



A GUIDEBOOK FOR BROWNFIELD PROPERTY OWNERS

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This guidebook explains the process, problems, and rewards of redeveloping brownfields. It can help property owners bring these lands back to active and profitable use. It may also help property buyers, tenants, and neighbors better understand brownfield redevelopment issues.

Chapter 1 answers key questions about brownfields and discusses some of the reasons that property owners should consider cleaning up and redeveloping their brownfield properties. While there are many advantages to cleaning up and redeveloping brownfield properties, there are also many challenges and potential pitfalls. The following chapters of the guidebook explain the brownfield cleanup and redevelopment process and the issues that property owners may need to address.

This guidebook is not a comprehensive authority on brownfields. Property owners should consult additional sources and consider working with experts from a variety of fields for guidance and advice.

WHAT IS A BROWNFIELD?

The term brownfield typically refers to land that is abandoned or underused, in part, because of concerns about contamination. The federal government defines brownfields as “abandoned, idled or underused industrial and commercial properties where expansion or redevelopment is complicated by real or perceived environmental contamination.”

Brownfields may make you think of dirty, blighted, abandoned industrial property, but that image is too narrow. Though some

brownfields are old industrial sites, others are commercial buildings with little or no environmental contamination. Brownfields could be —

- former service stations,
- former dry cleaners,
- factories,
- warehouses,
- parking lots,
- hangers,
- lots where heavy machinery was stored or repaired,
- abandoned railroads,
- former railroad switching yards,
- air strips,
- bus facilities,
- landfills,
- and many more types of facilities.

Many of these brownfields could be turned from possible liabilities into successful developments.

DO I OWN A BROWNFIELD?

Ask yourself —

- Is my land idle, vacant, or less productive than it ought to be?
- Are concerns about environmental contamination contributing to the problem?

If you answered yes to both questions, then you might own a brownfield.

WHY THE INTEREST IN HELPING BROWNFIELD OWNERS?

When brownfields sit idle, everybody loses. Neighbors face environmental worries and reduced property values. Cities see roads, sewers, and other infrastructure underused. New business seeks out “greenfields” or undeveloped land, encouraging sprawl. And brownfield owners must deal with a long list of worries — from potential lawsuits to deriving too little income from their property.

When developers clean up brownfields and put them to new uses, many people benefit. Cleanups address environmental problems. Redevelopment can bring new jobs and higher tax revenues. Revitalized brownfields can breathe the new life into neighborhoods.

Brownfields offer opportunities that go beyond their old uses. Developers have transformed brownfields into everything from golf courses and driving ranges to mixed developments with housing, offices, shopping, and open space. Smaller properties have found new life as bakeries and greenhouses. In short, many uses may be open to a clean site.

Many communities, businesses, and environmentalists agree that brownfield redevelopment is worth encouraging. As a result, a variety of private and public sector guidance and incentives have been developed to encourage brownfield redevelopment. Redevelopment is seldom easy or risk-free. But if done right, redevelopment can bring special rewards: peace of mind, income, and a cleaner environment.

WHAT ARE THE BENEFITS OF BROWNFIELD REDEVELOPMENT?

In addition to providing benefits to surrounding communities, property owners that clean up and reuse their brownfield properties may benefit directly by:

- Avoiding potential environmental enforcement actions by federal, state, and local regulatory agencies that could impose penalties and costly cleanups;

- Receiving tax benefits for cleaning up and reusing the property;
- Reducing the likelihood that contamination from the property will migrate off site or into the groundwater under the site, thereby limiting liability for, and long term costs of, cleaning up the property;
- Creating good will within the community;
- Reducing the potential need to address liabilities associated with the property in financial statements and Securities and Exchange Commission filings;
- Realizing an enhanced return from the property by making it more valuable and marketable.

WHY NOT LEAVE A BROWNFIELD PROPERTY IN ITS CURRENT CONDITION?

Many brownfield owners are satisfied with leaving their properties in their current condition. In some cases the neighborhood property values seem too low to justify any sort of investment in the site. In other cases, the level of contamination is so slight that it seems unlikely to harm anyone.

A property owner who decides to do nothing should be sure that the decision is based on a full understanding of the situation. In particular, the owner should look at possible liabilities for environmental contamination. Even potential liability can affect a business, making it harder to get credit or raise equity for projects not directly related to the brownfield.

Also, a property owner who decides to do nothing should make sure that things are not about to get worse. If the site is posing a health or environmental threat to neighbors, delay could lead to bigger injuries and bigger liabilities. On a site bad enough to justify government attention, an owner who waits may be inviting cleanup on expensive terms dictated by the government, possibly with years

spent with attorneys arguing over the process. Even when cleanup appears to be a losing proposition, prompt cleanup may make sense as a way to cut losses.

DOES THE GOVERNMENT PROVIDE INCENTIVES FOR BROWNFIELD REDEVELOPMENT?

Federal, state, and local governments provide incentives for brownfield cleanup and redevelopment. Some of these incentives are provided directly to property owners. Certain incentives are offered only to communities and local governments, but property owners can still benefit from these incentives. The wide range of incentives available is discussed in more detail throughout this guidebook. They include:

- Federal, state and local tax incentives;
- Grants and low-interest loans;
- Technical assistance;
- Liability protection; and
- Streamlined government oversight of cleanups.

WHO ARE THE KEY PLAYERS IN BROWNFIELD CLEANUP AND REDEVELOPMENT?

A variety of private and public sector organizations may play a role in the course of cleaning up and redeveloping brownfield sites. Not all of these organizations will be involved at every site. Key players include:

State Environmental Agencies: Property owners who decide to clean up brownfield sites, either for sale or reuse, may perform the cleanup under the oversight of a state environmental agency. In addition to overseeing cleanups, state environmental agencies may offer incentives such as liability protection from further cleanup.

State Economic Development and Planning Agencies: Some states provide economic incentives, such as low-interest loans, for the

redevelopment of brownfield properties. These incentives may be offered through state economic development and planning offices that are interested in attracting new businesses and investors to their states, as well as guiding their states' growth.

Commercial Lenders: Some property owners may decide to apply to commercial lenders for loans to support the cleanup and redevelopment of their properties.

Technical Consultants: Technical consultants can help property owners design and implement the investigation and cleanup of environmental contamination on their properties. Technical consultants may also help property owners work with state regulatory agencies and communities surrounding their properties.

Legal Counsel: Lawyers can assist property owners in many aspects of the cleanup, redevelopment, and sale of brownfields by advising owners about regulatory requirements, negotiating with regulators and prospective buyers, drafting sales agreements, and communicating with surrounding communities.

Citizens and Community Groups: State and federal cleanup programs may require public involvement such as opportunity for notice and comment from the public. Furthermore, some economic incentives, such as grants and loans, may not be available unless supported by the surrounding community. Even when not required, property owners may want to provide information and consult with communities surrounding brownfield properties to facilitate acceptance and support for cleanup and redevelopment.

Local Government Agencies: Local economic development, planning and tax agencies may provide incentives for brownfield redevelopments in order to attract investors and businesses to their communities, guide growth, and increase jobs. Local health agencies may have an interest in ensuring that contaminants on brownfield properties do not pose a threat to community health.

United States Environmental Protection Agency (EPA): EPA is unlikely to be directly involved in the cleanup of brownfield properties, because most cleanups will be overseen by the states. EPA provides cleanup and redevelopment incentives and financial support, however, that may be available to some property owners.

Developers: In some cases, property owners may want to work with developers to determine and implement marketable reuses of their properties.

Brownfield Developers and Investors: A new group of firms specializing in cleaning up and reusing brownfields has emerged in recent years. These firms rely on a mix of engineering, legal and real estate technical and financial backing and expertise.

Real Estate Professionals: Property owners may want to work with real estate professionals who can advise on the market for a particular property and can help locate buyers or developers.

Local Community Development Corporations (CDCs): CDCs, nonprofit organizations created to encourage local urban redevelopment, can assist property owners in determining the value of a property and marketing a site.

Federal Government Agencies: Federal government agencies, other than EPA, may provide technical and financial support for brownfield redevelopment including the Department of Housing and Urban Development, the United States Army Corps of Engineers, the Commerce Department's Economic Development Administration, and the Department of Interior's Groundworks USA Program.

WHAT DOES THIS GUIDEBOOK COVER?

Every property is unique and property owners' needs and interests will vary. Accordingly, there is not a standard approach or process for brownfield cleanup and redevelopment. Nor is there a standard time line or order for making decisions or addressing issues. There are, however, several tasks and issues common to many brownfield cleanup and redevelopment efforts. These include, but are not limited to:

- Determining the value of the property;
- Exploring options for redevelopment;
- Investigating environmental conditions;
- Working with the community surrounding the property;
- Securing needed financing;
- Working with state, federal and local programs that provide brownfield incentives;
- Working with regulatory agencies that may oversee the cleanup;
- Choosing a cleanup option that allows the planned future use; and
- Implementing the reuse or sale of the property.

This guidebook addresses these and other aspects of brownfield cleanup and redevelopment by providing explanations, tips, and information to property owners. Appendix A sets out some preliminary questions property owners may want to ask themselves as they consider whether to clean up and redevelop their properties. Although the guidebook is geared toward property owners, a wide range of brownfield stakeholders may find the information useful.

For most owners, the ultimate objective of brownfield reuse is to enhance the value of the property. The reduction of environmental threats is frequently a necessary or advisable early step in the process. Nonetheless, an owner who spends time and resources to solve environmental problems only to discover that there is no economic demand for the property is unlikely to think the project has been a success. Unless the site poses an immediate environmental threat, the owner will want to find out before cleanup what the potential market will be for the clean property.

REUSE POTENTIAL

Establishing the potential market demand for a property can be difficult. It can be even more difficult for a brownfield site, where the need to address environmental issues, and their associated costs, introduces added uncertainty. Nonetheless, a prudent owner can take a number of steps to gauge market demand prior to beginning expensive environmental work.

For some owners, of course, this process can start with a review of their own needs. Owners with active businesses already on the site, or perhaps on a nearby property, should first evaluate their own potential for expansion. The highest use for the brownfield may be to satisfy those needs. In these situations, even if expansion is some years away, resolving environmental issues now may be to the owner's advantage. This approach assures that the property will be available and poised for rapid redevelopment when the owner needs it, since the potentially time-consuming process

of addressing environmental issues will have already been completed.

Many owners, however, will not be interested in retaining their brownfield properties for their own use. In these instances, an owner can turn to a wide range of individuals and organizations to help judge the potential demand for a particular site. The following sources can help identify the kinds of uses that the property might support, the demand in the area for comparable properties, and the potential price for the property once the environmental issues have been resolved. They may also have other information useful in planning for redevelopment. For larger projects, a property owner may consider a formal market study to determine the highest and best use of the property.

Here are some sources for information about market demand for and value of a brownfield:

Real Estate Agents will generally have the best sense of the market for any particular property. Many realtors® can tell you the recent sale price for comparable properties in the same market sector. Some agents are associated with real estate development companies, which assist larger projects by conducting sophisticated demographic, traffic, and economic analyses that can provide an objective basis for deciding a site's potential uses and values. These development companies may also help by proposing potential uses for the property based on their analysis — for example, a big box retail use — and then attempting to attract specific buyers who would be interested in such a use — WalMart, Target or Lowes, for instance. Very few real estate agents, however,

can estimate the value of a brownfield site that reflects any discount for the cost of dealing with the environmental problems. Although real estate professionals with brownfield expertise are becoming increasingly common, most still are not trained to estimate environmental costs and are generally uncomfortable even trying. Instead, they price a property based on the value of comparable properties that do not suffer from environmental problems.

Real Estate Assessors work in specialized firms that deal with unique or hard to compare properties. They have expertise dealing with property with environmental issues and can be a useful source of information to property owners.

Local Community Development Corporations (CDCs) can provide much of the same information as real estate agents. Although their functions vary from organization to organization, most will have a good sense of the market value of nonbrownfield properties in their area. CDCs also frequently have experience working with other neighborhood brownfield properties. In addition, since prospective buyers often approach CDCs looking for available properties, CDCs will have a sense of the level of economic and development activity in the area. Since their goal is to promote economic growth, most CDCs will assist a property owner in marketing a site. This assistance may include support for applications for any public financing that might be available. Finally, CDCs may be able to support the sale of a property for which additional construction activity is contemplated by arranging for and perhaps overseeing necessary construction activities.

Local Redevelopment Authorities and Region Economic or Industrial Development Agencies can also be valuable sources of information and support. These entities are arms of municipal or regional government (or, in some instances, independent agencies with a governmental charter) responsible for economic development. This means that they closely monitor property markets and

know about demand and uses for particular sites. Although they may not be as useful as a local real estate agent or CDC in estimating a potential sale price for a site, the information they can provide should give a brownfield owner a better sense of the market value of a site. Moreover, these agencies usually have some relationship to the public programs that provide financial support for redevelopment efforts.

Contiguous Property Owners will often be valuable sources of information on property values, demand, and uses. A contiguous owner may also be considering expansion or need additional space and, therefore, may be a potential buyer.

Neighborhood Associations, Groups, and Leaders often know about the local real estate market. Although these groups are generally less formally structured than the local CDC, they may have a similar mission of promoting community improvement by encouraging economic growth. They may have information about recent property sales, especially sales that they helped bring about, and will probably know about other properties currently on the market, their price, and how much interest has been expressed by potential purchasers.

Specialized Brownfield Promotional Efforts, primarily based on the Internet, may offer some additional information to a property owner. These web sites, sometimes operated privately and sometimes by economic development agencies, frequently list brownfield properties that are for sale. This information, as well as information from the web page operators about site turnover, can help a brownfield owner better understand the brownfield market. The web pages can also serve as a dedicated marketing tool for the brownfield owner if he does decide to sell his site. See Appendix E.

National or Regional Brokerage Firms and Development Companies may publish reports on the development market for large metropolitan areas that provide useful information to property owners about the market for their properties.

LAND USE CONSIDERATIONS AND RESTRICTIONS

While looking into the potential demand and uses for a site, property owners should also consider any physical site conditions, in addition to contamination, that could limit the use of the property. Property owners should also research possible legal restrictions on the use of the land, including private restrictions found in deeds and public limitations found in zoning and similar ordinances.

Site Conditions can influence future site redevelopment and reuse alternatives. As with any development, the property owner should conduct or obtain an evaluation of the site's physical characteristics. This evaluation should include gathering and analyzing preliminary geotechnical information that characterizes the fill, soil, and groundwater in order to determine the site's potential for supporting roadways, parking areas, utility corridors and new building foundations. The conditions evaluation should also include an analysis of the extent and location of wetlands on, or adjacent to, the property, the location and capacity of existing utilities and hydrogeologic information.

Deed Restrictions are limits on property use found in the property's deeds. A prior owner — perhaps from more than a century ago or perhaps from as recently as last year — created these restrictions as part of a transaction involving the land. The restrictions may benefit someone who was not even a party to the transaction. As a result, the new owner of the property acquired something other than completely unlimited use of the land.

Some kinds of restrictions are intended solely to benefit the parties in the initial transaction and do not affect the land beyond some identified time (such as the death of a person or a subsequent transfer of the land). Other restrictions, however, are said to “run with the land”; this means that they continue to limit the ways in which the land can be used by subsequent owners. Deciding whether any particular restriction runs with the land or is no longer effective (or may become ineffective in

the future) can be a complicated legal issue and should be reviewed by an experienced real estate attorney.

Although deed limitations can take many forms, there are two principal variations:

Restrictive covenants, as the name suggests, specifically limit the use of the property. These covenants are often created when a large tract of land is subdivided. All of the deeds for the resulting smaller parcels, for example, might prohibit any use other than residential, prohibit further subdivision, or prohibit deforestation of lots beyond a prescribed amount. Restrictive covenants often attempt to preserve neighborhood qualities that the covenant creators presumed to be desirable.

Easements indirectly limit a property owner by making the property subject to a limited use by another person. The most common kind of easement is a right of way, in which the person benefitting from the easement is given the right to cross a property he does not own. The owner of property subject to an easement may not interfere with this right of way and is therefore limited, to a greater or lesser extent, in the uses of the property.

Zoning Restrictions are found not in deeds but in municipal ordinances. Although these restrictions can often act like restrictive covenants found in a deed, there is a key difference: zoning ordinances will generally affect more than a few properties. Zoning schemes are designed to protect the entire community's health, safety, and welfare, primarily by prohibiting incompatible land uses in close proximity to each other and by restricting other detrimental uses of property. A zoning ordinance will characteristically divide a community into a number of classifications, or zones, and authorize only certain kinds of uses within each zone (for example, a residential zone, a commercial/retail zone, or a light industrial zone). Other zoning provisions may prescribe setback requirements for structures, minimum size requirements, minimum parking requirements, and other details relevant to development.

Regional Plans may also restrict the use of a brownfield site. Like a zoning ordinance, a regional plan regulates land uses in a particular geographical area. A regional plan, however, establishes restrictions across an entire region, usually several towns or communities. Depending on the nature of the regional plan and its relationship to local zoning, a regional plan may set limits that affect individual properties or it may simply establish general use rules to be implemented through local zoning.

Any one, or combination, of these land use restrictions can have serious consequences for the potential reuse of a brownfield site (or any other site, for that matter). The brownfield owner must carefully research these possible limitations as part of the initial efforts to determine the market potential of the site. All but the most sophisticated owners will want a lawyer to perform this review, since the relevant provisions in deeds, ordinances, and regional plans can often be confusing. Moreover, a competent attorney should be aware of court decisions that may have interpreted these or other similar restrictions in ways that may be helpful to the owner. Finally, a lawyer will most likely be essential if the brownfield owner needs to seek an amendment, variance, or other exception to an existing use restriction that prevents productive reuse of the site.

UNCERTAINTY & VALUE

The value of a brownfield property is usually depressed because of concern about the environmental problems on the site and the potential legal liability associated with solving those problems. Prospective buyers of a brownfield site will discount the property's value (from its worth if it were free of any environmental problems) based on their evaluation of four factors: the best estimate of the cost of the environmental work that will be needed; estimates of other potential costs related to environmental contamination, such as personal injury or property damage claims; the possible reduction in resale value of the site if

future use is limited by environmental concerns that continue after a cleanup; and an uncertainty premium. Some consulting firms have developed formulae for determining discounts that reflect these factors.

The uncertainty premium reflects the impossibility of predicting the costs of environmental investigation and cleanup with great precision. Environmental cost estimates can be off by as much as several multiples. In a rational real estate transaction, a buyer asked to assume responsibility for the environmental problems as part of the sale might, for example, double the estimate of the projected environmental costs in calculating his offer for the property. This margin for error, or premium, would be an attempt to account for the uncertainty the buyer faces in actually carrying out the work. The buyer will set the amount of the premium to reflect a number of factors specific to the particular transaction, including the amount and quality of information known about the site, the buyer's own tolerance for risk, expectations about regulatory behavior, and other considerations.

The risks and liabilities associated with ownership of contaminated properties cannot be removed entirely, given the scope of obligations imposed under federal and state environmental laws and under state personal injury and property damage laws. Several approaches, including the purchase of insurance products and creation of indemnification agreements, can be used by property owners and prospective buyers, however, to allocate and, in some cases limit, potential liabilities. These mechanisms have become increasingly important in facilitating brownfields transactions.

For example, the parties to a land transaction involving contaminated property are always free in the contract of sale to address financial responsibility for liabilities between themselves, as discussed in Chapter 9. Depending on the deal, for example, the seller could commit to pay for cleanup costs if a cleanup is subsequently required after the buyer acquires the site, or the buyer could assume all financial responsibility (and discount an amount from the property's value as

represented in the sale price), or the parties could come up with some division of these costs. It is essential that the buyer and seller understand, however, that these contractual provisions, sometimes called indemnities, only establish responsibility between themselves. These contract terms do not affect the government's right to sue any party who can be held liable under applicable law. This means, for example, that a buyer may unexpectedly find itself fully liable for cleanup costs if the seller who committed in the contract to pay for all such costs turns out to be financially insolvent

when the government brings an action.

Insurance products can also be used to allocate and reduce liability. As discussed in Chapter 3, environmental liability insurance products may be available that cap the policy holder's liability for cleanup cost overruns, insure against unknown cleanup costs or liabilities, or help protect lenders from the risks associated with lending for contaminated properties. Such policies can both provide assurances to lenders and help to facilitate the sale of a brownfield property.

Environmental Liability

Although the system of environmental laws addressing the responsibility for contamination on real property is complex, and involves both federal law and the many different state laws, the general principles can be readily understood.

Under the federal and many state Superfund programs, the current property owner can usually be held liable by the government either to clean up existing contamination on the site or to repay the government for its costs in performing this work. Prior owners who held title when the contamination was caused or continued can often be held liable as well. Non-owners who contributed to the contamination can also be held liable. In most cases, a liable party can be forced to pay for the entire cleanup, rather than just for a share of the contamination under a legal doctrine called joint and several liability. The current owner cannot avoid liability to the government for a cleanup simply by selling the property; in general, the sale simply adds the new purchaser to the list of parties the government can choose to sue if it decides to bring a legal action. There are a small number of potentially significant exceptions to the basic liability rules. The rules and exceptions are discussed in more detail in Appendix B.

The liability rules that could apply to a brownfield site under other environmental laws typically are not as comprehensive as some state superfund programs or the federal Superfund program. Nonetheless, these programs can still

impose broad liability. The liability schemes are described in Appendix B.

Finally, the federal government and many states have devised special programs to encourage brownfield reuse, and various provisions of these programs may offer specialized protection from liability for persons who agree to redevelop brownfield sites, as discussed in Chapter 8. An experienced attorney will be able to advise owners about the application of the various liability rules and exemptions.

In addition to liability for cleanup, brownfield property owners may be liable for personal injury and property damage caused by contamination on or migrating from their properties. For example, if community members who live around the property have been injured by exposure to contaminants in their drinking water that came from the brownfield property, they may be able to seek damages by filing a law suit, sometimes called a toxic tort action.

Property owners can also be liable for damages to natural resources that are caused by contamination on or from their properties. For example, federal or state governments may be able to seek damages under the federal Superfund law or state laws for injury to streams, wetlands, wildlife, and other natural resources. The method of calculating damages can vary but may include, in some cases, damages imposed for lost use, in addition to the costs of restoring the natural resources.

Reuse and Redevelopment Alternatives

Chapter 3

A brownfield owner who does not intend to keep his property for his own use faces a number of options for timing the sale or redevelopment. The owner can attempt to sell the property in its present condition, with all uncertainties about environmental issues unresolved and with the potential to expose the purchaser to substantial legal liability for those conditions. At the other extreme, the owner can address all environmental issues before the sale, reducing (or eliminating) uncertainty and exposing the purchaser to little or no liability. The relative advantages and disadvantages of these two options, as well as choices between these extremes, generally reflect the shifting importance and interplay of cleanup costs, potential property value and the uncertainties in the process.

SALE "AS IS"

Assuming the current owner could find a prospective buyer willing to purchase the site in its present condition, with little or no reliable information about environmental conditions or their legal (and financial) significance, the owner might consider an "as is" sale. In this kind of transaction, the current owner would transfer the property prior to conducting an environmental assessment or carrying out any cleanup activities. Responsibility for these actions, and costs, would contractually shift to the buyer. "As is" clauses in sales agreements are discussed in Chapter 9.

The prime advantage of this kind of deal is that it allows the current owner to relinquish ownership rapidly and without incurring the

costs normally associated with environmental issues. For some owners, this may be ideal. They can realize some revenue immediately and can stop paying taxes and other normal property costs sooner. This approach may be particularly useful when the present owner does not have the funds necessary, prior to the sale of the property, to pay for the needed environmental work. Furthermore, the current owner will not need to spend the time required to oversee the environmental assessment and cleanup, which will usually be performed by hired private consultants and contractors.

The significant disadvantage of an "as is" sale is that the current owner may be unable to obtain a price for the property that reflects its actual value. This kind of sale requires the buyer to accept maximum uncertainty concerning the scope of environmental costs that may be incurred. In exchange for this, the buyer is likely to discount the price dramatically to protect against higher than expected cleanup costs. The seller may actually receive only a small fraction of the property's real net value. If the environmental expenses turn out to be less than expected, the buyer can realize a windfall. At the same time, the seller will have received far less than the property was actually worth.

The current owner faces a second problem with an "as is" sale. The reduction in property price is intended to reflect the fact that the purchaser will assume responsibility for environmental problems. The seller, in effect, pays for the assessment and cleanup by agreeing to a reduction in the price paid

for the property. Unfortunately, by transferring this responsibility to the buyer, the owner gives up control over the performance of these tasks. If the buyer performs them poorly, or not at all, the government might choose to

bring an action against the seller (as a prior owner of the land) to carry out the required environmental work. If the government is successful, the seller will have paid for the cleanup twice.

Uncertainty and Reward

Assume that a property owner wishes to sell a former dry cleaning plant, now closed for several years. Comparable nearby properties, without environmental contamination, have consistently sold for \$500,000. The owner knows that the property has some soil and groundwater contamination from spilled cleaning solvents and materials. By talking to members of the dry cleaners' association, the owner learns that other cleaning plants have had very similar environmental contamination problems. He is told by the association that an appropriate environmental assessment should cost about \$50,000. Although it is impossible to predict the cleanup costs with any confidence until an assessment is performed, the association tells the owner that the average plant cleanup has cost \$100,000.

The following suggests how a hypothetical buyer might try to protect himself from uncertainty about site conditions and costs in the absence of an actual assessment and cleanup, and how the financial benefits of dealing with uncertainty can vary depending on the premium a buyer requires and its accuracy in predicting the actual environmental costs. This hypothetical assumes that insurance is not used as a means of allocating risk, although in some cases insurance products may be available, as discussed in chapters 3 and 9.

Theoretical Net Value of Property

Estimated clean property value:	\$500,000
Reasonably expected assessment cost:	\$ 50,000
Reasonably expected cleanup cost:	\$100,000
Theoretical site net value:	\$350,000

Buyer's Valuation of Property Due to Uncertainty

Estimated clean property value:	\$500,000
Assessment deduction, with uncertainty premium (50%):	\$ 75,000
Cleanup deduction, with uncertainty premium (100%)	\$200,000
Buyer's offer based on uncertainty about true costs:	\$225,000

Assuming the buyer purchases the site prior to assessment and remediation for its discounted valuation of \$225,000, the following two examples depict differing possible financial gains — or losses — the buyer could realize depending on the actual environmental costs he incurs.

Example One: Buyer's Environmental Costs Are Less Than The Environmental Discount Reflected In The Sale Price

Estimated clean property value:	\$500,000
Actual assessment cost:	\$ 65,000
Actual cleanup cost:	\$115,000
Actual net value of site after environmental costs:	\$320,000
Windfall to buyer from a purchase at \$225,000:	\$ 95,000

Example Two: Buyer's Environmental Costs Are Greater Than The Environmental Discount Reflected In The Sale Price

Estimated clean property value:	\$500,000
Actual assessment cost:	\$ 65,000
Actual cleanup cost:	\$250,000
Actual net value of site after environmental costs:	\$185,000
Loss to buyer from a purchase at \$225,000:	(\$ 40,000)

SALE AFTER ASSESSMENT

To reduce some of the uncertainty of an “as is” sale and to gain some ability to negotiate a reasonable price for the brownfield site, the current owner could consider carrying out the environmental assessment (through a consultant or contractor, as discussed in Chapter 4) before selling the property. The assessment might be done prior to even offering the site for sale, or it might be done — still at the owner’s expense and under his direction — as part of the discussions with an identified potential purchaser.

The advantages of taking this step are clear. Once it has been completed, the costs of the assessment are known and there is little or no reason for an uncertainty premium related to these expenses. A thorough and professional assessment should allow all parties to gauge the likely extent of cleanup with some confidence. While the final costs of the cleanup cannot be predicted with complete accuracy, a good assessment should result in a significantly smaller “contingency” for cleanup cost overruns in the final negotiations about a price for the site.

Performing the assessment in the context of a specific sale, to a specific buyer, brings additional advantages. Designing an assessment is not an exact science; decisions need to be made about numbers of samples and locations, and tradeoffs between the cost of the investigation and its comprehensiveness. An owner who commissions an assessment without the cooperation of a buyer — essentially an assessment on speculation — runs the very real risk that when a buyer finally does appear, he will not be satisfied with the assessment. This risk can be managed by delaying the assessment until the owner believes a particular buyer is serious about acquiring the site. At this point, the owner might try to incorporate reasonable suggestions from the buyer about the scope of the assessment.

Finally, there are valid reasons for completing only the assessment, without the cleanup, prior to sale. The cleanup might be lengthy but not interfere with use of the site. In such an instance, the buyer may want to

use the site while the cleanup is underway. The buyer might be able to perform the cleanup with its own staff, perhaps reducing total costs. Indeed, part of new construction — building foundations, paving parking areas — might actually be components of the cleanup. The current owner might not have funds for the cleanup phase or may prefer to sell the property sooner, even at the expense of a lower sale price.

There are certainly potential disadvantages to the current owner associated with doing an assessment prior to sale. Although assessments are usually less expensive than cleanup, they may still cost more than the owner wants, or is able, to spend. While assessments often show that the extent of contamination is less than feared, an assessment could reveal such extensive contamination that any hope of a sale may evaporate.

Moreover, some states require owners to report the discovery of certain kinds of serious contamination. Reporting to the federal government may also be necessary. In some cases reporting could eventually lead to the government ordering the current owner to carry out a cleanup. Once again, a prudent brownfield owner will work closely with a legal advisor to keep aware of reporting requirements and their potential consequences.

Lastly, in the event of a sale, the current owner still does not control the cleanup carried out by the buyer. As previously discussed, this exposes the current owner to the risk of being forced by the government to pay for the cleanup again, even though the owner already “paid” for the cleanup by selling the property at a price reduced to reflect expected cleanup costs.

SALE AFTER ASSESSMENT AND CLEANUP

This approach simply takes the sale after assessment to the logical next step. The current owner retains consultants and contractors to conduct any required cleanup identified by the assessment. At the end of the cleanup, the owner obtains a statement of protection from

future legal liability, if available, from the relevant regulatory agency (or agencies), as discussed in Chapter 8. The owner then offers the property for sale, and is able to accurately describe it as not subject to any current threat of environmental enforcement for site contamination.

The exact nature of the protection from liability will vary from state to state, and will also depend on the kind of cleanup program that applies to the owner's brownfield. Some examples of the various kinds of liability protection that the owner may be able to obtain and pass on to a purchaser are discussed in Chapter 8 of this guidebook. Of course, except in a very few instances, liability protection will not protect the owner if new or different dangerous contamination is discovered in the future. Liability protection from the government will not usually block private lawsuits by neighbors or others with claims that they have suffered injuries as a result of conditions originally on the brownfield.

A full cleanup strategy allows the current owner to maximize the price for the property. The buyer no longer needs to discount the uncertain costs of the assessment and cleanup. Indeed, the price for the property, in theory, should be close to its market value had it never been contaminated. Further, the current owner will have avoided the "double payment" risk of transferring cleanup responsibility to a buyer who might default. By carrying out the cleanup, the owner assures that it is performed correctly the first time.

Unfortunately, this approach also requires the owner to assume, essentially as an investment, all of the environmental costs prior to sale. The total assessment and cleanup costs may be more than the owner can afford. The owner is also accepting the risk that the costs might be higher than estimated — possibly so high that it is impossible to make a profit on the sale. Moreover, placing the cleanup before the sale means that financial proceeds from the sale to the owner will be delayed that much longer. Finally, unless the current owner can find a buyer willing to commit to the site and wait for the cleanup to be completed, the

owner might have to do the cleanup without an identified new buyer. Again, this risks a cleanup that is more costly than necessary because it does not incorporate remediation considerations or advantages that a specific redevelopment project might offer.

CLEANUP AND REDEVELOPMENT

For current owners with the skills and financial capacity to manage it, the final option is to take the property through the entire redevelopment process. This means arranging for the environmental assessment and cleanup, identifying potentially profitable uses for the property, overseeing any necessary demolition, rehabilitation, or construction of necessary improvements, and finally marketing the redeveloped property (or retaining the property for the owner's business use).

Complete redevelopment offers some unique advantages to a brownfield owner. First, being relatively certain about the end use allows the owner to conform the cleanup closely to the needs of the redevelopment project. This may help keep the cleanup costs down. Similarly, a brownfield owner may find that retaining ownership, either for his own use or as a landlord, minimizes the potential negative financial impact of long-term land use restrictions required by the cleanup (future use restrictions are discussed in Chapter 7). While these future use restrictions might lower the potential price of a redeveloped property if it were offered for sale, they are unlikely to lower the rents that the owner can charge if he retains the site and leases to tenants who carry out compatible uses on it. Of course, the rental value of a former brownfield restricted to one kind of use may still be lower than the rental value if the property uses were not so limited.

For the owner who is choosing whether to develop the brownfield or to find an alternative undeveloped greenfield, choosing the brownfield usually means not having to worry about arranging capital to buy land or financing for new infrastructure development. Brownfields, by definition, are sites already

served by most, if not all, necessary utilities and services. As greenfield development becomes increasingly challenged to disclose its true costs, and greenfield developers more and more are asked to pay impact fees and development charges, brownfield sites become all the more attractive. This advantage remains even if in some cases old infrastruc-

ture needs expanding or updating.

Redevelopment is not, however, without its risks. The advantages and disadvantages of the development/redevelopment business are generally well-known. Redevelopment is a complicated and unpredictable undertaking. Most brownfield site owners are not redevelopers and may not have the skills or time to

The Role of Insurance in Brownfields Transactions

Insurance can help reduce the risk for many of the key players in a brownfield transaction, thereby facilitating cleanup and redevelopment. For example, insurance can reduce the risk to a property owner who wants to sell a property but is concerned about potential liability for environmental contamination discovered after the sale. Insurance can also help reduce a prospective buyer's risk of potential liability for cleanup or for personal injury and property damage claims. These and other kinds of insurance are increasingly helping to encourage lenders to provide loans for contaminated properties. In addition, as discussed in Chapter 4, insurance can be used to reduce the risk of potential liability of cleanup contractors.

The number of insurance companies that provide environmental liability coverage is increasing, as is the number of policies issued. Property owners should confirm that they do not already have coverage under pre-existing, traditional insurance policies that could reduce their potential environmental liabilities. In many cases, however, the purchase of a new policy will be necessary to obtain the desired environmental liability coverage. The new insurance products vary based on the particular policy and insurer, but the following general types of insurance are most commonly used in brownfield transactions:

Cleanup Cost Cap Insurance: These insurance policies cover cleanup costs that far exceed the estimated costs of cleanup. By placing a cap on the policy holder's remediation costs, these policies address the uncertainty or risk that the cost of an environmental remediation project will greatly exceed the amount estimated on the basis of an environmental investigation and cleanup plan.

Environmental Impairment Insurance: These insurance policies provide coverage in two general areas. The first category of policies covers

cleanup of contamination unknown at the time of issuance of the policy. Depending on the policy, only cleanup costs incurred in response to legal requirements or government orders may be covered. The second category covers claims by third parties for personal injury or property damage. Numerous types of policies may be available and marketed under a variety of names. Property owners may need to select among various coverage options and can combine, for example, site remediation coverage with coverage for third party personal injury and property damage in a single policy. Often, an assessment will be required before coverage is provided and any contamination identified in the assessment will not fall under the policy. Typically, the policies only provide coverage for a limited period of time and contain numerous exclusions, restrictions, and limitations. Because some of these policies are acquired at the time of transfer of property, they are sometimes referred to as "property transfer" insurance.

Secured Creditor Insurance: This insurance is intended to protect lenders against loss of collateral value, the inability of a borrower to repay a loan because of cleanup costs incurred, and liability for environmental conditions at properties foreclosed on by the lender. When a borrower defaults on a loan as a result of remediation costs incurred, such policies typically pay the lesser of the outstanding loan balance or the cleanup costs of new or pre-existing environmental conditions. The policies also can cover personal injury and property damage claims, as well as cleanup costs that are incurred when a loan is in default. Among a variety of other limitations on coverage, in many cases contamination must be unexpected and unintended, and the discovery of on-site pollution must occur after the loan is made.

carry out a project successfully. Land development can take a long time and can tie up large sums of money. During the lengthy development process, unexpected obstacles may arise that can make a project more costly than first anticipated or terminate it completely. As compared to greenfield redevelopment, therefore, brownfield redevelopment may require a greater amount of capital (to address the environmental issues at the outset) and tie up capital for a longer period of time (because the environmental issues can add months or years before formal site construction can even begin). Finally, many of the state and federal financial incentives for brownfield redevelopment are aimed at encouraging “innocent” par-

ties to become involved at these sites. This often means that current owners, who can be seen as having responsibility for existing contamination, are not eligible for financial assistance that might be available to new owners or redevelopers.

In exchange for these problems, a successfully completed project offers a much higher potential return to the property owner than would a simple sale of the brownfield after assessment and cleanup, but before redevelopment. The owner can anticipate large potential rewards for having risked capital and appropriately resolved or avoided the numerous obstacles encountered during the lengthy redevelopment process.

Investigating Environmental Conditions

Chapter 4

Property owners consulting this guidebook may already suspect that their properties have environmental contamination. Although a comprehensive understanding of the extent of actual contamination will require the services of a professional environmental consultant, a brownfield owner can take some initial steps to help answer basic questions and narrow the scope of any formal investigation that might be needed.

COLLECTING BASIC BACKGROUND INFORMATION

An environmental assessment that must consider every square foot of a brownfield site and search for every known chemical is likely to be prohibitively time-consuming and expensive. Before the consultant begins the assessment, the owner can gather basic information that can help limit the scope of investigation. The owner can research questions such as these:

- What kinds of industrial chemicals, cleaners, solvents and other potentially contaminating materials, if any, does the current business use? What has been used on the site in the past?
- What kinds of inventory control information for these materials does the business have? Can it help identify any unexplained losses of any of these materials?
- What kinds of wastes does the business generate from its operations? How and

where does it store the wastes prior to disposal? Where does it dispose of the wastes? Where has it disposed of wastes in the past (with particular interest in any disposal on the property)?

- What spills of materials or wastes have occurred, and where? What spill cleanup was performed?
- Where are above and below-ground storage tanks? Floor drains? Piping systems? Waste discharge pipes? Cisterns and tile fields?
- What prior businesses existed at the site, before the current owner? What information about their practices can be learned?
- What information about site conditions already exists in government regulatory files, at either the local, state, or federal level?

Much of this information can be found in company records and files. Some of it requires research at government agencies. Owners should be careful, however, not to overlook the valuable information that can often be obtained from company employees. Senior personnel may be able to remember when storage and disposal practices differed from current standards. Assuming some continuity in business activities, long-time employees may be the best source of information about attitudes and practices under earlier, different, ownership.

MOVING TO A MORE FORMAL ASSESSMENT

Informal efforts can produce much valuable information. With this information in hand, the owner must decide whether to bring in specialists to conduct a more professional investigation.

Some sites — especially those only recently developed — may have no contamination at all. Available information may substantiate the belief that the site is in good condition: for example, no lost inventory of chemical materials, no spills, careful off-site waste disposal practices, and double-lined storage tanks.

More often, however, preliminary research will point to possible problems. It will reveal that materials have been lost or spilled. It will disclose on-site disposal practices or leaking tanks. This information is invaluable to the owner in judging whether to seek an assessment and how extensive an assessment to request.

Assessments come in all sizes and budgets. Each assessment, to a large extent, must be tailored to answer questions about a specific brownfield site based on the information already known about that site. This variety, and the tendency for environmental professionals to use unfamiliar terminology exclusive to their work, can often leave owners and others confused about what kind of activities might be included within an assessment.

This confusion is easily dispelled. An environmental assessment actually consists of several stages, not a single event or act. The goal of this process is to move from knowing general information about a site to knowing specific information about site conditions, through a series of ever more precisely focused inquiries. When contamination has been identified, the last stage of the assessment in many instances is the preparation of a strategy to clean up the site or isolate the environmental risk.

Although there is no official definition of each of the stages of the assessment process, there is general agreement about the purpose of each stage. There is also rough

agreement about the terminology that applies to each phase:

(a) Phase I Assessment. The first stage is designed to identify and review all relevant and already existing data that might provide insights about potential contamination. This effort, typically, would involve most of the inquiries that a prudent owner would make in preliminarily evaluating the need for formal assessment of the site, such as a review of business practices and documents, review of agency files, employee interviews, and research into prior uses and activities at the site. Usually, the investigators would also conduct a site inspection to identify areas of obvious environmental stress or releases of contaminants. The purpose of these efforts, often referred to as a Phase I assessment, is to develop information identifying particular areas of the site most likely to have contamination and information suggesting the likely nature of the contamination.

(b) Phase II Assessment. Using the Phase I information, investigators will develop a plan to collect samples of wastes stored at the site and of soil, groundwater, stream beds and sediments, or other areas that may shed light on waste spills and releases. A thorough plan will usually call for collection of a number of samples from each specific suspected contamination location and a number of additional samples from random locations to confirm that no other areas present problems. Investigators will collect the samples and analyze them for a range of possible chemicals expected to be present based on the Phase I information. This stage is often referred to as a Phase II assessment; it is sometimes called a Phase II characterization assessment.

(c) Phase II Delineation/Phase III. Phase II assessments often confirm the existence of contamination at one or more locations at a site. Unfortunately, these initial results will usually not define the full extent of the contamination, such as the surface area or depth of contamination present. These details are essential to projecting the cost of cleanup. Investigators will need additional sampling to

find the contamination boundaries; frequently, the effort to find the farthest reach of the contamination will require several rounds of sample collection and analysis, each somewhat further away from the location of the original sample. Depending upon local custom, all of these efforts associated with defining the extent of contamination may be called Phase II delineation assessment or they may be simply called a Phase III assessment.

(d) Phase III/Remediation Plan. Once all of the analytical results are available and all areas of contamination have been identified, engineers can prepare a plan to address each problem area. The plan may propose various alternative strategies, with varying costs and degrees of effectiveness. Depending on a variety of considerations, the plan may rely on treatment, removal, or placement of one or more barriers around the contamination. Again, local custom will determine terminology. In some places, this plan is called a Phase III, in other places it is called a remediation plan, a response action plan, or similar name.

The EPA and state agencies have regulations and guidance documents that provide suggestions or minimum requirements for each of these stages. Professional and trade associations, such as the American Society of Testing and Materials (ASTM), have also developed recommendations. In particular, the ASTM standard for conducting a Phase I assessment has a wide degree of acceptance. Owners may want to review it before taking their own preliminary look at site contamination. ASTM has a number of other helpful guides, including an overall process standard that makes recommendations for managing a brownfield assessment and cleanup and for interacting with local community interests. Appendix E of this guidebook lists additional sources of guidance. Owners will often be best served by employing ideas or elements from a number of sources.

OBTAINING FUNDING

Before committing to an assessment and beginning the search for a competent consultant, a brownfield owner should begin to investigate potential sources of public funding. Brownfield redevelopment is an important public policy objective, and numerous incentive programs at all levels of government encourage site reuse. Chapter 6 of this guidebook includes a general discussion of government financial support for cleanups. Among the programs providing support for assessments and investigations described in Chapter 6 are EPA's Targeted Brownfields Assessment Program and a number of state and local economic development programs.

The eligibility requirements for these programs vary and the application of these eligibility requirements can often have a direct impact on the redevelopment strategy and the timing of the transfer of ownership. For instance, it may become desirable to sell the property to a new, and innocent, purchaser prior to assessment or cleanup if the new owner is eligible for one or more assistance programs. A brownfield owner placed in this, or similar positions, may want to include provisions in the sale agreement that adjust the price if the buyer is subsequently able to obtain funding for environmental work on the site.

ALLOCATING THE COST AND RESPONSIBILITY FOR THE ASSESSMENT

The extensive publicity and attention paid to hazardous waste problems and site contamination over the last decade means that most people now realize land ownership can bring with it expensive responsibility for environmental problems. As a result, it is extremely rare to find a potential buyer so unsophisticated that he will consider buying property previously used for commercial or industrial purposes without requiring an assessment of the site. As a practical matter, the current owner of developed land should not expect to

sell the property without an environmental assessment being conducted at some point prior to sale.

Sellers and buyers frequently include discussions about the timing and responsibility for the assessment as part of their negotiations. The parties may agree that the seller should do the assessment, that it be done jointly, or that it be done by the buyer. They may also include provisions in the contract which limit disclosure of the assessment. For example, some sellers may allow a period of time for a prospective buyer to come on the site, perform an assessment, and then decide whether to go through with the sale. Some sellers, however, may also require a provision in the agreement that the buyer not disclose the results of the assessment to the seller. Through such a provision, sellers may hope to avoid gaining knowledge of environmental conditions that they might be obligated to disclose to the government or to future prospective purchasers. It is not clear whether these kinds of provisions are effective, or wise. Finally, any agreement for sale will assign or allocate the cost of the assessment, either implicitly or explicitly, as a part of the final financial arrangements between the buyer and seller.

As in many other situations, it is essential that a knowledgeable lawyer be consulted when a transaction involving contaminated property is under discussion. In most states, land transactions must be by written contract, and the need to address the question of responsibility for investigating and responding to environmental conditions will require careful drafting.

WORKING WITH A CONSULTANT

The environmental assessment process may require a broad range of skills: an understanding of applicable regulations, engineering proficiency, soil science expertise, hydrogeology knowledge, sampling and well-drilling capabilities, and several others. Few brownfield property owners will possess these skills themselves or even have these myriad talents within their organization. Most brown-

field owners will need to turn to an environmental consulting firm to perform the necessary assessment.

The selection, hiring, and management of an environmental consultant can be difficult and frustrating. Attention to some critical details can minimize the chance of disappointment and lead to a smooth and satisfying business relationship.

(1) Prequalify. Try to learn as much as you can about the environmental firms you may be choosing from. Talk to others who have used firms and learn of their experiences. Did the consultant keep them informed of developments? Did the consultant perform the work for the original budget? Was the consultant able to explain to the client project developments in words the client understood? Did the consultant appear to address questions from environmental officials promptly and thoroughly, or did there need to be several exchanges of letters before regulators were satisfied? If possible, talk to state and federal officials who work in the area and see if they would be willing to share opinions about consultants' recent performances.

Since each individual state's cleanup and brownfield programs will have its own rules and procedures, you should confirm that any firm you are considering is familiar with the relevant program, and agency officials, in your state.

(2) Use the solicitation process as a screening tool. Unless you have an established relationship with one firm, or have another reason to immediately select a specific firm, you will probably want to obtain bids or proposals from several firms. Use the request for these proposals as a tool to help you decide among the firms. For example:

- *Carefully define the project:* If possible, prepare a scope of work that identifies specific tasks you need to have performed. This will ensure not only that the bidders understand what you want but also that proposals are similar and can be easily compared. Include a task requiring the consultant to prepare an

engineer's cost estimate for remediation if the assessment discovers contamination in excess of regulatory standards. Although this number will only be an estimate, it will provide some approximation of cleanup costs, often the most significant factor in a brownfield project. Without this task in the scope of work, the owner might have to go through another selection process to retain a firm to generate this information, or have to accept a potentially costly change order to authorize the original firm to expand its scope.

- *Request references and qualifications:* Require proposers to describe not only their firm's experience with similar projects but also to name specific, experienced individuals who will work on your project. This section of each proposal should also list any required professional licenses or certificates possessed by the consulting firm.
- *Request a project description:* Ask the proposers to restate their understanding of the project and to describe their approach to meeting the objectives. Requiring some narrative component to each proposal will give you not only an insight into the firm's comprehension and creativity but also some sense of their ability to express their thoughts in a clear manner.
- *Require a proposed schedule:* Ask for a clear timetable for the project. If meeting deadlines is critical, emphasize this in your request.
- *Determine the contract type:* Specify the type of contract you want to negotiate: usually, either a time-and-materials contract or a fixed-price contract. Also, require a unit cost schedule so that you can gauge what unexpected additional tasks might cost.
- *Request a standard contract:* Ask for a copy of each firm's standard contract so that you can quickly evaluate whether

any conditions are unacceptable, before you spend time analyzing the proposal.

- *Require insurance coverage:* Ask each firm submitting a bid to provide a description and proof of insurance coverage for environmental impairments. The insurance must protect against actions by consultants that worsen existing site conditions.

(3) Maximize your information. Although you do not want to prolong the selection process, there is no reason to make the process excessively formal either. If you do not understand something in a proposal, ask for clarification. If you have not worked with an environmental consultant before, try to arrange for a meeting to evaluate interpersonal skills. You may invite all bidders to the site for an orientation visit before they submit their bids, or you may simply ask for an opportunity to interview the consultants.

(4) Select wisely. Even the best scope of work cannot foresee every eventuality. As a result, cost projections are inherently unreliable. While this does not mean that cost differences between bidders are irrelevant, using the low cost bid as the sole decision tool can be a misguided strategy. Where competing proposals are relatively close in cost, select the one that is stronger on other, more substantive considerations.

(5) Use contract negotiation constructively. Having selected a firm to perform the assessment, use the contract negotiation phase to establish a constructive relationship. Object to standard contract terms or conditions if they seem unreasonable; few consultants will risk losing a contract at this stage by refusing even to adjust boilerplate language. For example, it is not unusual for consultants' contracts to contain standard language limiting liability for errors to the amount of the contract. Property owners may be able to negotiate removal, or at least revision, of such terms. Reach agreement on expectations about progress reporting: property owners may want infrequent formal reports, frequent informal reports, or

some combination. Make sure to understand, before work begins, if there are any points during the assessment where it will be necessary to make decisions about the course or nature of the investigation. Most importantly, ensure that the firm or individual selected agrees that its role during the project is to (i) report factual findings; (ii) make recommendations if there is a need to refine the scope of work that is to be performed, especially in light of information developed as the assessment proceeds; and (iii) explain the significance of findings in terms of regulatory standards and other health and environmental concerns.

(6) Manage the assessment intelligently.

Having selected and retained a consultant, resist the temptation to simply trust in the skill and good faith of your expert. Make sure that the agreed upon progress reports are provided, and read them thoroughly. Ask questions about any information that is unclear. Periodically ask the project manager whether the assessment is on schedule and under budget. Closely monitor any interaction between your consultant and regulatory officials.

Managing the assessment also includes making a decision about the extent of interaction the property owner (or other party responsible for initiating the investigation) and its environmental consultant should seek with the environmental regulatory agency during the process. In some situations, the applicable procedures will require a certain level of contact. For example, the rules of a state voluntary cleanup program may require submission of the proposed scope of work for approval or filing draft sampling results for review, as discussed in Chapter 7. An experienced environmental attorney can provide advice about whether such requirements apply to a specific project. In many instances, however, the property owner may be able to design and carry out the assessment without ever having to discuss any aspect of the work with the government. The first required contact may occur only if formal approval (and possible release of liability) is sought for the assessment, or for subsequent cleanup results.

Property owners may, therefore, enjoy a great deal of discretion about whether to

What if Your Informal Investigation Turns Up No Problem?

You turn out to be one of the lucky owners: your informal investigation seems to show that your property is free of contamination. You bought the site undeveloped, built a business on it, and have been extremely conscientious about spills, disposal practices, and general housekeeping. The question remains: can you sell or redevelop without paying for a professional assessment report?

The answer is probably not. If you plan to redevelop the site for your own purposes, and do not have plans to sell it in the foreseeable future, you have very little reason to fear enforcement by government regulators. An assessment report that merely confirms your own conclusions, therefore, is of little use to you. Still, if you need bank financing for your project, it is likely that the loan reviewers will be encouraged by your glowing report but not completely persuaded. An owner in this situation should not be surprised to find the bank requiring a preliminary or Phase I assessment by an inde-

pendent environmental consulting firm. This limited review of existing site information would largely serve to document your findings. It is possible that the bank would be satisfied with this level of effort, and not require additional information before considering the loan application.

If you are hoping to sell your property, the absence of any obvious evidence of contamination should help to attract potential buyers. New owners, however, often are very worried about acquiring property with undiscovered contamination problems and assuming the legal liability for cleaning them. Prospective purchasers will almost certainly insist on a Phase I assessment by an outside firm. It is likely that they will request, as well, at least some actual soil and groundwater sampling to substantiate the belief that the site is clean. The scope of this sampling activity should be much more limited — and thus less expensive — than if the preliminary information suggested areas of actual contamination.

involve the government in their assessment and other brownfield activities. Voluntarily seeking agency participation in the process can bring a number of advantages. Agency personnel may add information about site conditions to those already known by the owner. Agency technical experts may be able to offer suggestions that will make the assessment more comprehensive, more representative, or more efficient. Once an agency has endorsed a particular scope of work, it is much less likely to reject the resulting assessment report as being intrinsically flawed or insufficiently thorough.

Nonetheless, there are clear potential pitfalls in this approach as well. Agency staff with limited resources may take a long time to review proposed work, introducing more delay into the process. Some reviewers may seek to enlarge the scope of work, unnecessarily, based on a belief that more data is always better. Bringing the project to the agency's attention early in the assessment may lead to heightened interest by the agency throughout the entire process, including interest undesired by the owner at certain stages.

There is no single level of interaction which is right for every project. A workable general guide is that projects that present unusual or difficult assessment or cleanup decisions warrant more interaction, and projects that present relatively straightforward decisions about, for example, number and locations of samples will not benefit as much from interaction with the government. Owners should always, however, seek guidance from the environmental consultant they select as well as from their legal advisors.

TAKING THE NEXT STEP

In the best of worlds, the site assessment results confirm that there is no environmental contamination worthy of regulatory concern. In those situations, the property owner can avoid the brownfield label and market the site as free from environmental liability. Some states may even offer a certification that the site requires no cleanup, which can serve as an additional incentive to buyers.

Many sites, of course, will prove to have environmental contamination in some areas that exceeds applicable maximum regulatory levels. These sites require some action, both to bring them into compliance with legal requirements and also to make them attractive to potential tenants or buyers.

It is difficult to generalize about the cleanup responses that the brownfield owner may be able to choose from at this point. Contamination levels can vary quite widely from site to site, and cleanup options can vary even more widely. Some sites will require a cleanup consisting of nothing more than the excavation and removal of a few wheelbarrows of soil. Other brownfields will require the removal of massive amounts of wastes, of many truckloads of soil, or operation of groundwater treatment wells for many years.

Selecting a cleanup option from this array of choices requires careful consideration of numerous factors. The owner must weigh cleanup options in light of the degree of contamination and the potential future use of the site. The owner should involve real estate advisors, the environmental consultant who performed the assessment, and legal counsel knowledgeable about the relevant environmental requirements. The expertise of all these individuals may be necessary to select the best path. Cleanup decisions and the government programs that govern them are discussed in more detail in Chapter 7.

The community around a brownfield can be a powerful force supporting the redevelopment of a long-abandoned property. Among other things, community support can help brownfield plans win approval of agencies and elected officials. On the other hand, communities that feel that they have been entirely excluded from the redevelopment process or feel that their views have been disregarded by those responsible for the process can become significant roadblocks that can enormously complicate a brownfield project. In short, community interests can play a crucial role in making a brownfield redevelopment project a success, or a failure. This chapter offers guidance for property owners and others who wish to design a meaningful participation process.

The community will often see itself as having a great deal hinging on the future of a brownfield site. After all, it is the community that perceives itself as having suffered any ill effects from exposure to conditions on the property. It is the community whose other property values may have declined due to proximity to the brownfield. If the site has been unused for any period of time, local residents will suffer the greatest loss of employment opportunities. Property owners who can accept the community perception of itself as a critical partner in the redevelopment process are more likely to develop a constructive relationship with the community and its members.

Most people and most communities want to feel they have some control over their lives and that their surroundings do not dominate them. The willingness and ability to change a project in response to community concerns can be critical to building support for a project. Rapport and credibility depend on trust

and a continuing exchange of views.

Some brownfield projects will fall under laws that require open disclosure of information and prescribe a public participation process. For example, many state voluntary cleanup and brownfield programs require certain types of public participation. Many other brownfield projects, however, will not be subject to legal requirements regarding public process or the legal requirements will be minimal. Here, the owner or redeveloper will have great latitude in deciding how and when to involve the community effectively. These decisions require a careful balancing of the benefits that may be gained from public participation and support against the possible commitment of time and effort needed to allow such participation to occur.

Developing a relationship with the community is a skill every much as specialized as conducting an assessment on the site. The brownfield owner may find that its consultant and environmental attorney can be helpful in developing and implementing a community involvement strategy. Some experienced environmental professionals have well-developed public participation capabilities that can enhance the owner's relationship with the community. Before asking your advisors to play this role, however, confirm that they have actual experience in community interaction. If the owner decides not to use any of the environmental professionals, there is a network of neighborhood facilitators who can provide suggestions for someone to help guide the dialogue. In addition, guidance documents, such as the American Society for Testing and Materials Standard Guide to the Process of Sustainable Brownfields Redevelopment,

provide suggestions and recommendations for working with communities. See Appendix D.

A brownfield owner who wishes to involve the community in a meaningful way in the redevelopment process should consider devising a careful strategy at the earliest opportunity. There is no standard approach to community involvement. Property owners will need to develop a strategy for their particular site. Several general principles, however, may help property owners develop and implement their efforts to work with communities.

Early and Pro-active Outreach: Learning the community's interests, including the interests of various community organizations, can be an important first step in encouraging acceptance and support for the project. Community interest in brownfield cleanup and redevelopment projects will range from apathetic to passionate. The interest may vary depending on many factors, including the relative size of the project, both physical and financial, and the history of the site.

Ideally, initial dialogue between the owner and community interests should occur even before the environmental assessment is conducted. Especially at sites that have not seen activity for some time, the sudden appearance of visible and energetic activity on a brownfield can create uncertainty and anxiety in neighbors. This is all the more likely to occur if the consultant and its employees are dressed in unusual protective gear or are conducting what appear to be scientific tests on the site (which is what the act of sampling may resemble).

One way to avoid this understandable anxiety is for the owner to reach out to the community prior to the beginning of assessment activities. At this stage, it may be sufficient for the owner to convey his interest in bringing economic activity back to the site and outline the steps in the process. Giving the community a clear understanding of the different tasks likely to occur in the coming months can be a valuable first step in establishing a constructive relationship. This early approach will also create an opportunity for

a dialog through which the community can describe its interests in a brownfield redevelopment project.

Regular Communication on Key Issues: As the process unfolds, the owner should maintain regular communications with community members and always help residents and neighbors to anticipate the next group of activities that will occur. It is especially important that the owner review for the community when key decision points are reached in the process. The community will be most interested in two key questions: what kind of cleanup will be carried out at the site and what new use or business will be established at the site? Owners who have decided in favor of an open and inclusive process will strive to provide full and understandable information about these topics, including explaining the link between the cleanup choices and the end uses which might be brought to the site.

Outreach to Wide Range of Community Stakeholders: Because communities are made up of many different groups and interests, property owners should consider making an effort to work with as many groups as possible, including low-income and minority residents near the property. If needed, property owners should consider providing information in languages other than English and providing translators at meetings.

Promotion of Common Goals and Interests: The brownfield owner's goal throughout these interactions should be to make the community an ally and supporter for the redevelopment of the site. Both owner and community share many common goals: better understanding of the environmental conditions on the site; a cleanup plan that satisfies legal requirements; and redevelopment that enhances the economic profile of the site to the benefit of all. Respect, communication and participation on the part of both the owner and the community can make it much more likely that those goals will be achieved.

The owner's interest in working closely with the community is not simply to address

potential opposing voices. Active community support can be extremely helpful in obtaining assistance from public funding programs to encourage brownfield reuse; these programs are often very responsive to local endorsement. Community support can also be helpful in obtaining favorable consideration from local government when zoning variances or exemp-

tions are required. In some states, approval of the cleanup may be made easier if the relevant agency is convinced there was an effective public involvement process. Finally, a prospective buyer undecided about a brownfield site may very well be influenced by a visible show of support for both the project and the buyer's entry into the community.

Tips for Involving the Community

There are many ways for a brownfield owner or redeveloper to try to involve the community and keep it informed about the status of plans and activities. Some effective methods include:

- Attending civic association or neighborhood group meetings and giving periodic progress reports;
- Meeting on a regular basis with members of the local CDC staff and providing them with progress reports;
- Holding meetings with interested community members at times and locations convenient for them;
- Meeting on a regular basis with members of the local government (particularly the planning commission or development offices, if they exist) to offer progress reports;
- Developing a mailing list of involved and interested residents and sending them a regular written report describing progress (if appropriate, this distribution can be done by e-mail);
- Providing updates to local newspapers and newsletters that can result in a series of articles reaching a wide readership;
- Ensuring that residents and other interested parties have many opportunities during the progress of the project to offer comments and suggestions, rather than simply receive information about subjects they perceive they cannot influence.

Financing a brownfield property development is often a challenge. The contamination of the property hurts the prospects of financing in several ways. First, it reduces the market value of the property, meaning the property is worth less to potential lenders as collateral. Second, cleanup cost projections can dramatically underestimate the real costs, resulting in the borrower having much less capital left to initiate its business activities. Finally, despite some helpful changes in the law, lending to a brownfield project can threaten the lender, in some unusual circumstances, with liability for the underlying environmental problems.

Despite these challenges, some lenders are becoming more comfortable and familiar with financing contaminated properties. Property owners should consider seeking out lenders that have experience with contaminated properties or at least keep in mind the disparity among banks in experience and comfort in dealing with brownfield properties.

TRADITIONAL LOANS

This guidebook assumes that owners and developers have experience in obtaining loans and financing from banks and other traditional sources and does not attempt to explain that process. The contamination at a site may, however, complicate the process of obtaining such financing.

The timing of the application for financial assistance assumes a much greater significance in brownfield projects. Many traditional private lending institutions will not lend money at the beginning of a brownfield redevelopment

to pay for assessment or remediation efforts, although there are exceptions. In addition, many banks will decline at the early stages even to commit to financing the post-environmental traditional construction activities because they fear cost overruns in the environmental work that will make their borrower less likely to repay. Banks may now be willing, however, to offer financing for the bricks and mortar related to new construction once the environmental work is completed and the related costs are relatively known and fixed. Thus, brownfield borrowers may need to think in terms of a series of loans, with the early borrowing helping, in effect, to create a more complete picture which will encourage additional financing. Subsequent lenders may in fact “take out” the initial loan, consolidating the debt for the project.

Furthermore, the insurance products that have become more readily available in recent years can be used by property owners to provide assurances to lenders with respect to remediation costs. In particular, these policies can address lenders’ continuing fears that the financial viability of a project will be seriously impaired if environmental cleanup costs turn out to be far more expensive than forecasted, either because the remedy proves to be more costly or because additional contamination is discovered. Insurance underwriters now offer products that specifically address these concerns. These products allow the owner and the lender to establish a known cap on the costs associated with addressing environmental problems. This certainty provides great comfort to lenders about the security of their financial position. Some banks may even require

the applicant to obtain insurance coverage that will protect against unexpected costs arising out of an as-yet-uncompleted cleanup. Insurance products that are available directly to lenders and to property owners are discussed in Chapter 3.

Applications for bank loans after the assessment and cleanup are completed are more likely to be viewed favorably when the regulatory agency has agreed that no further action is necessary. As described in Chapter 8, after the cleanup is completed the owner can sometimes receive approval and limited liability release documentation from the state. These may take the form of a covenant not to sue, a certificate of completion or a no-further-action letter. The bank may also want the results of the assessments and the final reports of the cleanup contractor that show how the risk has been reduced.

The federal government has enacted a law intended to reassure banks that they will not face liability for existing environmental contamination on sites they use as collateral for brownfield loans. In general, the law makes clear that a lender should not be held liable as long as it acts in the normal role of a lender, including foreclosing and taking ownership of the property if that becomes necessary to protect the loan. The mere act of lending should not create a basis for liability. Despite this protection, some banks may still be reluctant to lend at brownfield sites, either because they are not yet familiar and comfortable with the new rules or because they remain worried about cost overruns in the cleanup which can impair the borrower's ability to repay.

Changes in the law to offer protection to banks who lend to brownfield projects is only one example of the financing incentives which have been created to encourage this kind of redevelopment. Another is the federal Community Reinvestment Act, which provides incentives to commercial banks to lend money for the redevelopment of industrial property. This program is intended to help banks overcome their reluctance to make money available to brownfield projects by allowing such loans

to count as credits towards each bank's obligation to reinvest in economically distressed and other needy areas.

BROWNFIELD-SPECIFIC FINANCING

Several government agencies have programs that provide financial support for brownfield cleanup and redevelopment. In some cases, private property owners may not be eligible to receive direct support from these programs, but may be able to work with the direct recipients, such as local governments, to obtain financial support. In addition, the eligibility requirements for these programs and incentives can vary as widely as their actual financial benefits. Many programs, for example, make assistance available only to "innocent parties." This limitation will generally exclude property owners who directly contributed to the contamination. It will also exclude any other persons who were directly involved in introducing contamination to the brownfield. A current property owner who did not actually contribute to contamination, however, may be eligible for assistance even though he remains potentially liable for cleanup under laws based solely on ownership.

EPA Programs: The U.S. Environmental Protection Agency's Targeted Brownfield Assessment program provides assessment services, either through government employees, state governments, or private firms under contract to the government. Targeted brownfield assessment, for example, may be carried out by state agencies who receive EPA funding for these efforts. Additionally, more than 300 cities and communities have received funding from the EPA to create pilot programs to encourage brownfield redevelopment. Some of these programs have money dedicated for support of assessment efforts, and this funding may be available to the site owner.

EPA also sponsors the Brownfields Cleanup and Revolving Loan Fund Demonstration Pilot Program. The program provides money to eligible state and local governments that then use the money to set up revolving loan funds for

brownfield cleanups. Typically, the fund will charge low interest rates and use the loan repayments to provide new loans to clean up other properties. The money from this program must be used to clean up sites and may not be used for redevelopment, such as construction of a new facility or marketing a property.

Department of Housing and Urban Development (HUD): HUD has several programs for which brownfield properties may be eligible. Although HUD has programs that are specifically designed for brownfields, brownfield redevelopment projects also qualify for some of its long-standing, traditional programs. Because HUD focuses on urban housing, most of its brownfield assistance is related to housing in some way, making it less likely to be useful for purely commercial or industrial redevelopments. But some HUD offices have been creative and flexible in applying the rules, so it may be worthwhile to investigate HUD financing even when the project does not directly involve housing.

HUD grants, in most cases, are awarded initially to a branch or agency of local or state government. This will require the owner or developer to work through the appropriate office to learn about and participate in the program. Community Development Block Grants (CDBGs), for example, are a HUD program that provides relatively large grants to local governments, which then may use the money for a wide variety of purposes including brownfield-related activities. For example, if environmental conditions at a site could affect users of the project, then HUD funding may be used to pay for environmental assessments of the site. Developers may also be able to get low-interest loans from CDBG funds to pay for cleanup costs.

A local government may be able to use another HUD program, so-called "Section 108" loan guarantees, to help finance a brownfield redevelopment. Under this program a local government may issue bonds, which are guaranteed by HUD and sold by private banks, to cover the cost of a redevelopment. The money generated by the bond sale may be available to owners and developers who plan redevelop-

ment that addresses housing issues or urban blight. This program may rely on, or require more control by, the local government than many developers would prefer. Furthermore, the Brownfields Economic Development Initiative (BEDI), enacted in 1998, specifically provides communities with grants to clean up and redevelop brownfields, in conjunction with Section 108 loan guarantee funds. Grants are awarded on a competitive basis and may be used for any eligible activity under the Section 108 program such as property acquisition, environmental cleanup, and economic development. HUD awarded \$25 million in BEDI grants to 23 communities in 1998; the same amount was appropriated for 1999.

Brownfields located within a HUD-designated Enterprise Community (EC) or Empowerment Zone (EZ) may also be eligible for additional HUD assistance. Since only slightly more than 100 of these ECs or EZs have been established, and property owners have no control over whether they are included within such an area, they should simply know to ask about their eligibility.

Department of Commerce — Economic Development Administration (EDA): EDA works in partnership with state and local governments, regional economic districts, public and private non-profit organizations and Indian tribes to implement economic development and revitalization strategies in distressed communities. In recent years, an increasing portion of EDA program funding, including assistance for planning, technical assistance, revolving loan funds, research, and public works, has involved brownfields redevelopment. Between fiscal years 1992 and 1996, EDA disbursed almost \$43 million to public and non-profit entities for 25 brownfield-type construction projects. In 1998 alone, EDA provided nearly \$80 million to 78 brownfields projects.

Federal Home Finance Board (Finance Board): The Federal Home Finance Board has a Community Investment Cash Advance (CICA) Program that provides advances to member banks, and nonmember borrowers, who in

turn use the advances to provide long-term financing for housing and economic programs that benefit families with low incomes. In particular, CICA targets economic development projects located in EZs or ECs that may include brownfield cleanup and reuse as part of their revitalization strategies.

State and Local Agencies: State economic development agencies may also be a source of financing or other assistance, possibly with fewer restrictions than the EPA programs. Many state economic development agencies have incentive programs that focus funding on assessment, cleanup, basic construction, and infrastructure development for brownfield sites. In some instances, these programs are designed exclusively for brownfield applicants; in other instances, more broadly defined redevelopment funding programs give special preference or priority to brownfield site applicants. Larger cities are also beginning to have their own brownfield programs. Local CDCs and city redevelopment authorities may be able to provide or identify other sources of funding for brownfield projects, often for both environmental and construction costs.

In addition, some local governments have used Tax Increment Financing, or TIFs, to dedicate taxes to secure financing for development activities, which might include brownfields redevelopment tasks, such as site assessments. The rules for TIFs vary by jurisdiction, but generally they allow local governments to issue bonds to finance development costs in a specific area, such as site improvements or infrastructure. The local government pays off the bonds from the increased property taxes that result from the development. TIFs were originally conceived as a method for redeveloping blighted areas or property that was being ignored by developers, so they are well-suited to helping redevelop larger brownfields areas. Local

governments vary greatly in how they use TIF funds, so property owners will need to work with the local government to determine if and how they can benefit from a TIF.

Tax Incentives: In addition to direct financial assistance, federal and state tax incentives are available to property owners and developers to help reduce the costs of brownfield projects. The federal tax incentives include the Taxpayers Relief Act, which allows eligible taxpayers to deduct qualified cleanup expenses at eligible brownfields in the year they are incurred, and rehabilitation income tax credits for 10% of the expenses of rehabilitating structures built before 1936. Many state and local governments also provide tax breaks for brownfield projects. Two states — Michigan and Pennsylvania — have created special zones, usually in severely distressed communities, where virtually all taxes are abated for an extended period of time. Owners of brownfields in those states should learn whether their sites are located in such zones.

VENTURE CAPITAL

Finally, there is a small but growing number of venture capitalists who see brownfield sites as a form of distressed asset: something whose value has been severely discounted by the traditional market due to irrational fears and which therefore offers the potential for larger than normal return. Although the suitability of this funding source will be limited, it may be quite appropriate in larger brownfield projects, where the amount of funding needed is large but the ultimate return on investment may also be great. Brownfield owners should expect, however, that venture capitalists will want to gain an equity share in the project and may also want to exercise some control to protect their investment.

Once an assessment is completed, property owners can focus on the type of cleanup they want to perform and the regulatory program, if any, that may apply to the cleanup. This chapter provides general information about state voluntary and brownfield programs, including eligibility requirements, incentives for participation, and cleanup standards. The chapter also discusses considerations for property owners who may want to clean up their properties independent of government oversight. In addition, this chapter reviews property owners' general cleanup and reuse options and outlines cleanup procedures and tips for working with consultants.

This guidebook focuses on cleanups under state voluntary and brownfield programs. Other state and federal programs, however, could apply to the cleanup of a brownfield site, including the federal Superfund program, the Resource Conservation and Recovery Act (RCRA) Corrective Action and Underground Storage Tank Cleanup Programs, and state superfund regulatory and enforcement programs. These regulatory programs could apply if a site is not cleaned up voluntarily and the state or federal government decides that an enforcement action is necessary to clean up the property. In addition, in some cases, a voluntary or brownfield program could determine that a specific brownfield property more appropriately belongs under one of these regulatory programs, because of the type and extent of contamination. It is also possible that parts of a brownfield property could be cleaned up under a state voluntary or brownfield program while parts of the property are

cleaned up under a separate regulatory program.

Accordingly, it is important to determine prior to applying to a voluntary or brownfield program whether a property should be cleaned up under another program. This can be determined by consulting with legal counsel and technical consultants, as well as by gathering information about the various programs from the state environmental agencies and other resources. Appendix B describes some of these programs more fully and could be used as a starting point for understanding the scope of the various programs.

Some of these programs, most notably the RCRA Underground Storage Tank Cleanup Program and special state programs for cleanup of dry cleaning facilities, rely heavily on voluntary compliance and may offer financial assistance for cleanup. For example, funds may be available to reimburse property owners for cleanup costs in excess of a certain amount. Appendix B also discusses these programs.

In addition, some property owners may elect to clean up their properties independently, without regulatory oversight. As with conducting an assessment without government interaction, this approach may have several disadvantages, as discussed later in this chapter. Indeed, this approach may not be an option at all for the cleanup of some properties. Property owners with sites that are eligible for independent cleanups may still want to determine the state voluntary or brownfield program cleanup standards that could apply to their cleanup, as a frame of reference in cleaning up their properties independently.

BACKGROUND ON STATE VOLUNTARY CLEANUP PROGRAMS

Voluntary cleanup programs are state-sponsored programs that encourage private parties to clean up contaminated properties without enforcement by the state. They typically include requirements for eligibility, cleanup standards, and provisions for overseeing the cleanups. Most of these programs rely on volunteers to propose a cleanup plan, with the state typically reviewing and approving the plan.

Forty-eight states allow volunteers to clean up contaminated property with some type of state review or approval. Only North Dakota, Wyoming, the District of Columbia, and Puerto Rico have no system for voluntary cleanups.

State programs vary considerably in how they approach voluntary cleanups and, therefore, property owners should learn the specifics of the program that applies. Property owners can obtain information about their states' programs by searching on the Internet for the state department of environment web site, writing or calling to request information, or by reviewing a book or study that summarizes state programs (see Appendices D and E).

Eligibility. The first question for a property owner (or prospective buyer) is whether the property is eligible for a particular program. This can only be answered by the state agency, but some types of sites are excluded by many states. Sites often ineligible for a voluntary cleanup include:

- a site that is currently listed on the National Priorities List under the federal Superfund program;
- a site that is being investigated or cleaned up under the federal or state hazardous waste (RCRA) program; or
- a site being cleaned up under a state's superfund or regulatory cleanup program.

A related question is whether the property owner is eligible for the voluntary program. Again, only the state agency can answer for a specific person. People who usually *are* eligible include:

- prospective buyers of the property;
- local governments;
- community development agencies; and
- current owners of the property.

But, some states exclude a property owner if that person caused the contamination of the site. Some states also exclude any prospective volunteer that:

- is currently in violation of environmental regulations;
- is subject to ongoing enforcement actions; or
- has been convicted of a violation of environmental law.

Even if one or more of the above applies, the potential volunteer may be eligible in many states and should check with the state agency.

Incentives. Most states provide incentives to encourage volunteers to participate in their voluntary cleanup programs. Most states, for example, offer some form of release from liability upon completion of a voluntary cleanup that the state has approved. The release from liability may cover only the contamination addressed by the cleanup, excluding unknown, pre-existing contamination or new releases of hazardous substances, as discussed in Chapter 8.

Other common incentives include:

- expedited or efficient oversight of the cleanup;
- technical assistance;
- low-interest loans to volunteers; and
- tax credits.

Financial incentives are often offered through economic development programs administered by state agencies other than the agency overseeing the brownfield cleanups.

BACKGROUND ON STATE BROWNFIELD PROGRAMS

About half of the states have gone beyond their voluntary programs to target brownfields not only for cleanup but also for reuse. Some states supplement their voluntary

programs with programs specifically for brownfields, while others have separate brownfield cleanup and redevelopment programs. The distinction between voluntary programs and brownfield programs is not always clear and may vary from state to state. Voluntary programs typically do not focus on redevelopment of the contaminated properties, and they may not target urban properties specifically. Voluntary programs often are aimed at getting simple, less contaminated sites cleaned up regardless of whether they are reused. Brownfield programs are more likely to focus on redevelopment and may be part of a broader effort to improve distressed urban areas. Since a particular state may not make such distinctions, it is important to look at a state's voluntary and brownfield programs if it has both.

Eligibility. Eligibility criteria are often basically the same as the criteria for voluntary programs, as discussed above, but sites must also be abandoned or underused and have potential for redevelopment. A few states, including Missouri, New York, and Texas, have special brownfield programs for municipally-owned property.

Some states have more specific requirements. In Florida, for example, “brownfields areas” must be designated by the local government based on redevelopment potential, private sector interest, recreational open space potential, cultural and historical preservation value, potential jobs, potential economic productivity, and consistency with local comprehensive plans and local land use. Delaware includes sites where jobs are created and business investments are made.

Incentives. Most states provide incentives to encourage cleanup and redevelopment of brownfields. There are two general categories, liability relief (discussed in Chapter 8) and financial incentives (discussed in Chapter 6). Financial incentives may include:

- low-interest revolving loan programs;
- loan guarantees;
- tax credits;
- grants;

- “bonus refunds” for each new job created;
- free site assessments;
- grants to local governments for investigation and cleanup;
- reimbursement of cleanup costs;
- reimbursement of municipalities’ costs associated with investment and cleanup; or
- tax increment financing.

Because each state develops its own program, it is important for anyone interested in participating in a state voluntary cleanup or brownfield program to investigate the eligibility requirements, incentives for participation and other aspects of the programs in the particular state.

CLEANUP STANDARDS UNDER STATE VOLUNTARY AND BROWNFIELD PROGRAMS

The cleanup standards or guidelines a state uses for deciding how much cleanup is required at brownfield sites are a large factor in determining the cost and length of cleanups. Most states have now established so-called “risk levels” that describe the most serious threat to human health and the environment that can be tolerated from any contaminated site. These risk levels can be expressed in terms of the maximum concentrations of contaminants that are permissible on a site. Although there are many different ways to establish these concentrations, two methods are far more commonly used than any others. In the first, the state announces actual maximum concentrations for specific contaminants that can be allowed in soil or groundwater after a cleanup. These numerical values — often called generic standards or statewide health standards or default standards — are applicable to any site. In the second approach, the state allows the volunteer proposing the cleanup to develop contamination concentrations expressly for that site based on specific information about the contaminants present, the site’s geologic characteristics, the potential

use of the site, and other factors. The concentrations derived from these site specific factors are an alternative way to establish maximum allowable concentrations of contaminants that meet the risk levels set by the state. It is important to note that many states allow parties to choose either of these (or perhaps another) method, or even to use a combination of methods.

In recent years, most states have decided to consider the future use of a site in setting cleanup standards. If a site will be used for an industrial or commercial facility — where children will not be exposed to contaminated soils, or groundwater will not be used for drinking — the cleanup standard may be set at levels that allow contaminated groundwater or soils to be left in place. This is considered to be acceptable because the planned land use of the site will reduce the risks that people will be exposed to the contaminants. In such cases, so-called institutional controls may be used to assure that the use remains the same in the future and to protect public health and the environment if a future owner proposes to change the use of the site.

Institutional controls are legal and administrative mechanisms that provide an additional method of reducing the likelihood of exposure by changing people's behavior so they avoid being exposed. Institutional controls include:

- warning signs;
- legal notices;
- land use controls and zoning;
- restrictions on how property may be used, often included in the deed to the property,
- restrictions on the use of groundwater for drinking;
- warnings to people not to eat fish caught in particular lakes and streams; and
- education programs warning of particular risks.

Each of these works in a different way to convince people to avoid exposing themselves to the contamination. Many have successful track records in preventing harm, but none can totally eliminate the possibility of exposure.

Almost all states use the same cleanup standards for brownfield sites as for voluntary cleanup sites. A few states may offer different standards or cleanup approaches as additional incentives for brownfield cleanups.

CLEANUP REMEDIES

In some cases, the cleanup remedy selected for a brownfield property will remove the contamination that is presenting a risk to human health and the environment. In many cases, however, the cleanup may leave some contamination on the site. In these cases, the remedy selected for the site may attempt to prevent exposure to residual contamination that exceeds allowable risk levels. One method of preventing exposure is to contain the contamination. This is usually done through some form of engineered control such as placing a cap over contaminated soils that isolates the hazardous materials and prevents exposure. The most common containment methods are caps constructed out of asphalt, concrete, clay, or clean soils and de facto caps where contamination under a structure is left in place relying on the structure to function as a cap. There is always a possibility that the containment system will fail at some point, either due to wear or to deliberate action, and re-expose the contamination. Engineering controls are, therefore, usually linked with institutional controls.

CLEANUP AND REUSE DECISIONS

Property owners in many states can now consider the intended uses of their brownfield sites in determining appropriate cleanup. In the real world, of course, there is an almost infinite range of potential uses, ranging from residential use at one end of the spectrum to very heavy industrial use at the other. In practice, however, cleanup programs with use-based flexibility will usually offer only two cleanup choices: a cleanup which allows for essentially unrestricted use — commonly called the *residential standard*; and a cleanup which allows for any use other than residential

(or similar uses such as hospitals, senior care facilities, day care, and the like) — usually called the *nonresidential standard*. Thus, commercial activities, retail activities, and various manufacturing activities would all be permissible at sites cleaned up to satisfy the same nonresidential standard.

Assuming that the assessment shows soil, groundwater, or other contamination on your site, you must decide how thorough a cleanup you wish to implement. Generally, although not always, more thorough cleanups will be more expensive initially and take more time to implement than cleanup plans with more limited goals. More thorough cleanups will also generally allow the property to be used for a wider variety of purposes.

While it is, as always, difficult to generalize about the numerous cleanup options that a brownfield owner might choose from, most situations will fall into one of four basic categories:

(1) Remove or treat to allow residential use. The owner can choose to treat or remove contamination on the site until the levels meet the applicable standards which would allow the property to be used for residential purposes. This will be the most protective standard set by the government, and the cleanup will usually require the highest immediate costs and take the longest to implement. In return, the owner will now be able to offer the property for use without limitations based on any environmental contamination or health threat posed by conditions on the site. The property will be able to be safely used in the future for purposes that present the greatest risk from exposure to contamination — residential use — as well as in any other way the owner desires. Anyone interested in buying the site and using it in the short term for uses other than residential — retail or light industrial, for example — may now be more interested in acquiring the property because they know that they can also sell it in the future for residential use if they wish (assuming, of course, that they do not introduce new contamination to the site).

This cleanup choice, despite its obvious

advantages, may not be appropriate for every brownfield site. Cleaning to a level that allows residential use may be so expensive that it makes sale or redevelopment of the site unprofitable, and therefore not feasible. Even if the cleanup costs can ultimately be justified by the enhanced value of the property, the owner may not be able, or want, to absorb these costs in anticipation of a sale. Further, the property may not be suitable for residential use. Zoning may prohibit it, or the character of the site and surrounding uses may make residential use highly inappropriate for the foreseeable future.

(2) Contain contamination to allow residential use. If residential use is appropriate and desirable, the brownfield owner might consider addressing contamination not by treating or removing it but by establishing barriers between the contamination and future residents who may live there. (This will only be possible in those states that allow barrier cleanups at sites to be used for residential purposes.) This approach might involve multi-unit housing where areas of contaminated soil are covered with concrete or macadam parking areas, or are covered by building foundations. Where contaminated ground water is involved, the owner might be able to meet residential standards by substituting a clean public water supply for unhealthy well water. Use of these institutional and engineering controls will frequently cost less than permanently dealing with the contamination problem by treatment or removal and may be sufficiently effective to allow residential development.

These kinds of cleanups allow the brownfield property to be used for unlimited purposes, but not in unlimited ways. For example, residential use is allowed, but single family homes with yards and gardens are not. Residential consumption of water is acceptable, but provision of that water by private well might not be permitted. These restrictions may also limit later resale of the site, since new purchasers must either respect these limitations or conduct additional cleanup at the time they acquire the site. Finally, it may be

very difficult to predict the market demand for property offered for residential use which is safe only so long as various barriers or other devices remain intact.

These limitations, of course, are based upon protecting people on the brownfield from remaining contamination when the site is used for residential purposes. Depending on the actual levels, future users may be able to disregard certain controls required in the initial cleanup if they convert the site to industrial use or to other uses that do not involve residential activities on the site.

(3) Remove or treat to allow nonresidential use. The brownfield owner confronted with contamination which requires some remedial response may decide residential use is not feasible under any cleanup scenario. This conclusion may be based upon the costs of any cleanup that allows for that use, it may be driven by zoning or similar practical use considerations, or it may simply reflect the current owner's evaluation that the most profitable use of the site is for some commercial purpose. In this situation, the owner can choose to carry out a cleanup that does treat or remove existing contamination, but only to those levels which are deemed acceptable under the law to allow nonresidential uses.

This cleanup approach results in a conditional kind of complete and permanent remedy. Once the cleanup is completed, the property will not present threats to human health or the environment for nonresidential uses. The legality and safety of these uses will not be dependent upon maintaining any controls or barriers, such as parking lots or building foundations. The actual levels of contaminants in the soil will have been reduced to a point that they do not present a risk to workers or persons coming to the site for a limited period of time. Contaminated ground water may continue to present a problem, however, and a safe supply of water may need to be provided for any people drinking it.

Cleanup by treatment or removal to nonresidential use contamination levels means that a business use on the site will not have its profitability affected by future costs associated

with maintaining or replacing barriers. Perhaps more importantly, the site will be suitable — at least from a cleanup standpoint — for any kind of nonresidential use since no areas of the site will be barred from construction or other redevelopment activities based on a need to avoid disturbing a barrier or cap over contamination. Lastly, this freedom also means that a party considering buying the site now does not need to worry as much about the effect of the environmental conditions on a subsequent resale of the site. So long as future buyers do not want to convert the site to residential use, they will face no limitations on the ways in which they might use the site. This should allow the site to retain its value through subsequent transactions.

(4) Contain contamination to allow nonresidential use. The contamination at some brownfields will be so extensive that the owner cannot afford, or the site's value will not even support, treatment and removal to reach nonresidential levels. The least expensive cleanup, generally, will involve simply utilizing barriers or other measures which isolate or contain the contamination and allow the property to be used for nonresidential purposes. As with other remedies which rely on institutional and engineered controls, however, this approach will limit how the brownfield can be used for commercial activities. The parking area might need to be in a specific location, as might an entrance road. Building footers and foundations might need to be placed only in certain locations, or might require unconventional construction methods.

A prudent brownfield owner will have identified the most likely redevelopment options for the site before committing to a cleanup approach. Ideally, a specific buyer or tenant will have been identified, and the redevelopment requirements and plans can be examined. In this situation, the cleanup can be shaped to meet the expectations and needs of the new owner. In the same way, redevelopment plans can often be adjusted to meet cost-effective cleanup planning. A building or parking area, for instance, can be located on the site in such a way as to be a component of

a barrier or other control. Direct discussion with an interested buyer also allows the current brownfield owner to learn the valuation the buyer places on the different use limitations associated with different cleanup strategies.

Even where a specific end-use is not known, the brownfield owner will want to consider likely end-uses before settling on a cleanup strategy. This will sometimes be an

obvious decision, as when designing the cleanup of a property currently zoned residential, or dealing with a former industrial site in a manufacturing district zoned for only such uses. Other times, however, the choices will be less clear. When the optimal redevelopment outcome is not clear, and the remediation strategy is not exclusively guided by cost considerations, the brownfield owner will need to continue to work with knowledgeable local

Questions Frequently Asked About Cleanup

How Clean is Clean — Must a Brownfield Site Be Cleaned Up to Pristine Conditions?

The extent of cleanup will vary considerably depending on the type, amount, and area of contamination, and the cleanup standards used by the specific regulatory program that governs the cleanup. In addition, a key factor in determining the level of cleanup is whether the use of the property is taken into account in setting cleanup standards. For example, if a property is slated for industrial use, the cleanup standards are likely to be less stringent than if the property were to be used for residential purposes, because the level of exposure to the contaminants will be less.

How Much Will the Cleanup Cost?

The cost of the cleanup will vary considerably depending on many factors. The level, type, amount, and extent of contamination are key determinants. For example, if the groundwater under the site is contaminated, the cost of cleanup is likely to be much higher than if just the soil is contaminated. If the contaminated materials need to be transported off site for treatment that will also affect the cost. The cost will also depend on the standards that apply to the cleanup, particularly whether the use of the property is considered in setting cleanup levels. If a brownfield property is cleaned up to commercial use standards, for example, rather than residential use standards, the cleanup will typically be less expensive.

The cost to the property owner of the cleanup will also be affected by whether there are other parties responsible for the contamination who can contribute to the costs. For

example, if a property was used as a landfill before the property owner acquired it, the property owner may be able to seek contribution for the cost of the cleanup from parties who contributed to the earlier contamination. Property owners should consult with a lawyer to determine if they have a claim against a previous owner or party responsible for contamination of their brownfield site.

How Long Will the Cleanup Take?

The length of the cleanup will vary according to the level, type, amount and extent of the contamination, as well as the cleanup standards that apply to the site. A site with extensive soil and groundwater contamination that is cleaned up to residential standards is likely to take longer to clean up than a site that has only minimal contamination and will be used for industrial purposes. Furthermore, factors such as the time of year or unusually bad weather can affect the duration of cleanup. In most cases, technical consultants will be hired to perform the cleanup. The pace of the cleanup will also be contingent in part on the consultants' schedules and levels of efficiency. In addition, the time period for review and oversight by the regulatory agency overseeing the cleanup activities will influence how long the cleanup takes to complete. Several states have instituted efforts to streamline the review process for voluntary cleanups, and have set the number of days for review of various documents, but other state agencies that have large workloads and are understaffed may take a considerable amount of time to approve cleanup plans and completions.

sources to identify the cleanup strategy most likely to be cost-effective.

It is important to remember, however, that even if a brownfield program allows the development of cleanup standards based on site-specific information, this does not ensure that the use of this option will be appropriate, or authorized, in every situation. Most programs that allow cleanups based on site use require that the cleanup be compatible with current and reasonably foreseeable future site use. This means, in short, that the owner of a site in the midst of a residential section may not be able to clean up to nonresidential standards simply by announcing that the property will now be offered for sale for business uses.

CLEANUP PROCEDURES

Cleanup procedures will vary from state to state so it is important to check the procedures under the program that governs the cleanup. Some states actively oversee each stage of the cleanup while others allow property owners and other volunteers a considerable degree of autonomy. In some states, such as Ohio and West Virginia, the state allows certified environmental professionals to oversee the cleanups. Furthermore, some states, such as Pennsylvania, have more than one set of procedures depending on the type of cleanup standards that will be used.

Several states, such as Arizona, have tried to streamline their oversight processes by establishing time limits for government actions. For example, the state may be required to act on applications or review cleanup work plans within a specific number of days.

By way of example, the following procedures provide an outline of the kind of process that a state brownfield or voluntary cleanup program may use. These sample procedures are a combination of various state program procedures and do not describe any particular program's approach:

(1) File Application and Fee: Many voluntary cleanup programs require volunteers to submit applications or provide notice of an intent to perform a voluntary cleanup. The

type and amount of information about the site and owner that is required as part of the application varies from state to state. For example, some states require that the property owner perform some site assessment work before applying to the program. In addition, most states require participants to reimburse them for voluntary cleanup oversight costs, either in the form of a flat fee or on the basis of actual costs, or a combination of both. In 1997, for example, the flat fees ranged from \$250 to \$2,000. States that seek reimbursement for costs typically charge a set hourly rate. States may also have eligibility criteria for participating in their programs. The application process allows the state to determine if the property owner and the site are eligible to participate in the voluntary cleanup or brownfield program.

Note that in some states, after notifying the state that they intend to perform a voluntary cleanup, property owners negotiate and enter into an agreement with the state for the performance of the cleanup. Cleanup agreements vary considerably but can address a range of issues such as the process for review of work plans or the specific work the property owner will perform.

(2) Site Investigation Review: Some states may require property owners to submit plans for site investigations and to report on investigations. Because the site assessment will serve as the basis for developing the cleanup work plan, the state may want to ensure that the investigation plan is likely to identify contaminants and that the investigation report is sufficiently thorough. Chapter 4 discusses considerations that property owners should take into account in conducting site assessments.

(3) Cleanup Plan Review: On the basis of the site investigation, the property owner develops a proposed cleanup remedy and work plan for the state to review. Considerations in selecting a cleanup approach are discussed earlier in this chapter. Most property owners will need to work with a technical consulting firm to develop a cleanup plan. Tips for retaining and working with consultants are discussed later in this chapter and in Chapter 4. Once the plan

has been submitted, the state may approve or require modifications to the plan.

(4) Public Notice and Comment: Many states have public participation requirements for their voluntary cleanup and brownfield programs. Although approaches vary, most states require notice to the public of the cleanup and may designate the appropriate method for providing the notice such as a mailing or an announcement in a newspaper or public library. In addition, many states give the public opportunity to comment on proposed voluntary cleanups. Some states may also require a public hearing or meeting about the cleanup so the public can ask questions and make comments. If public comments raise concerns about the proposed cleanup, the state will typically work with the property owner and interested public to resolve the concerns. This may require amendments to the work plan. Of course, the level and extent of public interest will vary considerably depending on the property. As discussed in Chapter 5, brownfield property owners should consider gauging the likely level of community interest in their property early in the cleanup and redevelopment process in an effort to address concerns, if any, prior to any notice and comment period or public meeting.

(5) Site Cleanup: After the work plan has been approved and public comments, if any, addressed, the owner can begin the cleanup of the property. Again, most property owners will opt to work with a consulting firm to implement the cleanup since few property owners will have the technical expertise and skills to perform the cleanup.

(6) State Review and Approval: After completion of the cleanup, the state reviews the cleanup documentation, such as sampling data, submitted by the property owner. If the state has concerns or questions, it typically will notify the property owner and work to resolve the problems. After the cleanup has been completed satisfactorily, the state may issue a certificate of completion or no-further-action letter. (See Chapter 8 for a discussion of the liability relief states may provide).

(7) Voluntary Withdrawal: Property owners should determine prior to applying to the program whether they can voluntarily withdraw from the program at any time, for example, if work plan modifications recommended by the state would make the cleanup too costly. States that address the issue may require, for instance, that a site not pose a greater threat to health and the environment than when the property owner entered into the voluntary program.

CLEANING UP BROWNFIELD PROPERTIES INDEPENDENT OF REGULATORY OVERSIGHT

In some cases it may be appropriate for a property owner to clean up a brownfield site independently, without regulatory oversight. Property owners should discuss the appropriateness of an independent cleanup with a technical consultant and lawyer, because in some cases it may not be legal or advisable to forego regulatory oversight. The key advantage of independent cleanups is that they are likely to take less time to complete because state approval is not required. They may also cost less as a result. In addition, the property owner may have greater ability to determine the cleanup approach.

Some brownfield cleanups present no options; they require regulatory oversight. For example, if a property is already subject to cleanup under a federal or state Superfund, RCRA Corrective Action, or Underground Storage Tank Program, the site cleanup must be performed under the procedures set out in those cleanup programs. In addition, several states require that spills of certain substances must be cleaned up under government supervision. Furthermore, some brownfield cleanups may trigger regulations on the handling, storing, and transportation of hazardous waste or other regulations such as Occupational Health and Safety Administration rules on worker safety. Failure to comply with these and other regulations could result in injury to health and environment or lead to an enforcement

action that imposes penalties on the property owner. Property owners should consult with an attorney to determine what laws and regulations may apply to the remediation of their properties.

In contrast, some brownfield cleanups may not trigger regulatory requirements or require property owners to notify government regulators. Owners of such sites may elect to clean up their brownfields independent of a state voluntary brownfield program, or other program that provides regulatory oversight. Property owners should recognize, however, the disadvantages of this approach.

The most notable disadvantage is that the property owner cannot obtain protection from liability for contamination that remains on the site after the cleanup. The government can still take enforcement actions if the site poses a threat to health and the environment. The likelihood of this occurring depends on several factors, including the extent of contamination remaining on site and the quality of the cleanup performed. Given that property owners will need to determine the level of cleanup, it may be appropriate to consider using state voluntary and brownfield program cleanup standards as a guideline, because subsequent enforcement action by the government may be less likely if the standards are met.

Property owners should also recognize that independent cleanups are unlikely to qualify for other brownfield incentives such as low-interest loans. It may also be difficult to get financing for the redevelopment from a lending institution if the cleanup is not supervised by a regulatory agency, because the lender may be concerned about future liability for the contamination remaining on the site.

CONSULTANTS AND CLEANUPS

Retaining an experienced and competent consultant or contractor is, if anything, even more significant for the cleanup phase of a project than for the assessment phase. It is during the cleanup that contaminated soil and ground water is removed and treated or taken to a disposal site, or managed in any of a

number of other ways. These acts, in themselves, can create risks of greater contamination if not carried out properly. In addition, many of the cleanup activities will be subject to direct regulatory requirements, and the failure to comply with those requirements can expose both the contractor and the property owner to potential liability.

Most of the suggestions made in Chapter 4 of this guidebook for selecting and managing an assessment consultant apply equally to the selection of a cleanup contractor. The critical factors in ensuring a positive relationship with a professional consultant — whether for an assessment project or a cleanup — are a clear description of the tasks to be carried out, a specific statement of the costs for those tasks, a mutually acceptable structure to report progress and results, and clear communications in both directions during the project.

Many environmental firms today can conduct both assessment and cleanup projects. Some firms prefer to undertake only assessment work or cleanup jobs. Most firms that carry out cleanups will use subcontractors for various specialized tasks, such as handling especially difficult materials (for example, asbestos) or for building demolition and other heavier activities.

A brownfield owner should know whether consultants proposing to handle the assessment phase are capable of also carrying out a cleanup if necessary. The owner may develop a sense of confidence in a firm during the assessment and want to simply expand the scope of activities to include the cleanup project. At a minimum, the firm responsible for the assessment may gain a special sense of the cleanup requirements and may be able to offer a better proposal for the cleanup if the owner goes through a separate competitive process for the cleanup stage.

There may also be reasons to select a firm that only does assessments for the investigative phase. More specialized firms sometimes bring a higher degree of sophistication and expertise because they focus all their efforts on assessment projects only. This is likely to be of value if the brownfield in question presents

especially difficult soil or geology problems, or if the particular contaminants present unusual questions. Assessment-only firms may be smaller, as well, and this can sometimes result in lower overhead and a correspondingly lower cost structure.

A good strategy for an owner beginning the process of searching for a consultant is to request proposals from at least some firms that only will be able to carry out the assessment phase as well as some full-service firms. This will offer a broad basis for comparison.

LIABILITY RELIEF UNDER STATE BROWNFIELD OR VOLUNTARY CLEANUP PROGRAMS

Liability relief can be a major incentive to participate in voluntary and brownfield cleanup and redevelopment programs. Most states give the same protection from liability for voluntary and brownfield cleanups, whether they are part of the same or separate programs. Each state has its own method for giving volunteers protection from future liability, so a volunteer must contact the state agency or a lawyer with experience with the particular state's program. The following are some of the commonly used methods:

Covenant not to sue: A covenant not to sue is an enforceable agreement by the state agency not to sue the volunteer for further cleanup. Usually the covenant protects the volunteer from state claims related to contamination addressed by the cleanup. Several states, including Georgia, Maine, Pennsylvania, Rhode Island, and South Carolina, also protect volunteers from suits by other people who paid for cleanup at the site and are seeking contribution for the costs they incurred. A few states provide a covenant that "runs with the land" and, therefore, applies to future owners of the property.

No-further-action letter: In a no-further-action letter the state assures the volunteer that, based on currently known facts, the state will not require the volunteer to do further cleanup. Many states specifically provide in their no-further-action letters that the volunteer is relieved from liability for further cleanup. Some states, however, do not provide liability

relief in their no-further-action letters, although they may do so in a separate document, such as a settlement agreement that includes a covenant not to sue.

Certificates of completion or cleanup approval letters: Some states use certificates of completion and cleanup approval letters that relieve the volunteer of liability for future cleanup. But, like some states' no-further-action letters, the certificates and approval letters from some states do not include a liability release. These states simply certify that the volunteer has completed the cleanup and that, based on existing information, the state plans to take no further action at the site. These certificates or approvals are intended to assure lenders and prospective purchasers that additional cleanup will not be required. Minnesota has several levels of certificates of completion, increasing the degree of protection from liability depending on the level of state review requested by the volunteer.

Some states will only provide liability protection to parties that are not responsible for the contamination. For example, Delaware, Maryland, New Mexico, Rhode Island, and Utah will not protect responsible parties from liability.

Most states that provide liability releases reserve the right to require further cleanup of a site under specific conditions, such as:

- if additional contamination is found that was unknown at the time of the cleanup;
- if a containment system fails and people or the environment may be exposed to contamination that was left in place;

- if needed institutional controls fail or are not implemented;
- if approval of the cleanup was obtained through fraud;
- if the land use changes to a use that might be incompatible with the level of remaining contamination or the containment system; or
- in some states, if new technology becomes available.

These are called *reopeners* because they are circumstances when the government will reopen the file on the site to determine if further cleanup is needed. Of course, if new contamination occurs after the cleanup is finished, the state may require further cleanup.

LIABILITY RELIEF UNDER FEDERAL PROGRAMS

Even if a state environmental agency reviews and approves the cleanup plan and certifies that cleanup was completed, the possibility of federal liability for further cleanup will remain. Some states and EPA have reached agreements that EPA will not require further cleanup at sites cleaned up under state

supervision, unless there is an imminent and substantial danger to public health or the environment. These states include: Colorado, Delaware, Illinois, Indiana, Maryland, Michigan, Minnesota, Montana, Oklahoma, Rhode Island, Texas, and Wisconsin. EPA is working with additional states and additional agreements are expected in the future. EPA rarely requires further cleanup after a state has approved a cleanup, but the possibility that it might can cause worries for some owners, prospective buyers, and developers.

The federal government is unwilling to give across-the-board liability relief to every person who cleans a site up under a state voluntary, brownfield, or regulatory program. When EPA does not have an agreement with a state, it has been willing to provide comfort or status letters that give some assurance that EPA will not require further cleanup of a site that is remediated under a state program. EPA also tries to reduce these concerns through Prospective Purchaser Agreements, in which it spells out the limited situations where a prospective buyer would be liable. But these agreements have so far been available only to buyers of sites cleaned up under the federal Superfund program, not to buyers of sites cleaned up under state programs.

Some owners may want to sell their properties, rather than redevelop them or reuse them for their own businesses. As discussed in Chapter 3, these owners have several basic options:

- sell the property “as is”;
- sell the property after an assessment has been performed; or
- sell the property after assessment and cleanup.

As Chapter 3 explains, there are also variations on these basic options. The sale of any property involves negotiation over and resolution of numerous issues. This chapter does not address all of these issues but instead focuses on the issues that are particularly challenging in brownfield transactions — ways that owners and prospective buyers can allocate responsibilities for future costs related to present contamination.

Brownfield property transactions can be complicated and involve technical and legal issues that a lay person may not be qualified to address. This guidebook introduces property owners to common issues that are likely to arise in the course of negotiating agreements with prospective buyers, but it is not intended as a comprehensive resource and should not serve as a substitute for legal counsel.

The owner and potential buyer should start by identifying potential costs associated with the contamination on the property that they want to address in the sale. These may include liability for:

- cleanup;
- damages caused to natural resources such as wetlands and streams;

- personal injury or property damage caused to third parties; and
- violations of environmental laws arising out of the use of the property.

The following mechanisms are commonly used to allocate responsibility for these kinds of liabilities. These mechanisms only serve to allocate responsibility among property owners and prospective buyers; they do not protect against direct liability to the government for remediation costs or enforcement actions.

REPRESENTATIONS AND WARRANTIES

In the course of the sales transaction, the property owner may be expected to provide the prospective buyer with representations and warranties. In the context of a brownfield transaction, representations and warranties by the property owner are statements and assurances to the prospective buyer about the condition of the property. Representations and warranties in a brownfield transaction often focus on current and past operations and conditions on the property that could lead to environmental liabilities. Representations and warranties vary considerably depending on the particular transaction but may address, for example:

- the enforcement history of the property;
- the presence or absence of hazardous substances or underground storage tanks;
- liens and land use restrictions on the property due to environmental contamination;
- claims or threatened claims of personal injury and property damage; and
- the need for environmental remediation.

In addition, the seller may request a representation that the property owner has provided copies of all available environmental assessments and reports to the prospective buyer. The property owner and prospective buyer may decide to use a schedule of exceptions to list any exclusions or exceptions from the representations that are made by the property owner.

If the buyer later determines that a representation was inaccurate, the buyer may have a claim for breach of representation. If the breach is discovered prior to closing of sale, the buyer may be allowed to terminate the agreement. A breach of representations and warranties also may be used as a trigger for indemnifications, as discussed below. Thus, the property owner must take care to fulfill its obligations to ensure that the representations and warranties are truthful and accurate.

During the course of negotiating the representations and warranties, property owners and prospective buyers are likely to want to limit their respective risks and liabilities to the greatest extent possible. For example, in some cases, property owners and prospective buyers may negotiate over whether the representations and warranties should be limited to only those conditions that are known to the property owner. Property owners should consult with legal counsel regarding: 1) the specific language in the agreement limiting the representations and warranties to the best knowledge of the property owner; and 2) what is required of the property owner in making a due inquiry about the matters addressed in the representations and warranties. Additional issues property owners and prospective buyers may want to negotiate include whether the representations and warranties cover business operations prior to the property owner's use of the property.

Property owners and prospective buyers may also negotiate over whether to use an "as is" clause as a substitute for representations and warranties. If a buyer acquires a brownfield property "as is" then the buyer may have limited ability to obtain damages from the property owner for conditions on the property

at the time of the sale. Property owners should consult with legal counsel about "as is" clauses, particularly because such clauses do not always provide full protection from liability for environmental contamination. For example, an "as is" clause may not protect against liability under Superfund.

Many courts have interpreted representations and warranties. Any efforts to draft and negotiate effective representations and warranties should take into account these prior judicial interpretations.

Finally, the sales agreement should indicate how long the representations and warranties survive after the closing of the transaction. The buyer may want to extend the representations and warranties for as long as possible, while the property owner may prefer to limit the time period that the buyer can make claims for breaches of the representations and warranties.

INDEMNIFICATIONS

Indemnifications are another way that property owners and prospective buyers can attempt to allocate the risks and liabilities associated with environmental contamination on brownfield properties. In brownfield transactions, the indemnifications will often focus on the costs of the cleanup of the property. An indemnification is an agreement that provides for one party to bear the costs, either directly or by reimbursement, for damages or losses incurred by a second party. An example of an indemnification in a brownfield agreement would be for the seller to indemnify the prospective buyer against all environmental liabilities incurred as a result of the property owner's operations before the closing of the transaction. Similarly, the prospective buyer could indemnify the property owner for all environmental liabilities incurred as a result of the buyer's operations on the property after the closing of the deal.

It is important to note that indemnifications do not serve to protect a party from direct liability to the government for remediation costs or environmental enforcement

actions. However, if the government forces the indemnified party to perform or pay for a cleanup of the property, the indemnification may, for example, allow that party to turn to the indemnifier for reimbursements.

In addition to stand-alone indemnifications, indemnifications can also be linked to representations and warranties. Specifically, the agreement can provide that the property owner must indemnify the buyer for expenses arising out of the breach of the representations and warranties. An indemnification provision of this type provides another type of claim, in addition to a claim for breach of representation, that the buyer can use in the event that a representation is breached.

As with all provisions in a sales agreement, the exact wording of an indemnification is critical not only for purposes of clarifying the intent of the prospective buyer and property owner but also in case a court is asked to resolve a dispute over an indemnification claim. For example, it is not always easy to determine whether environmental contamination came from operations on the property prior to or after the closing, particularly if the buyer uses the same hazardous substances in its manufacturing operations as a previous owner of the property. Buyers and sellers can use a variety of approaches to try to clarify the scope of indemnification coverage regarding this question, including the use of an assessment report to establish environmental conditions on the site at the time of sale. These approaches have strengths and weaknesses. Legal counsel can explain them and can also help the property owner draft indemnifications that are likely to be upheld and given their intended meaning.

Many issues arise when using an indemnification. These issues can not be fully addressed in this guidebook but may include:

- the specific types of costs that will be covered;
- caps on the amount of the indemnification;
- deductibles whereby only amounts above the deductible can be claimed;

- time limits for the indemnification;
- mediation of disputes over indemnification provisions; and
- notice requirements.

In addition, the parties can negotiate cost sharing provisions that require both the property owner and prospective buyer to pay for cleanup costs, thereby giving both parties an incentive to perform cost-effective work. The appropriate resolution of these issues in any specific transaction can be a complicated endeavor and should be carefully thought through.

A final but important note on indemnifications — property owners and prospective buyers should remember that an indemnification is only valuable if the party obligated to indemnify has or is likely to have the financial resources to make good on the indemnification. Several approaches can increase the likelihood that the indemnification will be backed up. For example, the parties can set up an escrow account to pay for indemnified costs.

ASSESSMENT AND REMEDIAL WORK AS A CONDITION OF SALE

A property owner may agree to perform certain assessment or cleanup work as a condition of the sale. An agreement can provide for a variety of approaches to pre-closing cleanup work, depending on what the property owner is willing to do to secure the sale. For example, a property owner could agree to obtain approval from the state voluntary or brown-field program of a work plan for the cleanup of the property. A property owner could go further and agree to perform the cleanup and obtain a certificate of completion or no-further-action letter, as described in Chapter 8.

Some of the general considerations for a property owner who is considering performing assessment or cleanup work prior to selling a brownfield site are discussed in Chapter 3. Additional considerations may apply if the assessment and cleanup work are performed as a condition of sale. For example, the property owner may want assurances that the prospective buyer will, in fact, complete the

transaction after the cleanup is completed by the property owner. Legal counsel can recommend specific approaches to setting up an escrow account or similar mechanism.

COVENANTS

Either a property owner or prospective buyer may covenant or agree to perform certain activities or refrain from performing certain activities as part of the sales agreement. Unlike a pre-closing condition, a covenant can be performed after the sale of the property. For example, if the property owner does not plan to clean up the site fully prior to the sale, the owner could agree to remove drums from former operations on the site, in an effort to reduce the costs of the cleanup to the prospective buyer. The prospective buyer could agree or covenant to perform the full cleanup under a voluntary or brownfield cleanup program after the sale of the property, in an effort to help assure the property owner that cleanup will be performed well and will not result in liability for the property owner at a later date. Covenants can cover a wide range of environmental issues and problems. Like other mechanisms used to address risks and liabilities associated with contamination on brownfield sites, covenants must be negotiated on a case-by-case basis and drafted carefully to ensure that they are enforceable and achieve the goals of the parties.

INSURANCE

Another way that property owners and prospective buyers can allocate risks is through the use of insurance products. (Insurance products are discussed in Chapter 3.) For purposes of selling a brownfield property, a property owner and prospective purchaser could explore the possibility of using insurance to reduce or address unexpected cleanup costs. For example, insurance products may be available that would cap the cost of a proposed cleanup or that would insure against unknown cleanup costs or liabilities.

PROPERTY TRANSFER LAWS

In addition to the disclosures and cleanup obligations that the property owner and prospective buyer may negotiate as part of a sales agreement, some state laws impose duties on owners of contaminated property when they transfer their properties. Some states (approximately 20) require owners of contaminated properties to disclose the presence of hazardous substances to purchasers. Some states (approximately 20) require property owners to record notices on the deeds of specific kinds of contaminated properties. A few states, such as New Jersey, Connecticut, and Hawaii, require a cleanup or commitment to clean up when particular contaminated properties are transferred. The requirements and applicability of the laws vary from state to state. Property owners should take care to comply with any state property transfer laws, as well as any additional cleanup, investigation or disclosure requirements negotiated in the sales agreement.

Brownfields Glossary

“As is” Sale: The transfer of a property to a buyer with no promises, assurances, or representations by the property owner about the conditions of the property.

Boilerplate: Standard language that businesses routinely include in contracts. The other party to the agreement can sometimes negotiate to change or remove such provisions.

Brownfield: An industrial or commercial property that remains abandoned or underutilized in part because of environmental contamination or the fear of such contamination. Government definitions of the term may vary depending on the program.

Community Development Block Grant (CDBG): A lump-sum grant to a state or local government from the federal Department of Housing and Urban Development that may be used for development activities including, in some cases, brownfield revitalization.

Community Development Corporations (CDCs): Local non-profit organizations created to promote urban redevelopment.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund): A federal statute that governs the investigation and cleanup of sites contaminated with hazardous substances. The law establishes a trust fund that can be used by the government to clean up sites on the National Priorities List.

Certificate of Completion: A written verification from a state voluntary cleanup or brownfield program that a site has been cleaned up in a manner satisfactory to the state. In some states, a certificate provides liability protection but in most states liability relief must be obtained through another mechanism such as a covenant not to sue.

Cleanup Approval Letter: A written verification from a state voluntary cleanup or brownfield program that a site has been cleaned up in a manner satisfactory to the state.

Contribution Action: A legal proceeding brought by a party that has incurred cleanup costs against other liable parties for their share of the costs incurred.

Corrective Action: The cleanup process used to address contamination at treatment, storage, and disposal facilities regulated under the Resource Conservation and Recovery Act.

Covenant Not to Sue: A written promise by a state government that it will not take legal action or require additional cleanup by a party that satisfactorily cleans up a property under a state brownfield or voluntary cleanup program.

Deed Restriction: A limitation on the use of a property that is recorded on the deed to the property to provide notice of the restriction.

Easement: A right to use or limit the use of someone else’s property.

Engineering Controls: Physical mechanisms for preventing exposure to contamination. Examples include: fences, pavement, and clay caps placed on contaminated soil.

Environmental Assessment: A site evaluation or investigation conducted for purposes of determining the extent, if any, of contamination on a property. An assessment can be informal or formal, and can consist of several stages. For example, a Phase I assessment, or basic study of possible contamination at a site, is limited to collecting information about past and present site use and inspecting present conditions. A Phase II assessment can follow up a Phase I assessment with sampling and analysis of suspected contaminated areas of a site. A Phase III assessment can either follow up a Phase II assessment by gathering information on the exact extent of the contamination or by preparing plans and alternatives for site cleanup.

Greenfield: A property that has not been previously developed.

Indemnification: An agreement that provides for one party to bear the costs, either directly or by reimbursement, for damages or losses incurred by a second party.

Infrastructure: The roads, utility lines, and other public amenities that support property use.

Institutional Controls: Legal and administrative mechanisms designed to prevent exposure to contamination. Examples include: deed restrictions, easements, and zoning restrictions.

Liability Relief or Liability Release: Protection from liability for contamination provided by a state government as an incentive for brownfield cleanups. Releases vary in scope and form, and can include covenants not to sue and some types of no-further-action letters and certificates of completion.

Natural Resource Damages: Monetary payment for injuries caused to natural resources such as streams, wildlife, and wetlands by contamination from a site. The government can in some cases compel the party responsible for the injuries to pay damages.

No-Further-Action Letter: A written statement by a state government that it has no present intention to take legal action or require additional cleanup by a party that satisfactorily cleans up a property under a state brownfield or voluntary cleanup program.

Nonresidential Use Standard: A cleanup standard, usually expressed as a numerical ratio of parts of a specific contaminant to parts of the medium of concern (e.g., 5 parts of lead per million parts of soil) that describes the maximum concentration of the contaminant in the medium that will not present an unacceptable risk to the health of humans engaging in any activity other than residential or those other activities considered to be substantially similar to residential. The non-residential use standard is usually a less strict cleanup standard than the residential use standard, and a site that meets the non-residential standard is limited in its uses to nonresidential activities.

National Priorities List (NPL): The Environmental Protection Agency's list of the most serious uncontrolled or abandoned hazardous waste sites.

Prospective Purchaser Agreement: An agreement between EPA and the prospective buyer of a Superfund site that protects the prospective buyer from certain liabilities for contamination that is already on the site, usually in exchange for a payment of money and other commitments by the prospective purchaser.

The Resource Conservation and Recovery Act (RCRA): A federal statute that regulates the generation, transportation, storage, treatment and disposal of hazardous waste. RCRA programs include the Corrective Action and Underground Storage Tank Programs.

Residential Use Standard: A cleanup standard, usually expressed as a numerical ratio of parts of a specific contaminant to parts of the medium of concern (e.g., 5 parts of lead per million parts of soil) that describes the maximum concentration of the contaminant in the medium that will not present an unacceptable risk to the health of humans residing on the site, or engaging in activities on the site that are considered to be substantially similar to residing on the site. The residential use standard is usually the strictest cleanup standard, and a site that meets this standard can usually be used for any purpose.

Reopener Provisions: Express exceptions to liability releases or agreements that reserve the government's right to require further cleanup under certain conditions. These conditions typically include fraud by parties responsible for the cleanup, discovery of previously unknown contamination, and discovery that contamination remaining on the site is significantly more toxic than originally believed.

Restrictive Covenant: A provision in a deed that limits the use of the property. For example, a restrictive covenant could prohibit commercial uses.

Representations and Warranties: Statements of fact (representations) and promises (warranties) that a seller makes to a buyer in a real estate transaction.

Risk Assessment: A study or evaluation that identifies and in many cases quantifies the potential harm posed to health and the environment by contamination on a property.

Running With the Land: An obligation or right that attaches to a property and passes to the new owner if the land is sold.

Tax Increment Financing (TIF): A mechanism that allows local governments to use future projected taxes to finance current infrastructure investments.

Toxic Tort Action: A legal proceeding brought to seek damages for personal injury or property damage incurred as a result of exposure to a hazardous substance.

Uncertainty Premium: The amount that the buyer of a brownfield property subtracts or discounts from the purchase price to reflect the risk of unexpected environmental assessment and cleanup costs.

Variance: An individual exception to a land-use restriction or other legal standard granted because of special circumstances.

Does Your Brownfield Present a Business Opportunity?

Appendix A

Brownfield owners face both opportunities and risks. An environmental assessment of your site could show it is basically clean or could turn up costly hidden problems. Cleanup could create a valuable property, or it could leave a clean but still unused site in a depressed neighborhood. The owner must study the potential benefits and risks to decide whether redevelopment could work. While there is no set formula for determining whether it makes business sense to clean up and redevelop a brownfield property, the following questions are ones owners typically consider. The issues raised by these questions are discussed throughout the guidebook.

First consider the costs and benefits of leaving the property in its current condition:

- **What is the value of the property as it stands now?**
- **What is the cost of carrying the property in its current condition?** For example, what are the costs of insurance and state and local property taxes?
- **Could the costs of cleanup increase if cleanup is put off?** For example, will contamination spread or expose others to risk, thereby creating additional liability?
- **Has any government agency expressed concern about the property?** If the property is not cleaned up voluntarily, is it likely that a local, state, or federal environmental agency will require cleanup? (Governments generally require cleanup only when a

property poses serious risks to people or the environment.)

- **Would the surrounding community prefer maintaining the status quo?** For example, has the community expressed concerns about introducing commercial or industrial activities in a neighborhood that is becoming more residential?

Next, consider the cost and benefits of cleanup and redevelopment:

- **Would the property's value be enhanced once it is cleaned up?**
- **What is the likely cost of cleaning up the property and are those funds currently available?** Are there government programs that would support or subsidize cleanup?
- **Is it possible to estimate the benefits of resolving environmental risks through cleanup?** Could cleanup lead the government to grant releases from environmental liabilities?
- **Are there intangible benefits of cleanup?** Would cleanup increase community goodwill or resolve lenders' or investors' doubts about potential liabilities?
- **Is there a market for the property after cleanup?** Could the owner use it for his own business? Is there a market for new housing, retail, or industrial sites in the area? Would cleanup and redevelopment increase the property value?

- **Will cleanup activity increase community concern about the property?** Will it raise questions in neighbors' minds about whether the contamination on the property has injured them?
- **Do the benefits of cleanup appear to cover the costs?** Are the figures likely to change if cleanup is postponed?
- **Does the owner have the capital, the skill, and the desire to undertake cleanup and redevelopment?** If not,

is it possible to find others who might help? Is it possible to sell the property before it is cleaned up? After it is cleaned up but before it is redeveloped?

Some of these questions will be hard to answer. Some will require the help of experts, such as attorneys, engineers, or government officials. Even then, some will be unanswerable. As in any business venture, a brownfield project will have uncertainties and risks. This guidebook may help owners understand many of them.

Federal and State Cleanup Programs

1. The Federal Superfund Program

The federal Superfund law covers the cleanup of sites contaminated with hazardous substances or sites facing a substantial threat of contamination with hazardous substances. The basic scheme of the federal Superfund statute is simple. The law authorizes EPA to clean up sites contaminated with hazardous substances and to prevent contamination by hazardous substances. The federal government also may require the parties responsible for the contamination to clean up the site. Or, the government may require the parties responsible for the contamination to pay all the government's costs of cleaning up the site. Superfund takes its name from this last mechanism, since the law creates a fund that the government may use to clean up sites, which is then replenished by payments from parties responsible for the contamination.

The Superfund law may be used to clean up almost any site contaminated with hazardous substances. But it is used at far fewer sites than it might potentially reach. This is because federal money may be used only to respond to emergencies and to pay for cleanups of the worst sites, which are listed on the National Priorities List (NPL). In practice the federal government puts most of its time, effort and money into cleaning up the 1200 or so sites listed on the NPL.

Cleanup Standards. The statute includes general rules for deciding what cleanup standards to apply to a particular site. These rules direct EPA to protect human health and

the environment and to prefer permanent cleanups, including permanent treatment or removal of hazardous substances. The statute also requires a cleanup to meet standards from other federal or state statutes that apply to the site or that would be "relevant and appropriate" to the site.

The statute also provides other rules to guide the choice of a cleanup plan. In deciding on a cleanup plan, EPA must consider a number of factors prescribed in the law. EPA has issued regulations, part of the National Contingency Plan (NCP), that further explain how it will consider these factors in deciding how to clean up a specific site.

If the cleanup will leave contamination at the site at levels above those that would allow unrestricted use of the site, then EPA must review the site every five years to assure that it continues to protect human health and the environment. In such cases EPA normally will use barriers or some other engineering method of containing the contamination and institutional controls to control exposure to the contamination.

Liability. Congress made several categories of parties liable for the costs of cleaning up sites contaminated by hazardous substances:

- the current owner or operator of a contaminated site;
- anyone who owned or operated a site at the time of disposal of hazardous substances at the site;
- anyone who arranged for disposal or treatment, or who arranged for transportation for disposal or treatment,

of hazardous substances owned by that person where those substances ended up at a contaminated site; and

- anyone who transported hazardous substances to a site selected by that party for the purpose of disposal or treatment.

Innocent landowners may be able to avoid liability if they can prove that they acquired the property after the contamination occurred and they did not know, and had no reason to know, that contamination existed. In practice, it is often difficult to establish this defense.

EPA has recently issued policies attempting to reduce the liability fears of residential property owners, property owners whose land is affected by contamination originating off-site, and prospective purchasers of contaminated property. These policies are all part of a general EPA initiative to encourage brownfield redevelopment.

There are several critical components to the liability scheme that Superfund creates. First, liability is retroactive, meaning that a person may be liable even if the activities that make them liable occurred before the statute was enacted in 1980. Second, liability under Superfund is strict. This means that a party can be held liable solely on the basis of a release of a hazardous substance, without any proof of fault. Finally, Superfund imposes joint and several liability. This legal doctrine provides that each person or company who contributed to the contamination at a site could be made to pay for the entire cleanup.

In practice joint and several liability is not as harsh as it appears in theory. The law allows a person who has paid for a cleanup to require others who are liable to contribute to the total paid. Joint and several liability simply was intended to leave it to those who were responsible for the contamination, rather than to the government, to pursue other responsible parties and to compel contribution from them. The federal government spends a reasonable amount of time and resources on determining the potentially responsible parties and gathering evidence about how they contributed to

the conditions at a site. It usually makes the information available to them and encourages them to negotiate a fair division of the costs among themselves. The potentially responsible parties are free to use any method or set of principles in dividing the costs. Factors that are often considered include the volume of material contributed by each party and the toxicity of the material.

2. State Regulatory Cleanup Programs

In 1976, New Jersey created the nation's first program to clean up contaminated land, and now almost every state has a regulatory or state superfund program that requires those who are responsible for contamination to clean it up and provides money for the state to clean up sites.

State cleanup programs are responsible for far more contaminated sites than EPA is responsible for under the Superfund program. Approximately 1,200 sites are on the National Priorities List (giving EPA primary responsibility for cleanup), but tens of thousands of contaminated sites are not on the NPL. At these sites, the federal government is often not involved at all, and the states oversee, enforce or pay for most of the cleanups.

Cleanup standards. Determining the appropriate level of cleanup for contaminated sites involves technical, administrative, and economic issues that are evaluated on a site-by-site basis. States vary considerably in the extensiveness and formality of procedures that they use to set cleanup standards. States with the most active cleanup programs have adopted procedures for determining cleanup levels that allow the state agency to consider a variety of factors. These may include:

- health-based risk assessment;
- cost-effectiveness;
- future land use;
- federal guidelines and standards (from Superfund or other programs);
- background levels of contaminants;
- drinking water standards; and
- water quality standards.

In recent years, the future use of a site has become a more important factor for many states in deciding how much to clean up a site. This may involve some guesswork because the future use of the site may not be certain, but the state agency will look at the current land use, zoning requirements, and proposed uses for a site. If a site will be used for an industrial or commercial facility — where children will not be exposed to contaminated soils, or groundwater will not be used for drinking water — the cleanup standards may be different than if it will be used for residential activities. For example, the state might allow contaminated groundwater or soils to be left in place because the planned land use of the site will reduce the risk that people will be exposed to that contamination. Most states also use institutional controls to ensure that property owners maintain the specified land use in the future or that if the use changes public health and the environment will continue to be protected from the contamination.

Liability. State cleanup laws frequently allow the state to require persons responsible for contaminated sites to clean up the sites, but the specific liability rules vary from state to state. Most state statutes follow the federal Superfund law by making a wide spectrum of actors, including owners, operators, generators, and transporters, responsible parties. Even those states whose laws are not similar to the federal Superfund law may be able to hold liable operators, generators or transporters that have put a hazardous substance where it has entered groundwater. This is possible because most states also have a general provision prohibiting pollution of “waters of the state,” which may be interpreted to impose strict liability for actions that cause pollutants to enter surface water or groundwater. It is, therefore, important to determine how the state where a site is located applies its laws.

Another important aspect of liability is whether the law applies retroactively. Forty-one states make responsible parties liable retroactively. Only California, Colorado, Idaho, Montana, Nebraska, Utah, West Virginia, and Wyoming do not impose retroactive liability.

Most states impose strict liability on persons responsible for releases of hazardous substances. Strict liability means that the state does not need to prove that the responsible party committed a negligent, reckless, or intentionally wrongful act. Rather, it must show simply that the party contributed to the contamination, without proof of fault. Other liability standards require the state to satisfy a higher burden of proof — such as proof of negligence or willful intent by a responsible party. Forty states have strict liability standards. The remaining states either do not specify liability standards or require proof of fault.

Many contaminated sites have more than one responsible party, including site owners and operators, the generators of the hazardous substances, the transporters of the hazardous substances, and people who arranged and disposed of hazardous substances. If state law does not specify how to allocate liability when more than one person is liable, then joint and several liability is the traditional method of assigning costs. It is used in the federal Superfund program and by 36 states in their regulatory cleanup programs. The joint and several liability standard means that each company that contributed in any way to the contamination is held responsible for the entire liability unless it can show that its contribution to the harm was distinct and divisible. Joint and several liability enables a government to sue one or more of the responsible parties for the full cost of the cleanup, and leave it to them either to prove that their share is divisible or to pay the government the full amount and then seek to recover contributory shares from other responsible parties. Joint and several liability rarely results in a single party paying all of the costs. Instead, it usually causes the responsible parties to negotiate their shares of the costs among themselves.

In contrast, proportional liability requires the government to prove how much of the total cost each party was responsible for causing (which may be determined in a variety of ways). A few state laws use proportional liability, and some states use a hybrid approach. Of the 36 states that use joint and several

liability, 11 of them also specifically allow responsible parties an opportunity to prove their appropriate share, or enter into an allocation process. In most of these states liability is first presumed to be joint and several, but responsible parties are allowed to prove their share. Five states specify proportional liability as the only standard. Nine states do not specify how to divide costs when more than one person is liable. Some of these have no cleanup program comparable to Superfund, while others simply are silent on the allocation standard. States that have no allocation standard may still use joint and several liability as a common law rule.

3. Leaking Underground Storage Tank Cleanup Programs

In 1984 and 1986, Congress passed laws requiring owners and operators of underground storage tanks (USTs) to meet standards designed to prevent leaks and to detect, report, and clean up leaks that might occur. The program is a part of the Resource Conservation and Recovery Act (RCRA). It applies to tanks that store certain hazardous substances and petroleum or petroleum-based substances, such as motor fuels, jet fuels, fuel oils, lubricants, petroleum solvents and used oil. EPA estimates that there are 2 million underground storage tanks, with 95 percent of them storing gasoline or other petroleum products and the remainder containing hazardous chemicals. The UST program applies to the vast majority of underground tanks, but there are some exceptions, including:

- tanks containing hazardous wastes (as defined and regulated under the hazardous waste program of RCRA (see below);
- farm or residential tanks with a capacity of 1,100 gallons or less;
- tanks storing heating oil for consumption at the site where stored;
- surface impoundments;
- flow-through process tanks;

- liquid traps directly related to oil or gas production and gathering operations; and
- tanks that are above the floor in an underground area such as a basement or mine.

The large number of USTs led Congress and EPA to design the federal program so that states would administer it. The federal law sets minimum standards for —

- design, installation, operation, upgrading, leak detection, and closure of USTs;
- reporting and cleanup of leaks from USTs; and
- financial responsibility to assure that costs of cleanup and liability to third parties will be covered.

States are allowed to administer programs that are approved by EPA as being “no less stringent” than the federal program. In practice UST programs are primarily implemented by states. Many states have closely followed the federal rules in creating their programs, but a number of states have adopted more stringent provisions, making it essential that owners and operators review their state’s rules.

Liability. Owners and operators of USTs are jointly and severally liable for meeting the leak prevention, detection and cleanup requirements of the statute. Notification requirements apply only to owners. Lenders who hold a security interest in a tank are not owners so long as they do not manage the UST, and do not otherwise produce, refine or market petroleum. An operator is any person in control of, or having responsibility for, the daily operation of an UST. Only current operators of tanks are covered. Typical owners and operators of USTs include, service station operators, automobile dealerships, bus and taxi companies, local governments (police and fire departments and school bus yards), petroleum bulk plant operators, delivery services, shopping centers, and factories.

Cleanup (Corrective Action). The UST program was designed to reduce the likelihood of undetected leaks and of groundwater becoming

contaminated from such leaks, by requiring tanks to have a method of detecting leaks. Therefore, if any leak detection method or other condition, such as finding a chemical stored in the tank in the area surrounding a tank, indicates that a tank may be leaking, the owner or operator must report the suspected leak within 24 hours and, within seven days, test the tank and associated lines to determine if a leak exists. A tank that fails the test must be repaired, replaced, or upgraded and the owner or operator must begin corrective action (cleanup). If the reason for suspecting a leak was that a chemical stored in the tank was found in the surrounding area, the owner or operator must check the site for contamination. Cleanup is required if this check reveals contamination.

Cleanup under the UST program is site-specific. The federal rules outline a process for owners and operators to respond to a confirmed leak of petroleum or a hazardous substance from an UST. The process emphasizes early involvement of the state agency, rapid response, and site-specific cleanup standards. Within 24 hours of confirming that there has been a leak owners and operators must report the leak to the state, take immediate action to prevent further leaks, and identify and mitigate fire, explosion and vapor risks. Spills of fewer than 25 gallons of petroleum, or less than specified quantities of hazardous substances, do not need to be reported if they are cleaned up within 24 hours and do not cause a sheen on a lake or stream. Owners and operators must also take first steps to clean up the leak and report those steps to the state within 20 days of the leak. They must also investigate the area around the UST to determine the size and nature of the leak and report the findings of the investigation within 45 days. Further investigation is required if the initial findings reveal —

- free product;
- that groundwater wells have been affected;
- that contaminated soils may be in contact with groundwater; or
- more extensive investigation is needed.

The federal UST regulations do not set cleanup standards, leaving that decision to the state agency to make on a site-specific basis. States vary in the standards they apply, so owners and operators need to review their state UST program before beginning cleanup. The owner or operator must prepare and submit to the state a cleanup plan when requested by the state. Cleanup may begin before the plan is submitted or approved, but the owner or operator must notify the state before beginning cleanup, comply with any conditions imposed by the state, and incorporate those cleanup actions into the plan when it is submitted for approval. At a minimum the plan should include a description of the physical and chemical characteristics of the substance that leaked, the hydrogeologic characteristics of the UST, uses of nearby surface water and groundwater and the potential effect of contamination on these uses, and an exposure assessment.

Paying for cleanup. Federal regulations require all owners and operators of petroleum-containing USTs to show that they can pay the costs of cleanup and of damages to third parties resulting from a leak. Most states have created UST funds to assist owners and operators in meeting these financial responsibility requirements and to help pay the costs of cleaning up leaks from USTs. Typically, an owner or operator may apply to the state fund for reimbursement of cleanup costs and damages paid to third parties above a deductible amount.

4. The Resource Conservation and Recovery Act Corrective Action Program

The federal government operates a second major cleanup program under RCRA. As with the UST program, and unlike the Superfund program, EPA may authorize states to administer the RCRA cleanup program instead of the federal government. RCRA cleanups, called corrective action, are limited to facilities that have a permit for the treatment, storage, or disposal of hazardous waste under RCRA or an

equivalent state program. Despite the specialized nature of the RCRA cleanup program, it covers more sites than the federal Superfund program- approximately 3,700 sites, compared to about 1200 sites on the NPL. The cleanup program is one aspect of a detailed program for regulating the generation, transportation, storage, treatment and disposal of hazardous wastes. These regulations are designed to avoid the creation of conditions that could lead to a RCRA facility becoming a brownfield. As a matter of practice EPA has separated the RCRA and Superfund cleanup programs, but RCRA sites could be covered by Superfund because hazardous wastes covered by RCRA also are included within the definition of hazardous substances under the Superfund program.

A state may administer the regulatory program for hazardous wastes instead of the federal government if the state submits a program that meets minimum standards established in the statute. In practice, many states simply copy the federal hazardous waste regulations, assuring that their programs will qualify. Thus, EPA has authorized most states to administer their own programs for regulating hazardous wastes.

Among the most important aspects of RCRA is its regulation of treatment, storage, and disposal facilities. Operators of facilities that treat, store, or dispose of hazardous wastes must obtain a permit. To obtain and keep a permit, the facility must meet design, operation, performance, corrective action (cleanup) and financial responsibility standards established by EPA.

The owner or operator of a treatment, storage or disposal facility must clean up releases of hazardous waste or constituents of hazardous waste from the facility. The goal of cleanup under this law is to eliminate, as much as practical, threats to human health and the environment and to clean up contaminated water and soil to a level consistent with current and expected uses of the site. Cleanup may be required for parts of a hazardous waste

facility that managed nonhazardous solid waste, called solid waste management units, even if the waste was placed in the unit before the RCRA rules went into effect. The owner or operator must also clean up beyond the boundary of the facility where that is necessary to protect human health and environment, unless the owner or operator can show that the necessary permission to clean up was not granted, despite best efforts to obtain permission from the property owner. One of the indications that a release may have occurred is if groundwater monitoring wells, required as part of the standards for operating a facility, show that the level of a suspect chemical exceeds background levels. Cleanup may include pumping of leachate from an impoundment or landfill, or, if the levels exceed drinking water standards, pumping and treating the groundwater.

5. State Cleanup Programs for Dry Cleaners

In the past few years some states have adopted special programs for cleaning up one of the most ubiquitous environmental contamination problems. Although perchloroethylene, the solvent used in dry cleaning, evaporates quickly and is therefore primarily thought of as a contributor to smog, it has also contaminated the soils near dry cleaners. As many as twenty states have created special funds to pay at least part of the cost of cleaning up these sites. Florida pioneered this program at the instigation of the dry cleaning industry. A typical state program includes a state-managed fund, paid for by fees collected from current dry cleaners, which is used to partially pay for cleanups. In Minnesota, for example, dry cleaners pay \$500 to \$1500 annually plus a fee of about 70 percent of the cost of the perchloroethylene they use. In Minnesota, dry cleaners are responsible for the first \$10,000 of the cost of cleaning up their facility, with the state fund paying for any additional costs.

Brownfield and Voluntary Cleanup Program Incentives

Appendix C

EPA REGION	STATE	VOLUNTARY PROGRAM INCENTIVES	BROWNFIELD INCENTIVES
1	CT	Covenant not to sue; financial incentives.	Dedicated staff resources; expedited review; financial incentives.
	ME	Protection from enforcement and contribution for contamination remediated to the satisfaction of the state.	Not applicable.
	MA	Expedited cleanup process; ability to achieve clear endpoints.	Covenant not to sue; financial incentives.
	NH	Not applicable.	Parties may receive covenants not to sue, which protect against liability under state law for contamination addressed by approved remedial action program.
	RI	Covenant not to sue for nonresponsible performing parties; contribution protection against third party claims.	Covenant not to sue for nonresponsible performing parties, as well as contribution protection; funding authorized for facilitation of reuse/redevelopment.
	VT	Not applicable.	Limited liability protection for redeveloper and successors under the Hazardous Waste Management Act; site assessment funds through HUD grants.
2	NJ	Parties can set own schedule; covenant not to sue which carries with the property.	Loans, grants, tax incentives, remedial cost reimbursement, liability release, and variances from technical standards.
	NY	Cleanup to levels safe for intended use; liability release for contaminants addressed.	Release from liability transferable to future owners; 75% of costs associated with investment and cleanup by municipalities of publicly owned property.

EPA REGION	STATE	VOLUNTARY PROGRAM INCENTIVES	BROWNFIELD INCENTIVES
	PR	Not applicable.	Not applicable.
3	DE	Release from liability for prospective buyers when certificate of completion issued.	Low-interest loans; tax credit; grants.
	DC	Not applicable.	Not applicable.
	MD	Streamlined process; mandatory deadlines for agency determinations; no further requirements determination; certificate of completion; release of liability.	Property tax credits; grants and loans; free site assessments.
	PA	Relief from liability under state law for site remediation, including citizen suits and contribution actions; special cleanup standards for abandoned properties; technical assistance.	Not applicable.
	VA	No-further-action certificate issued upon satisfactory completion of remediation provides immunity from enforcement action under state law.	Not applicable.
	WV	Voluntary remediation agreement; certificate of completion.	Revolving loan fund for site assessments; other related activities.
4	AL	Reduced regulatory oversight and cost; increased speed; possibility of earning no-further-action letter.	Not applicable.
	FL	Not applicable.	Liability protection for program participants (and lenders under certain conditions) from state and third party claims; issuance of no-further-action letters; "risk based corrective action," whereby participants may be allowed to use institutional and engineering controls to manage risk by controlling exposure; \$2500 bonus refund for each new Florida job created; encouragement of local governments to offer redevelopment incentives such as streamlined permitting, tax credits, and low-interest loans.

EPA REGION	STATE	VOLUNTARY PROGRAM INCENTIVES	BROWNFIELD INCENTIVES
	GA	Limitation of liability; no cost recovery actions for monies previously spent by state; limitation on liability for third party civil claims for pre-existing releases.	Not applicable.
	KY	Not applicable.	Not applicable.
	MS	Expedited site review; no-further-action letter when appropriate measures have been taken and approved.	Liability protection.
	NC	Property transfer; liability limit; no-further-action letter.	No-further-action letter; possible limit on liability.
	SC	Covenant not to sue for successful completion of work; contribution protection for nonresponsible parties.	Covenant not to sue for successful completion of work; contribution protection for nonresponsible parties.
	TN	No-further-action letter; state will not promulgate lien or notice of hazardous substance on property deed; exemption from public hearings; site not placed on list; payment of orphan shares by state.	Not applicable.
5	IL	Issuance of no-further-remediation letter releasing party from both cost recovery and state enforcement.	State tax credit; state brownfield grants.
	IN	Certificate of completion; governor issues a covenant not to sue.	Tax rebate for nonpolluters; brownfield comfort letter; no-further-action letter under development; state revolving loan fund.
	MI	Protection for historical releases once remedial action plan is complied with; no protection for new events.	Grants to local governments for investigation and remedial action and protection against liability for historical contamination (if not party to the event); assistance with site investigations; exemptions from liability for past contamination for new owners who do baseline environmental assessment prior to 45 days after ownership.
	MN	Technical assistance; variety of liability assurances and financial assistance.	Liability assurances; financial incentives.

EPA REGION	STATE	VOLUNTARY PROGRAM INCENTIVES	BROWNFIELD INCENTIVES
	OH	Covenant not to sue; variety of tax credits; low-interest loans; grants.	Not applicable.
	WI	Financial incentives and liability exemptions.	Liability protection; financial incentives, including tax credits.
6	AR	Limitation of liability for program participants.	Release from state liability if cleanup is properly executed; low-interest revolving loan program.
	LA	Liability exemption for disposal or discharge of hazardous substance or waste; certificate of completion.	Outreach and education to potential redevelopers.
	NM	Liability protection during and following voluntary remediation agreement; certificate of completion for owner/operator; covenant not to sue for third party purchaser.	Not applicable.
	OK	Certificate of completion; certificate of no action (includes liability protections for cleaned up portions of the site); tax incentives; job incentives; advice/document review.	Certificate of completion; certificate of no action includes liability protections for cleaned up portions of the site; tax incentives for remediation and redevelopment; job incentives; advice/document review.
	TX	Release from liability to state for contamination occurring prior to the date of issuance of the completion certificate.	Education; technical assistance; state property tax abatements; letters for federal income tax expensing of remediation costs.
7	IA	Letter of indemnification from state for any future claims.	Not applicable.
	KS	No-further-action letter.	Not applicable.
	MO	No-further-action letter from state.	Grants, loans, loan guarantees and tax credits.
	NE	No-further-action letter.	Not applicable.
8	CO	Approval letter that states site does not pose risk; possible letter from EPA.	Not applicable.
	MT	Enforcement stay and/or a no-further-action letter.	Not applicable.
	ND	Not applicable.	Not applicable.

EPA REGION	STATE	VOLUNTARY PROGRAM INCENTIVES	BROWNFIELD INCENTIVES
	SD	Not applicable.	Not applicable.
	UT	Letter from state acknowledging site has been cleaned up and providing release from future liability.	Not applicable.
	WY	Not applicable.	Not applicable.
9	AZ	Expedited review of remedial actions and single point of contact.	Not applicable.
	CA	Streamlined program; cooperative working relationship; tailored to each site/project; no-further-action letter/certificate of completion.	Not applicable.
	HI	Letter of completion issued within 30 days after cleanup; completion recorded on property deed, running with the land; completion letter sent to building permit agency; exemption from future liability.	Not applicable.
	NV	"Closure" or comfort letter with respect to the spill incident.	Not applicable.
10	AK	No-further-action letter.	Not applicable.
	ID	Tax incentives; covenant not to sue.	Not applicable.
	OR	No-further-action letter.	Not applicable.
	WA	Site-specific technical assistance with written opinions; no-further-action letters.	Not applicable.

Source: *An Analysis of State Superfund Programs: 50 State Study, 1998 Update*, Environmental Law Institute. Chart is based on state information available as of December 31, 1997.

Brownfield and Voluntary Cleanup Program List

Appendix D

Alabama

Alabama Department of Environmental
Management
Voluntary Cleanup Program
P.O. Box 301463
Montgomery, AL 36130-1463
(334) 271-7700
<http://www.adem.state.al.us>

Alaska

Alaska Department of Environmental
Conservation
Contaminated Sites Remediation Program
Voluntary Cleanup Program
410 Willoughby Avenue
Juneau, AK 99811
(907) 465-5390

Arizona

Arizona Department of Environmental
Quality
Voluntary Cleanup and Brownfields Programs
3033 North Central Avenue
Phoenix, AZ 85012
(602) 207-4166
<http://www.adeq.state.az.us/>

Arkansas

Arkansas Department of Pollution Control and
Ecology
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
(501) 682-0798

California

California Environmental Protection Agency
Department of Toxic Substances Control
Site Mitigation Program
P.O. Box 806
400 P Street
Sacramento, CA 95812-0806
(916) 323-3700
<http://www.calepa.cahwnet.gov/dtsc.htm/>

Colorado

Colorado Department of Public Health &
Environment
Hazardous Materials & Waste Management
Division
Voluntary Cleanup Program
4300 Cherry Creek Drive South
Denver, CO 80222-1530
(303) 692-3300
[http://www.state.co.us/gov_dir/cdphe_dir/hm/
rp_gen.ht-ml](http://www.state.co.us/gov_dir/cdphe_dir/hm/rp_gen.ht-ml)

Connecticut

Connecticut Department of Environmental
Protection
Urban Sites Remedial Action Program
79 Elm Street
Hartford, CT 06106-5127
(860) 424-3000
<http://dep.state.ct.us/>

Delaware

Department of Natural Resources and
Environmental Control
Division of Air and Waste Management
Site Investigation and Restoration Branch
Voluntary Cleanup Program
391 Lukens Drive
New Castle, DE 19720
(302) 395-2600
<http://www.dnrec.state.de.us>

District of Columbia

Department of Consumer and Regulatory
Affairs
Environmental Regulation Administration
2100 Martin Luther King Jr. Ave., S.E.
Room 203
Washington, D.C. 20020
(202) 645-6080, ext. 3011

Florida

Department of Environmental Protection
Division of Waste Management
The Florida Brownfields Program
2600 Blair Stone Road
MS 4505
Tallahassee, FL 32399-2400
(850) 487-3299
<http://www.dep.state.fl.us/dwm/programs/brownfields/>

Georgia

Georgia Department of Natural Resources
Environmental Protection Division
Facilities Compliance Program
205 Butler Street, S.E., Suite 1462
Atlanta, GA 30334
(404) 656-2833
<http://www.ganet.org/dnr/environ/>

Hawaii

Hawaii Department of Health
Hazard Evaluation and Emergency Response
Office
Voluntary Response Program
919 Ala Moana Boulevard
Honolulu, HI 96814
(808) 586-4249
<http://www.hawaii.gov/health>

Idaho

Division of Environmental Quality
1410 N. Hilton
Boise, ID 83706
(208) 373-0276
<http://www.state.id.us>

Illinois

Illinois Environmental Protection Agency
Bureau of Land
State Brownfields Program
1001 North Grand Avenue East
Springfield, IL 62702
(217) 785-3497
<http://www.epa.state.il.us>

Indiana

Indiana Department of Environmental
Management
Brownfields Program
2525 N. Shadeland
P.O. Box 6015
Indianapolis, IN 46202-6015
(317) 308-3058
<http://www.state.in.us/idem/>

Iowa

Iowa Department of Natural Resources
Environmental Protection Division
Voluntary Cleanup Program
900 E. Grand Avenue
Des Moines, IA 50319
(515) 242-5817
<http://www.state.ia.us/government/dnr/organiza/epd/index.htm>

Kansas

Kansas Department of Health and Environment
Bureau of Environmental Remediation
Voluntary Cleanup Program
Forbes Field, Building 740
Topeka, KS 66620
(785) 296-1660
<http://www.kdhe.state.ks.us/ber/>

Kentucky

Department for Environmental Protection
Division of Waste Management
14 Reily Road
Frankfort, KY 40601-1190
(502) 564-2150
<http://www.nr.state.ky.us/nrepc/dep/dep2.htm>

Louisiana

Louisiana Department of Environmental Quality
Inactive and Abandoned Sites Division
Voluntary Cleanup Program
P.O. Box 82178
Baton Rouge, LA 70884-2282
(255) 765-0487
<http://www.deq.state.la.us/oshw/ias/ias.htm>

Maine

Department of Environmental Protection
Bureau of Remediation and Waste Management
Voluntary Cleanup Program
17 State House Station
Augusta, ME 04333-0017
(207) 287-7688
<http://www.state.me.us/dep/>

Maryland

Maryland Department of the Environment
Waste Management Administration
Voluntary Cleanup Program
2500 Broening Highway
Baltimore, MD 21224
(410) 631-3000
<http://www.mde.state.md.us/welcome.html>

Massachusetts

Massachusetts Department of Environmental
Protection
Brownfields Remediation
1 Winter Street, Seventh Floor
Boston, MA 02108
(617) 292-5500
<http://www.state.ma.us/dep/bwsc>

Michigan

Environmental Response Division
Department of Environmental Quality
P.O. Box 30426
Lansing, MI 48909
(517) 373-9837
<http://www.deq.state.mi.us>

Minnesota

Minnesota Pollution Control Agency
Site Response Section
Voluntary Cleanup Program
520 Lafayette Road
St. Paul, MN 55155-4194
(651) 282-5332
<http://www.pca.state.mn.us/cleanup/index.html>

Mississippi

Mississippi Department of Environmental
Quality
Hazardous Waste Division, Superfund Branch
Brownfields Program
P.O. Box 10385
Jackson, MS 39289-0385
(601) 961-5171
<http://www.deq.state.ms.us/domino/deqweb.nsf>

Missouri

Missouri Department of Natural Resources
Voluntary Cleanup Section
P.O. Box 176
Jefferson City, MO 65102
1-800-334-6946
<http://www.dnr.state.mo.us/homednr.htm>

Montana

Montana Department of Environmental Quality
Remediation Division
Voluntary Cleanup Program
2209 Phoenix
P.O. Box 200901
Helena, MT 59620
(406) 444-1420
<http://www.deq.mt.gov/index.html>

Nebraska

Nebraska Department of Environmental
Quality
Remedial Action Plan Monitoring Act Program
The Atrium
1200 North Street, Suite 400
P.O. Box 98922
Lincoln, NE 68509
(404) 471-2186
<http://www.deq.state.ne.us>

Nevada

Nevada Department of Conservation & Natural
Resources
Division of Environmental Protection
Waste Management and Corrective Action
333 West Nye Lane
Carson City, NV 89706
(702) 687-4670

New Hampshire

New Hampshire Department of Environmental
Services
Hazardous Waste Remediation Bureau
Brownfields Program
P.O. Box 95
6 Hazen Drive
Concord, NH 03302-0095
(603) 271-2900
<http://www.state.nh.us/des/hwrb>

New Jersey

New Jersey Department of Environmental
Protection
Bureau of Field Operation
Voluntary Cleanup Program
P.O. Box 434
Trenton, NJ 08625-0434
(609) 292-2934
<http://www.state.nj.us/dep/srp/index.htm>

New Mexico

New Mexico Environment Department
Ground Water Quality Bureau
Voluntary Remediation Program
Harold Runnels Building, Suite N2300
1190 St. Francis Drive
Santa Fe, NM 87502
(505) 827-2918
<http://www.nmenv.state.nm.us/>

New York

New York State Department of Environmental
Conservation
Environmental Remediation
Brownfields and Voluntary Cleanup Programs
50 Wolf Road
Albany, NY 12233-7010
(518) 457-5861
<http://www.dec.state.ny.us/>

North Carolina

Department of Environment and Natural
Resources
Division of Waste Management
Superfund Branch
Brownfields Program
401 Oberlin Road
Raleigh, NC 27605
(919) 733-4996
<http://www.ehnr.state.nc.us/EHNR/>

North Dakota

North Dakota Department of Health
Division of Waste Management
Hazardous Waste Program
P.O. Box 5520
1200 Missouri Avenue, Room 302
Bismark, N.D. 58506-5520
(701) 328-5166
[http://www.ehs.health.state.nd.us/ndhd/
environ/wm/index.htm](http://www.ehs.health.state.nd.us/ndhd/environ/wm/index.htm)

Ohio

Division of Emergency and Remedial Response
Ohio Environmental Protection Agency
Voluntary Action Program
P.O. Box 1049
Columbus, OH 43216-1049
(614) 644-2924
<http://www.epa.ohio.gov/derr/volunt.html>

Oklahoma

Oklahoma Department of Environmental
Quality
Waste Management Division
Voluntary Cleanup Program and Brownfields
Initiative
P.O. Box 1677
Oklahoma City, OK 73101-1677
(405) 702-5100
<http://www.deq.state.ok.us/waste/index.html>

Oregon

Department of Environmental Quality
Voluntary Cleanup Program
811 SW 6th Avenue
Portland, OR 97204-1390
(503) 229-6801
<http://www.deq.state.or.us>

Pennsylvania

Pennsylvania Department of Environmental
Protection
Land Recycling and Cleanup Program
P.O. Box 8471
Harrisburg, PA 17105-8471
(717) 783-7816
[http://www.dep.state.pa.us/dep/deputate/
airwaste/wm/landrecy/default.htm](http://www.dep.state.pa.us/dep/deputate/airwaste/wm/landrecy/default.htm)

Puerto Rico

Environmental Quality Board
Superfund and Emergency Program
P.O. Box 11486
San Juan, PR 00910
(787) 767-8181

Rhode Island

Rhode Island Department of Environmental
Management
Division of Site Remediation
Brownfields Program
291 Promenade Street
Providence, RI 02908
(401) 222-2797
<http://www.state.ri.us/dem/>

South Carolina

Bureau of Land and Waste Management
South Carolina Department of Health and
Environmental Control
Voluntary Cleanup Program
2600 Bull Street
Columbia, SC 29201
(803) 898-3432
<http://www.state.sc.us/dhec/>

South Dakota

Department of Environment and Natural
Resources
Superfund/Voluntary Cleanup Program
Foss Building
523 East Capitol Avenue
Pierre, SD 57501
(605) 773-3151
<http://www.state.sd.us/denr>

Tennessee

Tennessee Department of Environment and Conservation
Division of Solid Waste Management
State Remediation Section
L & C Tower, 5th Floor
401 Church Street
Nashville, TN 37243
(615) 532-0780
<http://www.state.tn.us/environment>

Texas

Texas Natural Resource Conservation Commission
Voluntary Cleanup Program
P.O. Box 13087
Austin, TX 78711-3087
(512) 239-2498
<http://www.tnrcc.state.tx.us/waste/pcd/vcp/index.html>

Utah

Department of Environmental Quality
Division of Emergency Response and Remediation
Voluntary Cleanup Program
168 North 1950 West, 1st Floor
Salt Lake City, UT 84114-4810
(801) 536-4100
<http://www.eq.state.ut.us/>

Vermont

Department of Environmental Conservation
Hazardous Materials Management Program
Redevelopment of Contaminated Properties Program
103 S. Main Street
Waterbury, VT 05671-0404
(802) 241-3888
<http://www.anr.state.vt.us>

Virginia

Virginia Department of Environmental Quality
Voluntary Remediation Program
P.O. Box 10009
Richmond, VA 23240
(804) 698-4236
<http://www.deq.state.va.us>

Washington

Department of Ecology
Toxic Cleanup Program
Voluntary Cleanup and Brownfields Programs
P.O. Box 47775
Olympia, WA 98504-7775
(360) 407-7205
<http://www.wa.gov/ecology/tcp/vcp/Vcpmain.htm>

West Virginia

West Virginia Division of Environmental Protection
Office of Environmental Remediation
Brownfields Programs
1356 Hansford Street
Charleston, WV 25301
(304) 558-2508
<http://www.state.wv.us/>

Wisconsin

Wisconsin Department of Natural Resources
Brownfields Program
101 S. Webster St., Box 7921
Madison, WI 53707-7921
(608) 267-6713
<http://www.dnr.state.wi.us>

Wyoming

Wyoming Department of Environmental Quality
Solid and Hazardous Waste Division
Voluntary Corrective Action Order Program
Herschler Building
122 West 25th Street
Cheyenne, WY 82002
(307) 777-7758
<http://deq.state.wy.us/>

Sources of Further Information

Appendix E

An Analysis of State Superfund Programs: 50-State Study, 1998 Update. Environmental Law Institute. 1998.

Brownfields: A Comprehensive Guide to Redeveloping Contaminated Property. Davis, Todd S. & Margolis, Kevin D. American Bar Association Section of Natural Resources, Energy and Environmental Law. 1997.

Brownfields Law and Practice: The Cleanup and Redevelopment of Contaminated Land. Gerrard, Michael. Matthew Bender Publisher. 1998.

Brownfields Cleanup Revolving Loan Fund Demonstration Pilots. U.S. Environmental Protection Agency. EPA 500-F-98-003. March 1998.

Brownfields of Dreams. Lerner, Steve. The Amicus Journal, Volume 17, Issue 4 at 15, New York. Winter 1996.

Brownfields Redevelopment: A Guidebook for Local Governments and Communities. International City/County Management Association and Northeast-Midwest Institute. 1997.

Brownfields Tax Incentives. U.S. Environmental Protection Agency. EPA 500-F-97-155. August 1997.

Brownfields Title VI Case Studies: Summary Report. U.S. Environmental Protection Agency. EPA 500-R-99-003. June 1999.

Building Upon our Strengths: A Community Guide to Brownfields Redevelopment in the San Francisco Bay Area. Urban Habitat Program. 1999.

Coming Clean for Economic Development: A Resource Book on Environment Cleanup and Economic Development Opportunities-Revised and Updated. Bartsch, Charles & Collaton, Elizabeth. Northeast-Midwest Institute. September 1996.

Community Reinvestment Act. U.S. Environmental Protection Agency. EPA 500-F-97-100. April 1997.

Environmental Aspects of Real Estate Transactions. Witkin, James B. (editor). American Bar Association Section of Natural Resources, Energy and Environmental Law and the Section of Real Property, Probate and Trust Law. 1995.

Guidebook for Transfer of Contaminated Properties. The National Environmental Policy Institute. September 1998.

Handbook for Tools for Managing Federal Superfund Liability Risks at Brownfields and Other Sites. U.S. Environmental Protection Agency. EPA 330-B-98-001. November 1998.

Lessons from the Field: Unlocking Economic Potential with an Environmental Key — 20 Case Studies of Successful Brownfields Reuse. Pepper, Edith. Northeast-Midwest Institute. 1996.

Liability and Other Guidance. U.S. Environmental Protection Agency. EPA 500-F-97-104. April 1997.

Potential Insurance Products for Brownfields Cleanups and Redevelopment. U.S. Environmental Protection Agency. EPA 500-F-97-106. April 1997.

RCRA Subtitle I: The Federal Underground Storage Tank Program. Nagle, Laura J. Environmental Law Reporter. February 1994.

Recycling America's Land: A National Report of Brownfields Redevelopment. United States Conference of Mayors. January 1998.

Recycling Land: Encouraging the Redevelopment of Contaminated Property. Geltman, Elizabeth G. Natural Resources & Environment, Vol. 10, No. 4 at 3-10. George Washington University. Washington, DC. 1996.

Standard Guide to the Process for Sustainable Brownfields Redevelopment. American Society for Testing and Materials. Designation E-50.03. 1999.

Standard Practice for Environmental Site Assessments: Transaction Screen Process. American Society for Testing and Materials. Designation E-1528-93. 1993.

Superfund: EPA's Use of Funds for Brownfields Revitalization. Government Administration Office. GAO/RCED-98-87. March 1998.

Superfund State Voluntary Programs Provide Incentives to Encourage Cleanups. Government Administration Office. GAO/RCED-97-66. 1997.

Sustainable Redevelopment of Brownfields: Using Institutional Controls to Protect Public Health. Pendergrass, John. Environmental Law Reporter. May 1999.

The Cleanup and Reuse of Brownfields: Key Issues and Policy Choices. Waste Management Research and Education Institute. University of Tennessee, Knoxville. April 1997.

Turning Brownfields into Greenbacks. Simons, Robert. Urban Land Institute. May 1998.

Voluntary and Brownfields Remediation Programs, An Overview of the Environmental Law Institute's 1998 Research. Breggin, Linda and Pendergrass, John. Environmental Law Reporter. June 1999.

Websites:

American Society for Testing and Materials:
www.astm.org

Brownfields Information Sources:
www.lehigh.edu/~injrl/subindex/brownfields.html

Clean-Start Properties Unlimited:
www.cleanstart.com

EnviroFLEX, Inc.:
www.brownfields.com

Environmental Law Institute:
www.eli.org

EPA Brownfields Homepage:
www.epa.gov/brownfields

EPA Brownfields Regional Links:

Region 1:
www.epa.gov/region01/pr/files/pr1008a.html

Region 2:
www.epa.gov/r02earth/superfnd/brownfld/bfmainpg.htm

Region 3:
www.epa.gov/reg3hwmd/brownfld/hmpage1.htm

Region 4:
www.epa.gov/region4/wastepgs/brownfpgs/bf.htm

Region 5:
www.epa.gov/R5Brownfields

Region 6:
www.epa.gov/earth1r6/6sf/bfpages/sfbfhome.htm

Region 7:
www.epa.gov/region07/specinit/brown/brownfields.htm

Region 8:
www.epa.gov/region08/cross/brown/brownf.html

Region 9:
www.epa.gov/region09/waste/brown/index.html

Region 10:
<http://epainotes1.rtpnc.eps.gov:7777/r10/cleanup.nsf/webpage/Brownfields>

International City/County Management Association:
www.ICMA.org

National Center for Brownfields Reclamation:
www.brownfieldsnet.org

Northeast-Midwest Institute:
www.nemw.org

The Brownfields Non-Profits Network:
www.brownfieldsnet.org