

Protecting Health and Safety with Institutional Controls

Larry Schnapf

Federal and state environmental agencies are under increasing pressure to expedite the cleanup of contaminated sites so that the properties can be returned to productive use. One of the more popular tools to accelerate site cleanups is implementation of institutional controls (e.g., deed restrictions and drinking water prohibitions).

Under a more traditional cleanup approach, health risks are addressed by either treating contaminants on-site or removing them to a treatment or disposal facility. An alternative to complete treatment or removal of contaminants, institutional controls are legal controls that create barriers that prevent the public from being exposed to unhealthy concentrations of contaminants. They are often used in conjunction with engineering controls that are physical barriers such as impermeable caps that physically separate people and environmental receptors from contact with contaminants. Because cleanups relying partially or wholly on institutional controls may not require groundwater treatment or may allow higher levels of residual contamination to remain in soils, cleanups using institutional controls may be more cost-effective initially and be completed much faster than the more comprehensive site cleanups.

The use of institutional controls in hazardous waste site cleanups is not a new development. The United States Environmental Protection Agency (EPA) has promulgated hazardous waste regulations, 40 C.F.R. §§ 264.118 and 265.118, and the National Contingency Plan (NCP), 40 C.F.R. § 300.430(a)(i)(D), authorizes the use of institutional controls. EPA has acknowledged that institutional controls will play a key role in future cleanup remedies. U.S. EPA, Office of Solid Waste and Emergency Response, *Land Use in the CERCLA Remedy Selection Process*, OSWER Directive No. 9355.7-04, 9 (May 1995) (Land Use Directive). Moreover, the Department of Defense (DOD) also has relied on institutional controls at closed military bases to speed up the transfer of these facilities to local redevelopment agencies.

What is significant is the extent to which institutional controls are being used to achieve cleanup goals. In the twelve years following passage of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§ 9601 *et seq.* (CERCLA), only 14

percent of the CERCLA cleanups used institutional controls. Since the mid-1990s, however, 60 percent of all remedies approved by EPA require long-term management or monitoring that utilize some form of institutional or engineering controls. ROBERT HERSH ET AL., RESOURCES FOR THE FUTURE, *Linking Land Use Controls and Superfund Cleanups: Uncharted Territory* 72. (1997). Institutional controls also are playing a crucial role at sites that are being remediated under state brownfield and voluntary cleanup programs.

This shift toward relying on institutional controls has been criticized by some government regulators and environmental organizations. There is concern that there has been insufficient debate over what types of properties and land use controls are appropriate to protect the public from the risks of residual contamination. For example, a 1998 United States General Accounting Office report indicated that 96 percent of the sites potentially eligible for inclusion on the federal National Priorities List (NPL) are located within a half-mile of residences or places of regular employment. U.S. GENERAL ACCOUNTING OFFICE, HAZARDOUS WASTE: UNADDRESSED RISKS AT MANY POTENTIAL SUPERFUND SITES, REPORT TO THE RANKING MINORITY MEMBER, COMMITTEE ON COMMERCE, UNITED STATES HOUSE OF REPRESENTATIVES, GAO/RCED-99-8, 2 (Nov. 1998). An EPA study indicated that 80 percent of the existing sites subject to CERCLA cleanups are adjacent to or near residential neighborhoods. U.S. EPA, SUPERFUND ADMINISTRATIVE REFORM FACT SHEET (May 1995). The large numbers of people living or working within proximity of these sites illustrate the importance of ensuring that institutional controls effectively protect these individuals from the risks posed by the presence of hazardous substances.

However, there is also concern over the long-term effectiveness of institutional controls. Unlike permanent remedies, land use controls need to be monitored to ensure their effectiveness. If an impermeable cap placed over a commercial site contaminated with heavy metals is allowed to deteriorate, workers and visitors to the site could become exposed to contaminated dust. Likewise, if utility lines have to be repaired and the excavation activities damage a vapor extraction system, occupants could be exposed to unhealthy levels of volatile organic compounds (VOCs). This article reviews types of institutional controls; explores the critical issues associated with the creation, implementation,

Mr. Schnapf is a New York City-based environmental lawyer and an adjunct professor at New York Law School.

and enforcement of institutional controls; and also proposes some solutions for improving the effectiveness of institutional controls.

What Are Institutional and Engineering Controls?

As noted above, institutional controls are legal or administrative mechanisms that may limit use or access to property to eliminate exposure to hazardous materials and to ensure the effectiveness of ongoing remedial activities. There are essentially two broad categories of institutional controls: proprietary controls and government controls.

Proprietary controls are private contractual mechanisms that are contained in a deed or other instrument used to transfer title to property. Absent specific statutory authority, most jurisdictions require that there be a conveyance of some form of property interest to create an enforceable proprietary control.

Thus, where a site owner conducts a cleanup but does not intend to sell or lease the property, it may be difficult to create a proprietary interest because no conveyance has occurred. There are several common forms of proprietary controls: restrictive covenants, easements, deed restrictions, reversionary interests and equitable servitudes.

Restrictive covenants are promises by a landowner to take or refrain from taking certain actions. For example, an affirmative covenant may be a promise by an owner to maintain a fence that surrounds a former hazardous waste disposal site. Alternatively, a restrictive covenant can be in the form of a promise not to use groundwater or conduct certain activities at a site. If the covenant "runs with the land," it can be enforced against subsequent landowners. Restrictive covenants are normally used with multiple parcels to mutually benefit the properties. They may not be suitable to impose institutional controls on a single property or where the restriction is intended to benefit the public instead of the property subject to the covenant.

Easements are a right to a "limited" use or enjoyment of the land of another. An easement usually creates a benefit for one parcel of land (the "dominant estate") and an obligation or burden for another (the "servient estate"). When an easement attaches to the land such as a right of access for a landlocked parcel, it is known as an "appurtenant easement." In contrast, easements that are granted to a particular party such as utility easements are known as "easements in gross." An affirmative easement grants a right to use land of another,

while a negative easement restricts lawful uses of land. An easement could be granted to allow someone to come onto a brownfield site to inspect the integrity of a cap or monitor groundwater. If the property owner violates the easement, the holder of the easement may bring suit to restrain the owner. Local governments or other institutions have been reluctant to become holders of easements to contaminated property out of fear that they may be construed to be a CERCLA owner or be sued for failing to properly exercise or enforce the easement by a person who becomes exposed to contaminants.

Deed restrictions are obligations or promises by a property owner to constrain the use of land in a certain way. Like restrictive covenants and easements, deed restrictions must comply with certain formalities to be enforceable. There must be a written instrument that satisfies the applicable statute of frauds, the parties must intend that the deed restriction attach to the land,

it must "touch and concern" the land, and there must be "privity of estate." Generally, use of the phrases "run with the land," "in perpetuity," or "successors and assigns" will satisfy the requirement that the parties intended the restriction to attach to the land, but applicable real property law should be consulted. In addition, subsequent conveyances of property must generally contain a specific reference to the restriction in the new deed (i.e., the deed book and page number where the encumbrance was recorded). If the new deed does not contain such a reference, the restriction may not be enforceable against the new owner. Thus, property owners creating deed restrictions may have to review and approve the language of future deeds.

Reversionary interests are a conditional right to future enjoyment of property that is presently owned or occupied by another person. An owner conveying contaminated property may enforce a use restriction or covenant by establishing a reversionary interest so the land will revert to the grantor (or designee such as a regulatory agency) if the conditions are violated. Generally, only the original owner or its successors may enforce this right. The underlying presumption behind this type of proprietary control is that the future landowner will have an incentive to maintain the institutional control because it does not want to lose the property. Obviously, reversionary interests will not be an effective institutional control if the future owner determines the site contamination no longer makes the property valuable or if the grantor has no interest in reclaiming the property. Moreover, a former owner may

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have little interest in monitoring the site or making sure the controls are obeyed.

Equitable servitudes are restrictions on the use of land that is enforced in equity against future transferees of the property. The restriction creating the servitude may take the form of a promise, covenant or reservation. The servitude must generally be memorialized in writing, be intended to restrict uses of the land as opposed to preventing an individual from taking certain actions and the transferee must take the land with either actual or constructive notice of the servitude.

Government controls are restrictions used by state and local governments that limit the use of property. These controls are exercised through planning and zoning maps and ordinances, subdivision plats, building permits, siting restrictions and groundwater use restrictions in the form of well-drilling prohibitions or well use permits.

Though not technically considered institutional controls, informational notices can be an effective mechanism for limiting exposure to contaminants. The purpose of these informational tools is to advise future owners and users of hazards existing at the property. These notices do not impose affirmative obligations on owners of property but, instead, require that warnings of site hazards be conveyed to the public. Examples of such warnings may be deed notices, publishing legal notices in local newspapers and posting of warning signs at the property. However, because title searches may sometimes only search back to the most recently recorded warranty deed, a prospective purchaser may not be aware of an older deed notice.

Moreover, tenants usually do not conduct title searches prior to taking possession of property. To address this problem, some communities have also established registries of hazardous waste sites or Geographic Information Systems (GISs) that can inform the public about contaminated sites. Public health departments have long used advisories to try to warn the public about certain kinds of risks. However, the problem with these advisories is that they are not completely effective because some will not receive or understand the warnings or will choose to ignore them. Therefore, these informational tools are generally not effective as institutional controls. In addition, some states have enacted transfer laws that require sellers to notify prospective purchasers of contamination at property to be conveyed.

Traditional enforcement actions also may be used to create institutional controls. Use restrictions or restrictive covenants may be embodied in enforcement

documents such as administrative orders, consent decrees, No Further Action (NFA) letters, and Covenants Not To Sue (CNTS).

Selecting Institutional Controls

The first important issue to be addressed is the selection of the particular institutional control. Section 121 of CERCLA contains cleanup criteria that EPA must consider when selecting a remedial action. The criteria do not explicitly refer to institutional controls. In addition, the section also expresses a preference for permanent on-site treatment of contaminants. Thus, it would appear at first glance that CERCLA would preclude remedial strategies employing institutional controls. However, Section 121 also provides that cleanups should be cost-effective and that the cleanup criteria should be achieved to the "maximum extent practicable." This language suggests that this institutional control may be appropriate where permanent treatment is not feasible. Indeed, in the preamble to the 1990 amendments to

the NCP, EPA did allow for the use of institutional controls when more permanent or active treatment would be impractical. 55 Fed. Reg. 8706 (Mar. 8, 1990). The preamble to the 1990 amendments stated that institutional controls were a necessary supplement when some waste is left in place, as it is in most response actions. *Id.*

Unfortunately, the type of institutional controls that are to be used at a site are not determined early in the remedy-selection process. In the past, EPA site managers assumed that contaminated properties would be used for residential purposes when they developed exposure assumptions and exposure pathways during

the performance of the Remedial Investigation (RI). These hypothetical exposure scenarios were then used to select remedial alternatives and preliminary remediation goals. However, under EPA's 1995 Land Use Directive, site managers may now identify "reasonably anticipated land uses." While the need for land use restrictions may be referred to generally in the proposed remedial plan that is reviewed during the public comment period, the specific institutional controls that may be required at a site are usually not identified until after the public participation period has been completed and a Record of Decision (ROD) has been issued. Unless the ROD identifies institutional controls, the selection of institutional controls will likely take place during the consent decree negotiations between EPA and potentially responsible parties (PRPs) in which the public or the affected community have little or no opportunity to participate.

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The appropriateness of the institutional controls will often be predicated on the "reasonably anticipated land uses" that were identified early in the remedial investigation stage. However, it is often very difficult to anticipate future land use. EPA site managers are supposed to review zoning maps, comprehensive plans and development patterns when developing the reasonably anticipated land use. The purpose of zoning is to separate incompatible types of land use by regulating the activities that can be conducted on properties, as well as the size and location of structures on the property. Zoning systems are designed to have some flexibility to compensate for economic changes in a community. As a result, relying on zoning and land use planning may not be a reliable predictor of the future use, nor serve as an appropriate enforcement mechanism when long-term institutional controls are required because zoning plans can change over time. Property owners can request to have sites rezoned, seek zoning variances or challenge local zoning restrictions. There can also be discrepancies between zoning ordinances and zoning maps. Moreover, the broad zoning classifications usually contained in zoning ordinances are not designed to protect the public from the types of risks that might be posed by former industrial properties. For example, some jurisdictions use cumulative zoning where industrial classifications can allow more restrictive uses. In such jurisdictions, a property could be used for residential purposes even though the area is zoned for commercial uses. In addition, in some areas industrial/commercial classifications allow uses such as day care centers where vulnerable populations may be present. Thus, in many areas, zoning may not be effective as an institutional control.

This problem of identifying reliable land use assumptions and late selection of institutional controls is not limited to the CERCLA program. The procedure that EPA has adopted for conducting RCRA corrective actions is modeled after the CERCLA remedy-selection process and suffers from the same flaws. When transferring military bases, DOD will consider a range of reasonably likely land uses during the remedial selection process taking into account current land use, current zoning classification, unique property attributes and surrounding land uses. DOD has indicated in the past that it expects the community and the local land use agency to take the environmental conditions of the property, the planned remedial actions and any technological or resource limitations into account when developing reuse plans for the property. Under many of the state brownfield or voluntary cleanup programs, the public is given limited opportunity to participate in the identification of land use assumptions and land use controls. However, some states require that the proposed land use restrictions be published in local newspapers to provide the public with an opportunity to comment while a few also mandate that various local government

agencies be given notice of the restrictions as well.

The type of institutional control that is appropriate may depend on the type of contaminants, the nature of the contamination, and the expected longevity of the contamination. The type of control that may be appropriate for a site with petroleum-contaminated soil that may degrade in a few years may not be appropriate for a site with uranium tailings that will remain hazardous for thousands of years. Likewise, a site contaminated with relatively immobile metals may require different controls from a site with a groundwater plume of solvents or methyl tertiary butyl ether (MTBE) which is rapidly migrating away from the site. Institutional controls that may effectively prevent on-site exposure may not work well for off-site contamination. For example, at some CERCLA sites, radioactive or metallic dust from tailings may have been carried by the wind far beyond the boundaries of the site or may have been used as fill for streets and buildings in the community.

Creating Institutional Controls

EPA cannot create institutional controls under federal law. As a result, while the obligation to create land use controls may be contained in a federal consent decree, EPA must rely on actions under state property law or the general police power of local governments to create the controls. As discussed earlier, proprietary-type institutional controls require a conveyance of property. Where a property owner has entered into a settlement with EPA, the agency will try to address this problem by requiring the landowner to convey an easement for the purpose of allowing the agency to enforce the terms of the settlement. State environmental agencies usually face the same constraints, although some state voluntary cleanup programs or brownfield programs have statutorily created easements in favor of the state environmental agency that run with the land.

States vary on how to establish institutional controls. Many states do not require the restriction to be recorded but simply provide that the restriction be contained in a NFA letter, certificate of completion or a remediation agreement. Some states will not require the filing of use restrictions in the chain of title if it can be shown that there are adequate local government controls that reliably can be used to minimize exposure to hazardous substances. This will probably be most useful when dealing with contaminated groundwater because permits are often required before a drinking water well may be installed. For example, some states have established groundwater "Classification Exception Areas," in which the agency recognizes that groundwater is contaminated but will not be used for drinking purposes.

Those states that require institutional controls to be recorded rely on different types of instruments. While some states require that the restrictions be placed on

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the deed itself, others simply require that the owner of the property record a restrictive easement or covenant acceptable to the environmental agency. These particularly useful where a current landowner agrees to create institutional controls but there is no conveyance of property. Some states have developed forms with statutory-specific language that cannot be modified.

The instrument creating a proprietary control such as a restriction or easement must be in recordable form, which means it generally needs to be notarized. While the recorders' offices will generally not allow an instrument to be filed that does not comply with the local recording requirements, sometimes such documents are found in the chain of title. Even if the document is recorded, any defect—including lack of notarization—can prevent the restriction from being enforced against subsequent landowners.

The instrument should contain a specific recitation of the work that has been performed at the site, describe the engineering controls that will remain at the site and their specific location, the specific uses that are to be prohibited and permitted, the specific remediation goals to be achieved for the restrictions to be lifted (e.g., groundwater contaminant concentrations), and the instrument that will be used to terminate the restrictions. The language should track that wording contained in an enforceable agreement or other decision-making document (e.g., ROD). If only portions of the property are subject to use restrictions, the instrument should clearly limit the restrictions to those affected portions of the site. The instrument should not refer to the entire property but specific lots and blocks unless the entire site is subject to the restriction.

Enforcing Institutional Controls

Perhaps the most important factor for ensuring effectiveness of institutional controls is the existence of a reliable enforcer. Environmental agencies will perform detailed risk assessments for developing remedial actions but except for groundwater monitoring programs, there is virtually no post-construction analysis to determine if an institutional or engineering control is effectively preventing the affected community from exposure. Thus, it is important that the instrument creating the institutional control identify the party who will have the right to enforce the restrictions and be re-

sponsible for maintaining and repairing the controls. Responsibilities of the enforcer may include making periodic site inspections to ensure that prohibited activities are not taking place; checking the integrity of caps, fencing and other barriers; ensuring that site use has not extended into prohibited areas; and inspecting drinking water wells to make sure that they are not being used.

When relying on governmental controls, EPA and state environmental agencies often look to the local government to ensure that the institutional controls are properly enforced. However, local governments often lack the experience, resources and inclination to verify compliance to enforce land use controls arising out of agreements between private parties. Likewise, applica-

tions for building permits or subdivision plats generally only require evidence of ownership. Local agencies may not review the underlying deeds to determine if the proposed uses violate any existing deed restrictions. In fact, according to a 1998 report issued by the International City/County Management Association, 72 percent of the local government bodies surveyed did not search titles before making zoning changes. Christine Gaspar and Denise Van Burik, International City/County Management Association, *Local Government Use of Institutional Controls at Contamination Sites* 15 (1998).

This report illustrated additional problems with using zoning to enforce institutional controls. It found that while local governments primarily rely on zoning to enforce institutional controls, the principal enforcement mechanism used by the majority of respondents was simply making sure that the land use was consistent with zoning maps. Most of the respondents indicated that they did not conduct any formal inspections to confirm compliance with the controls. In fact, the report revealed that citizen complaints were the most common means for discovering violations of institutional controls. Approximately two-thirds of the local entities surveyed felt that it was likely that current owners could breach institutional controls without the local government learning of the violation for several years.

Further complicating the effectiveness of government controls is the fact that it is usually county governments and not local officials that are responsible for recording deeds and other land use restrictions. Thus, local government authorities may not even be aware of

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the existence of institutional controls. Accordingly, it is advisable for town attorneys and managers to establish an information exchange with the county governments and perhaps even establish procedures for enforcing institutional controls in their building or zoning codes.

The passage of time can also impact the effectiveness of zoning as an institutional control. A property may have been used as a manufacturing facility in the earlier part of the century and then may have been converted into a shopping center or store. After the store goes out of business, a developer may want to build residential units on the property, or the town may want to build a school or allow a day care center to be operated. With the passage of time, there might not be any institutional memory or adequate records alerting the zoning board that the site might be contaminated. As a result, the board may grant a petition to reclassify the property for residential or commercial use without taking measures to ensure that occupants are not exposed to contaminants at the site.

Enforcement of proprietary controls can be more problematic. The enforcement of these forms of institutional controls can be undermined by traditional doctrines of real property law that favor the free alienability of land and disfavor the enforcement of restrictions against owners who take title long after the restriction was imposed. Under real property law, the grantee is usually the only party who has the right to enforce a property interest. If the grantee fails to enforce the provisions of the instrument, it might be difficult to compel compliance unless another party is granted enforcement authority.

It may be difficult to implement and enforce a proprietary form of institutional control that requires the consent of multiple landowners. For example, an owner of property that is contaminating groundwater may agree to an institutional control prohibiting the use of drinking water wells on its property and the adjoining properties but it may be difficult to enforce that restriction on the surrounding property owners. Likewise, proprietary controls also may not be effective where a deep-pocket PRP must obtain the consent of an adjacent property owner and the adjacent owner seeks a significant sum of money in exchange for agreeing to the deed restriction. Similarly, a tenant who has agreed to implement an institutional control may not be able to obtain the consent of its landlord to impose a use restriction on the property or the landlord may ask for compensation that the tenant may not be able to afford. If the institutional control requires a future land use that is different from the cur-

rently zoned use, a different remedy may be more appropriate.

Because real property law generally requires a conveyance to establish an enforceable property right, environmental agencies may not be able to enforce proprietary controls. As a result, some states require that the property owner grant a right of access and an environmental easement to the state environmental agency, and other states have enacted legislation creating statutory land use restrictions or easements. Some of these statutes even provide that the restrictions will be enforceable even if they do not comply with some of the common law technicalities. To be enforceable against new owners, though, restrictive covenants must "run with the land." Instruments creating the control containing phrases like "run with the land," "in perpetuity" or "successors and assigns" may be sufficient, but it is important to review the requirements of the local real property law to determine what language is required.

Even if an easement or use restriction can be en-

forced between an environmental agency and a current owner, it is unclear if community groups or local governments could enforce a restriction that the owner fails to implement or maintain. Likewise, if the easement holder fails to bring suit in a timely manner to enforce the violation of an institutional control, the restriction may be deemed to have been terminated and third parties may not be able to enforce the use limitation. Similarly, a use restriction may not be enforceable against a lender who is holding a mortgage that was perfected prior to adoption of the use restriction. Technically, if such a lender forecloses on the property

and then sells the property, the use restriction may not be enforceable against the transferee although this may have little practical effect because the transferee may not be able to obtain title insurance. For this reason, some states require the grantor to have a subordination agreement executed by lenders, lien holders, lessees and other owners of previously perfected property or possessory interests. Some states require the purchaser, lessee or transferee to acknowledge that institutional controls may be required. It is important to make sure that executing a subordination certification does not waive rights to object to implementation of such remedy.

There also can be problems enforcing institutional controls that may be created through an enforcement tool, such as administrative orders or consent decrees. While these orders can be enforced against the named parties or signatories, they generally do not create or

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convey a property interest. Therefore, the provisions of the orders usually may not be enforceable against subsequent owners or occupiers of the property even where the buyer or tenant has actual notice of the restriction.

Environmental authorities may try to navigate around this problem by requiring that notice of transfers of the title or possessory interests in the property be given to the agencies and that transferees agree to be bound by the terms of the orders. In addition, most NFA letters and CNTS generally provide that the releases from liability will be revoked if mandated institutional controls are not maintained. However, in states where innocent landowners may not be liable for pre-existing contamination, the state environmental authority may only bring an enforcement action against the recipient of the NFA or CNTS. To address this problem, some state environmental statutes now require enforcement orders imposing use restrictions to be recorded and that such recorded orders "run with land."

A few state environmental agencies are also required to maintain registries of properties where hazardous wastes have been disposed or where use restrictions have been imposed. Often, the state environmental agency must approve transfers or changes in use of listed sites. However, given limited resources, enforcement can be difficult if the owner does not provide the required notice to the state prior to conveying the property.

Maintenance of long-term institutional controls can be costly and in some cases may exceed the initial construction costs of the remedy. Consequently, creation of some form of financial assurance mechanism or insurance should be considered. If the facility is regulated as a RCRA treatment, storage or disposal facility, it is possible that the RCRA financial assurance requirements may be used to ensure that adequate funding is available to maintain the institutional controls. Financial assurance is also a common feature of CERCLA remedies.


Modification or Removing Institutional Controls

Another important issue is the mechanism for modifying or terminating land use controls. Modification may be necessary to excavate soil for an expansion of a building or to repair utility lines. If the new land use will require additional remediation, the parties need to agree on who will pay for the additional work. Usually the party who desires the change will bear the costs of the additional cleanup.

When controls are no longer needed to protect human health or the environment, the instrument should also identify a process for removing the controls. Only a handful of states have forms of releases that must be executed by the state environmental agencies to terminate the institutional controls. In the rest of the states, it may be unclear what document has to

be presented to the local records clerk to prove that the remedy has been completed and the institutional controls can be released. Though the parties could provide that the institutional controls will automatically terminate upon the achievement of certain standards such as levels of contamination, a better practice would be to require the recording of a separate instrument terminating the controls. This could be a release similar to the satisfaction of mortgage that is filed when a mortgage is paid off or the issuance of an NFA letter.

Because of the growing importance of institutional controls, the technical adequacy of cleanup remedies may be affected by local land use factors over which EPA and state environmental agencies have no control. To ensure that remedies are being sufficiently protective of human health and the environment, the NCP could be revised so that selection of land use is incorporated into the formal remedy-selection process. If institutional controls are to be used, the exact conditions of the restrictions should be set forth in the ROD so that the public can have ample opportunity to comment on the appropriateness of the restrictions. The ROD should also identify the parties who will be responsible for the long-term maintenance of the controls. Consent decrees or administrative orders for a site utilizing institutional controls should provide that failure to abide by the terms of the institutional controls would be a violation of the order and trigger stipulated penalties. Alternatively, a permit could be issued specifically for the creation and enforcement of institutional controls. If EPA intends to continue to rely so heavily on institutional controls, the agency might even consider creating a new office that would track the implementation and maintenance of institutional controls and perhaps provide resources to local governments to help them establish systems for monitoring institutional controls. EPA might also consider creating financial assurance requirements to ensure that funding will be available for the long-term maintenance of those institutional controls.

At a minimum, states should establish databases or a GIS that list the properties subject to institutional controls or flag existing contaminated sites so that they can be easily identified. Local governments and utilities should be required to review these registries which could be made available through the Internet or perhaps placed on compact disks with read-only memory (CD-ROMs). These registries should provide detail on the specific locations, quantity, and types of contamination so local permitting or planning agencies can ensure that proposed activities will not disturb the contaminants. They should also describe residual contamination that might exist under streets or buildings constructed on contaminated fill or dust so that maintenance or repair work done by utilities and road departments do not inadvertently expose workers and residents to unhealthy levels of contaminants. 

Indoor Air Quality

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water with carcinogenic amphibole asbestos fibers). At least one court, however, has distinguished abatement costs from civil penalties imposed by regulatory authorities. In *Beerman Realty, Inc. v. Alloyd Asbestos Abatement Co.*, 653 N.E.2d 1218 (Ohio Ct. App. 1995), the court ruled that the contractor was not liable to the building owner for civil penalties assessed for failure to comply with Clean Air Act requirements. Although the building owner had reached an agreement with the contractor to follow all Clean Air Act provisions, the owner was still liable for civil penalties assessed for the contractor's noncompliance. The court reasoned that requiring indemnification would contravene public policy by eliminating an owner's incentive to ensure regulatory compliance. See *id.* at 1220.

Design Professional Liability

The common law tort theories could be extended to design professionals as well. An action for damages against a design professional would most likely be asserted on the grounds of negligent performance of professional services. See *Bus. Men's Assurance Co. of Am. v. Graham*, 891 S.W.2d 438, 454 (Mo. App. W.D. 1994) (allowing plaintiff to seek damages against an architect for economic damages in tort). An action for abatement costs as to a design professional would, in all probability, be based on the negligent design or negli-

gent approval of construction. See *Evanston Ins. Co. v. Treister*, 794 F.Supp. 560 (D.V.I. 1992). Strict liability claims, however, are generally not allowed against persons providing professional services. See, e.g., *Bruzga v. PMR Architects, P.C.*, 693 A.2d 401 (N.H. 1997) (refusing to extend strict liability to architects, contractors, engineers, and vast array of others involved in design and construction of buildings).

Thus, civil claims for property damage and personal injury are available to IAQ claimants based on common law theories, including negligence and, in some cases, strict liability. Liability may be found on the part of building owners, property managers, lessees or other occupants, employers, manufacturers, contractor manufacturers and design professionals. Common law duties may require an owner, occupant or employer to abate a potential IAQ problem before injury occurs and may require a manufacturer or contractor to indemnify the abating party.

While common law causes of action are just one tool for addressing IAQ problems, they are in part filling the regulatory gaps that exist at the federal and state level. The law governing IAQ claims, however, is still evolving and reforming as it applies traditional areas of tort and contract law to complex factual situations. Counsel should be particularly aware of the subtleties and public policies implicit in these opinions, as these appear to be the primary forces guiding the courts in IAQ cases. 

Trends & Insights

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try study of the Chickahominy owls to determine their actual home range and habitat use pattern.

A year of intensive radio telemetry study of the Chickahominy owls found that the male owl had used the Unit twelve times and the female two times, out of 499 total telemetry points, and that the Unit is within the home range of the owls. The predominant use of the Unit was foraging by the male owl. No nesting occurred in the Unit and only two instances of roosting (sheltering) occurred. The owls' home range for the year was an irregular shape covering approximately 3,600 acres.

The telemetry study confirmed that the Chickahominy owls make extensive use of older forest for foraging and roosting. The frequency of the Chickahominy owls' use of older forest stands was proportionately greater than the amount of older forest within their home range. Yet the telemetry also showed that more than 60 percent of the Chickahominy owls' total foraging and roosting activity occurred in young second-growth fir stands and in hardwood stands—not in the older forest. Young second-growth fir stands and

hardwood stands make up over 60 percent of the home range. The Chickahominy owls use these stands in proportion to their availability within the home range. As the district court noted, the Chickahominy owls' breeding, feeding and sheltering were obviously successful because the owls successfully bred during three consecutive years and were among the most productive owl pairs in the Oregon coast range.

At a retrial in 1999, the government stuck with a variation of its original case: the extensive use of young and hardwood stands by the Chickahominy owls is irrelevant, the government argued, because most owls would not use these stands as extensively and would need more older forest. The government argued that the loss of the older forest in the Unit would significantly impair the male owl's foraging behavior, causing actual injury or death to both owls.

Thus, the issue in *West Coast* was when does modification of habitat that is actually used by a protected animal violate the harm rule? The Supreme Court in *Sweet Home* emphasized that timber harvest or other land management is not illegal under the harm rule

merely because it modifies habitat that is suitable for a listed species. *Sweet Home*, 515 U.S. at 691 n.2 ("actual death or injury of a protected animal is necessary for a violation"). See generally Quarles, MacLeod & Lundquist, *Sweet Home and the Narrowing of Wildlife "Take" under Section 9 of the Endangered Species Act*, 26 *Envtl. L. Rep.* 10,001 (Jan. 1996).

The Ninth Circuit carried this point one step further in a recent decision finding that clearing of unoccupied pygmy owl habitat in Arizona would not result in a take, even though the area immediately adjacent to the unoccupied habitat was used by the protected pygmy owl. *Defenders of Wildlife v. Bernal*, 204 F.3d 920 (9th Cir. 2000). In contrast, the Ninth Circuit addressed clearing of occupied nesting habitat in *Marbled Murrelet v. Babbitt*, 83 F.3d 1060 (9th Cir. 1996). There, the court held that harvest of 237 acres in a 440-acre contiguous stand of old forest where there were 100 detections of nesting behavior by marbled murrelets would be a take of the murrelets under the harm rule. Like the court in *Babbitt*, the *West Coast* court had to apply the harm regulation to a situation involving removal of habitat actually being used by individuals of the species.

The district court in *West Coast* ruled that harvesting the habitat used in the Unit will not violate the harm rule. The court recognized that the male owl used the Unit for foraging, and that the harvest would affect the male's feeding behavior. However, the court held that interference with foraging behavior alone is not enough to prove a violation of the harm rule. The court dismissed the case because the government failed to prove that the effect on the male's foraging behavior would be a significant impairment of that behavior, and failed to prove that harvesting the Unit would actually kill or injure either of the Chickahominy owls. The court found that the ample availability of other foraging habitat within the 3,600-acre home range, and the pair's high reproductive rate in recent years, made it unlikely that removing the 96-acre Unit would actually kill or injure the owls.

The decision in *West Coast* is important for three reasons. First, it emphasizes that a plaintiff seeking to enforce the harm regulation must have substantial evidence to prove the allegation of harm. In the first phase of the case, the *West Coast* court had posed several questions that needed to be answered before the government could prove its case: Was the proposed harvest unit within the actual home range of the pair? How much suitable habitat occurred in the pair's home range? Was the pair actually using the Unit and for what purpose? What was the relative quality of suitable habitat within the Unit compared to suitable habitat otherwise available to owls within the home range? And to what degree would the loss of the habitat within the Unit impair the essential behavioral functions of the owl? The court then gave the government the benefit

of the doubt and allowed the government a year to collect the evidence needed to prove its case. Now that the government knows what information is needed to prove take, a court may be more inclined to dismiss the next case the government files against a forest landowner for an alleged take of northern spotted owls without sufficient evidence. Arguably, the case should have been dismissed in 1997 when the *West Coast* court concluded there was insufficient information to prove harm to the Chickahominy owls.

Second, the case demonstrates that exclusive reliance on general behavioral characteristics of a species is not sufficient to prove harm to an individual member of the species. In *West Coast*, most of the prior spotted owl research had occurred on federal lands dominated by older forest and young sapling stands. Studies in those areas found that owls preferred older forest. However, there had been little study of owls in areas with forests of intermediate ages, such as in areas like the home range of the Chickahominy owls, where private land predominates. The radio telemetry study of the Chickahominy owls documented an extensive use of young fir stands and hardwood stands that is different than the forest pattern often observed on federal land. The evidence pertaining directly to the Chickahominy owls was far more influential on the court than general behavioral studies from other areas. Ultimately, the court weighed the site-specific evidence in the manner affirmed by the Ninth Circuit in the *Bernal* decision, 204 F.3d 920. This led the court to conclude that these owls have adapted to the existing forest conditions, as shown by their successful breeding and foraging in the area.

Third, the *West Coast* court emphasized the need for a direct link between habitat modification and actual injury or death to a specific animal. The mere fact that the owls used the Unit was not sufficient to prove a violation of the harm rule because there was no strong evidence that death or injury would follow from harvesting the Unit. The *West Coast* decision is the first to rule on the application of the harm regulation to modification of habitat actually used by northern spotted owls.

The decision supports the Supreme Court's view that the harm regulation requires a three-step analysis. First, the habitat modification must be significant. Second, it must significantly impair essential behavioral patterns. Finally, it must result in actual death or injury to an individual member of the species. 46 *Fed. Reg.* 547189-50 (Nov. 4, 1981). Just as habitat modification alone is not a take, significant impairment of essential behavior patterns alone is not a take. The fundamental element to prove harm, as the Ninth Circuit has interpreted in the *Sweet Home* decision, is reasonable certainty that the act will cause "actual death or injury" of a protected animal. The government failed to prove this fact in *West Coast*, and lost the case as a result. ☛