potential liability for lenders posed by other environmental laws (Argent Communications Group 1997).

For a discussion of the rational and irrational concerns of lenders with regard to brownfields lending, and their effect on the cost and availability of capital for brownfields projects, see Chalmers (1996).

For example, many life insurance companies, which are traditionally important sources of capital for real property ventures, absolutely refuse to provide financing for projects with any known environmental contamination because of this fear. (Elliot-Jones, 1997).

See, e.g., Henry & Muller (1997) for an explanation of why officials at Bank of America feel that environmental insurance will encourage lending to brownfields projects.

See Freeman & Kunreuther (1997).

See Taxpayer's Relief Act (1997).

For some examples of the numerous grants offered by both state and federal governments, see Allen (1996).

For example, in one of its latest grant programs, the EPA indicates that a fundamental criteria upon which it relies in deciding which projects receive aid is the certainty with which it can be assured that remediation will be accomplished (EPA, The Brownfields Economic Redevelopment Initiative, 1997).

Because the discussion which follows is more economic than political in nature, we avoid the important role that citizens in local communities can play in the brownfields process. For a discussion of the role of area residents in making decisions with regard to
environmental risk, and of communication of such risks, see Kunreuther, Fitzgerald & Arts (1993).

30 See Freeman & Kunreuther (1997, 78).
32 See Acton & Dixon (1992, 45).
33 See Dixon (1994, 22).
34 See Anderson (1996).
35 See Acton & Dixon (1992, xiii). The $400,000 is simply 1/3 of the average remediation expense of $1.2 million.
38 Experience has shown that the costs of remediation at the average brownfields site exceed $5 million only 3% of the time.

References


