

US EPA ARCHIVE DOCUMENT



United States Environmental Protection Agency
Region 5
Waste, Pesticides, and Toxics Division

Use of Institutional Controls in the RCRA Corrective Action Program

Region 5
March 2000

I am pleased to provide you with guidance on the use of institutional controls at federal lead corrective action sites. This guidance clarifies the application of institutional controls where land use restrictions are necessary to protect human health and the environment. This guidance is the product of a collaborative effort between Region 5 and various stakeholders. Prior to finalizing this guidance, a draft was provided to State Agencies in Region 5, U.S. EPA Headquarters, industry representatives, and environmental and community groups to gain their perspectives. Region 5 carefully considered comments provided, and thanks those who reviewed the draft document. Their comments provided thoughtful insight and guidance to the team responsible for this final product.

With this guidance, Region 5 is recommending that for corrective action projects where EPA is the lead agency for oversight (federal lead sites) it will use administrative orders (e.g., under the authority of sections 7003 or 3008(h) of RCRA) to ensure federal enforceability of institutional controls. We recognize that in limited circumstances States may have other legal mechanisms that allow for federal enforceability of an institutional control. We encourage the States to consider the issues in this guidance in developing their own policies for establishing enforceable institutional controls. At this time, Region 5 believes that the use of other mechanisms would require further legal and technical efforts prior to your being able to effectively use them. Since the corrective action program is moving at an accelerated pace, we have decided to provide you with guidance that you can use immediately. Should the proper conditions present themselves in the future at one of your sites you should remain willing to work in a collaborative effort with the State, affected facility, and the Office of Regional Counsel, to develop and use an alternative State mechanism that ensures timely, reliable, and federally enforceable institutional controls. Nothing in this guidance should be interpreted as affecting the enforceability of actions taken by a State using its various mechanisms to implement institutional controls at State lead corrective action sites.

- original signed by Robert Springer -

Robert Springer, Director
Waste Pesticides and Toxics Division

Purpose and Scope

The purpose of this guidance is to aid project managers in selecting appropriate cases for institutional controls and establishing enforceable mechanisms to ensure the reliability of such controls. Institutional controls are non-engineered, administratively and/or legally enforceable measures that limit human exposure to hazardous waste or hazardous constituents. Institutional controls can serve several purposes, including:

- notifying current and future users about the environmental conditions of the property;
- limiting use of the land (including soil, groundwater, surface water, or sediments) to prevent activities that could result in unacceptable exposures to receptors; and,
- providing access to the Region to verify that the property use remains consistent with the restrictions placed upon it by the institutional control.

Some legal mechanisms, such as EPA consent orders and judicial decrees, that are used to implement and ensure long-term compliance with institutional controls can also:

- provide for the operation and maintenance of engineering controls, and
- require monitoring to ensure the continued effectiveness of engineering controls.

This guidance applies to corrective action cleanups overseen by EPA and conducted pursuant to the Resource Conservation and Recovery Act (RCRA) in six States comprising Region 5, (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin). All of these States have been authorized for certain elements of the corrective action program. This guidance provides:

- a general description of institutional controls;
- a summary of EPA's policy regarding institutional controls;
- the factors that should be considered by the EPA project manager and attorney in determining if institutional controls are appropriate at a RCRA facility; and,
- a description of the mechanisms available for administering and enforcing institutional controls.

This guidance does not address certain issues related to institutional controls, such as designing a tracking system for monitoring the long-term stewardship by the facility, or the financial assurance mechanisms associated with funding these controls. Such issues require separate guidance and proper training on their use.

This guidance is intended solely for the RCRA corrective action program in Region 5 and is not a final agency action. This guidance does not create any rights, duties, obligations, or defenses, implied or otherwise, in any third parties. It does not affect the right of any RCRA facility owner or operator to decline to use an institutional control at its facility. This guidance does not affect State law or policy regarding institutional controls. Region 5 encourages the States to consider the issues in this guidance in developing their own policies for establishing enforceable institutional controls. For

cleanups where the State is the lead Agency, decisions regarding institutional controls will follow State law or policy. EPA project managers will work closely with State agencies to ensure consistency with State requirements. EPA reserves the right to revise this guidance based on our experience gained through implementation. EPA also reserves the right to act in variance to this document.

This document is available at <http://www.epa.gov/region5/rcraca>. If you have any questions regarding this guidance document, you may contact:

Dan Patulski: Waste Management Branch (312) 886-0656

Tamara Ohl: Enforcement and Compliance Assurance Branch (312) 886-0991

Rich Clarizio: Office of Regional Counsel (312) 886-0559

Padma Klejwa: Office of Regional Counsel (312) 353-8917

Table of Contents

Section I: EPA Remedial Expectations and the Use of Institutional Controls [4](#)

Section II: Components of Institutional Controls [6](#)

Section III: Timing [8](#)

Section IV: Considerations for Applicability [9](#)

Section V: Mechanisms of Institutional Controls [12](#)

Section VI: Federal Facilities [16](#)

Section VII: Policy Implementation [18](#)

Appendix I [20](#)

Section I: EPA Remedial Expectations and the Use of Institutional Controls

When does a facility need an institutional control? An institutional control should be considered any time contamination is left in place at a concentration level that may not by itself be protective of human health and the environment. Before the project manager recommends an institutional control, he/she should verify that the control is consistent with EPA remedial expectations.

This guidance addresses the use of institutional controls as part of the remedy selection process at RCRA facilities. Section I presents EPA's long-term goals for the corrective action program. The short-term goal of EPA is to meet the Environmental Indicators (EI) by controlling human exposures to contamination and controlling the migration of contaminated groundwater. More information on the EI's can be found at www.epa.gov/oswer/osw. This section briefly describes expectations outlined in the 1996 Advance Notice of Proposed Rulemaking (*61 FR 19432, May 1, 1996*). The expectations are reiterated in more detail in Appendix I to this guidance. The remedial expectations include:

- returning usable groundwaters to their maximum beneficial uses wherever practicable;
- treatment of principal threat wastes;
- remediating contaminated soils to prevent or limit direct exposure of human and environmental receptors and prevent transfer of contaminants to other media;
- using a combination of treatment, engineering, and institutional controls to achieve protection of human health and the environment; and,
- using institutional controls such as water and land use restrictions primarily to supplement engineering controls as appropriate for short and long-term management to prevent or limit exposure to hazardous waste and constituents. EPA does not expect that institutional controls will often be the sole remedial action. (*61 FR 19448, May 1, 1996*)

Institutional controls should not be considered a substitute for active or permanent corrective measures (e.g., treatment and/or containment of source material, removal and restoration of groundwaters to their beneficial uses). The project manager should evaluate institutional controls against the three threshold criteria and seven balancing criteria listed in Appendix I to determine if they provide the best protection among the remedial alternatives. You should compare the long-term risks and costs associated with leaving contamination in place to the risk reduction and cost of permanent remedies that do not require institutional and engineering controls. This comparison can occur when remedies are evaluated or during the design of interim measures.

Enforceability of an institutional control is essential. The project manager should work with the Office of Regional Counsel to take appropriate action in response to noncompliance with any order requiring the maintenance of institutional controls.

Section II: Components of Institutional Controls

An institutional control can address all aspects of property use and management that are required to ensure protection of human health and the environment from contamination remaining in place.

Institutional control(s) for a facility will, where appropriate:

- Contain a legal description of the property that identifies the geographic area to which the control applies (the entire property may not need to be restricted) and the property tax identification number;
- Identify the name of the property owner and contain a title reference;
- Identify the entities responsible for implementing, monitoring, and enforcing the institutional control;
- Specify the time frame for which institutional controls apply;
- Identify the procedures to be followed during an emergency (such as repairs to utilities, etc.);
- Describe contaminants left in place, and identify risks that such contaminants pose through different exposure scenarios;
- Prohibit any construction or destruction activities that could impair the effectiveness of ongoing remedial actions or engineered controls (e.g., fences, covers, groundwater extraction systems, slurry walls, etc.). Although engineering controls are not institutional controls, the order that requires institutional controls should also specify operation and maintenance activities necessary to ensure that the integrity of the engineering controls are preserved;
- Identify the uses of the property (including groundwater) that are prohibited without performance of additional remedial measures. Prohibited uses could include residential, recreational, or agricultural purposes. Some State programs divide these general uses into sub-categories with specific remedial requirements. Project managers should contact their State counterparts for more information;
- Identify monitoring and reporting requirements (e.g., frequency of scheduled certification from the facility owner/operator that institutional and engineering controls have been implemented and maintained, changes in facility ownership or operation that require notification, etc.) and the entities (i.e., federal, state, or local government) to which the information should be submitted;

- Provide access to EPA to inspect and verify that the facility owner/operator is complying with the terms of the institutional control;
- Identify and establish contingencies if the institutional control fails to sufficiently protect human health and the environment;
- Provide for advance notice to EPA of any property transfer and demonstrate adequate financial assurance for maintaining the institutional control; and,
- Specify procedures for modification and/or termination of the institutional control, subject to EPA's approval.

Each institutional control mechanism will have additional, specific legal requirements. The project manager will consult with the assigned Office of Regional Counsel attorney to determine the applicable specific legal requirements needed to ensure the institutional control is enforceable (i.e., well-defined, required by an enforceable document containing sanctions (typically monetary penalties) in the instance of non-compliance).

Section III: Timing

Institutional controls can be evaluated and established as part of the RCRA Facility Investigation, during design of interim measures, or during the Corrective Measures Study. Region 5 recommends that the project manager and facility owner/operator evaluate the appropriateness of institutional controls early in the process. However, until an enforceable control (See Section V) is in place, the facility should use screening and cleanup levels consistent with unrestricted use of the land. Some examples of how institutional controls can focus various stages of the corrective action process are:

- Institutional controls established at the beginning of the process or during the RFI can focus investigations on collection of data that is consistent with site-specific remedial goals. A facility owner/operator who establishes with EPA an enforceable institutional control can use screening levels (e.g., screening levels developed for industrial and construction workers) consistent with the exposure allowed under the institutional control. EPA recommends that the risk assessment also include an evaluation of cleanup levels that are consistent with residential use. Comparing residential cleanup levels to industrial use cleanup levels will identify the amount of additional work necessary to return the land to unrestricted uses. This comparison may show that the cost to clean up to unrestricted uses is similar to, or less than, the costs associated with long-term maintenance of institutional and engineering controls. Subject to agreement between EPA and the facility owner/operator, institutional controls can be revised following the risk assessment and remedy evaluation to be more or less restrictive. Data quality will need to be reviewed to verify that detection limits are at or below screening or site-specific risk levels for additional exposure pathways (e.g., ecological, residential, recreational, agricultural, etc).
- Evaluation of institutional controls in conjunction with or prior to completion of the corrective measures study will directly affect the selection of potential remedies. If institutional controls are appropriate, but the owner/operator will not consent to establish an enforceable institutional control, the project manager should not propose selection of a remedy that relies on the implementation and maintenance of the institutional control. Instead, the project manager should provide public notice on EPA's proposal for an alternative remedy. At that time, the project manager may include in the public notice the option of implementing the remedy that relies on institutional controls as a "contingent" remedy. That is, EPA would allow for implementation of that remedy provided the facility entered into the required enforceable agreement (e.g., consent order).

If the Region approves the use of institutional controls for a RCRA facility, the owner/operator must enter into a consent agreement with the Region. The consent agreement should be negotiated with an effective date as early as possible so as not to delay corrective action activities. Generally, the components of the institutional control(s) would be discussed in the fact sheet or statement of basis and made part of the public participation process.

Section IV: Considerations for Applicability

Section IV lists the criteria for evaluating whether an institutional control (or combination of institutional controls) will be effective components of a remedial measure. These criteria also help determine if there is a significant potential for institutional controls to fail. If institutional controls are determined not to be reliable and enforceable, they should not be part of a selected remedy. Region 5 expects that the owner/operator will supply much of this information as part of his/her request to establish institutional controls.

1. Remedy Selection

Institutional controls can be an integral part of a remedy provided their use is consistent with the Agency's obligation to protect human health and the environment. Project managers should assess institutional controls as rigorously as any engineered portion of the remedy using the evaluation criteria listed in Appendix I. In general, the Agency prefers remedies that involve treatment to permanently and significantly reduce the toxicity, mobility, or volume of highly toxic or highly mobile waste. The long-term risks and costs associated with leaving contamination in place with an institutional control should be compared to the risk reduction and cost of permanent remedies that do not require long-term institutional controls. The long-term cost of leaving contamination in place includes implementing and maintaining engineering controls and contingencies, if controls fail, and continued monitoring and reporting requirements. The comparison may show that while leaving contamination in place is cheaper in the short-term, its overall cost may exceed the cost of a permanent remedy, thus obviating any need for an institutional control.

2. Future Use of the Property

Will the owner/operator continue to use this property for industrial or commercial purposes? What is the potential for future residential, recreational, or agricultural uses for all or part of the facility? What are the potential risks to these other receptors? The answers to these questions can affect whether leaving contamination in place will be protective with implementation of institutional controls.

Take, for example, a facility located on a lakeshore in a region undergoing residential development. You may determine that an institutional control can provide short-term protection, but is not reliable in the long-term given the potential for residential development. Alternatively, you may decide that institutional controls can ensure protective future use, provided several layers of control mechanisms (e.g. zoning, easements, and consent orders, etc.) are established.

Sources of information about current land use restrictions and future expectations include: zoning laws and maps, local planning commissions and assessments of property development trends in the vicinity of the facility. EPA has specifically cautioned against automatically restricting future land use assumptions by extrapolation of current use or relying solely on designated zoning or industrial use codes. (55 *FR* 19452, *May 1, 1996*). Further information

can be found in:

- *Land Use in the CERCLA Remedy Selection Process (OSWER 9355.7-04, May 25, 1995)*
- *Ground-Water Protection Strategy (Office of Ground-Water Protection, 1984)*
- *Guidelines for Ground-Water Classification Under the [1984] EPA Ground-Water Protection Strategy, Final Draft (Office of Ground-Water Protection, November, 1986)*

3. Ownership of the Property

The present property ownership of the facility should always be known. Is the current owner also the operator of the facility? What is the likelihood that the current owner will be the future owner? It is not uncommon for companies with a long history of owning and operating a facility to reduce operations and either sell the property or lease it to another party. Will the new owner or operator have sufficient resources to maintain controls and take additional actions if site conditions change? The EPA project manager and ORC attorney will need to determine whether the order should include additional respondents to ensure effectiveness of the institutional control.

4. Stakeholder Involvement

Stakeholders will have an opportunity to comment on a proposal to use institutional controls. Public outreach is particularly important where environmental justice concerns exist. You should provide notice directly to state and local governments, natural resource trustees, tribal governments, community and environmental groups, and development and land use planning groups. Involving adjacent and nearby property owners who may be impacted (e.g., groundwater use restrictions for plumes that have migrated off-site) by the institutional control is also a very important component of public involvement.

Community leaders should be contacted when preparing the mailing lists to ensure interested parties receive notice. State and local revenue offices should be included on the mailing list since some institutional controls may change the value of property and thus its tax status. You should work with your state counterpart to identify any applicable State public notice requirements.

5. Contaminant Characterization

The behavior and degree of risk posed by contamination need to be considered because of their impact on the effectiveness and reliability of the remedy. Can exposures to bioaccumulative, persistent, or highly mobile contaminants reasonably be controlled for as long as the contaminants pose risks? Source areas, which can act as reservoirs for contaminants that can migrate to other media or result in direct exposure, are generally not amenable to control by institutional controls alone. Typically, a corrective action order or permit requires a complete contaminant characterization that assesses the length of time that contaminants will pose a threat and requires maintenance of institutional and engineering controls.

6. Financial Assurance

The ability of an owner/operator to fund long-term monitoring and maintenance costs associated with institutional and engineering controls is a critical factor. Financial assurance should also include costs associated with contingency actions if controls fail. Facilities seeking to place use restrictions on the land should provide assurance that sufficient funds are available to monitor and maintain institutional and engineering controls for as long as contaminants remaining in place pose risks that require land use restrictions. We also recommend that owners/operators provide financial assurance for the completion of additional remedial actions in the event the land is subsequently used in a manner that is inconsistent with the institutional control.

Owners/operators should determine, through modeling or other means, the length of time that constituents of concern (including degradation products) will pose unacceptable risks and the cost to maintain controls for that period of time. These evaluations should then be verified through monitoring. Financial assurance may be adjusted in the future to account for changes in site conditions. Failure of an owner/operator to establish adequate financial assurance severely diminishes the reliability of the institutional or engineering control, and may be grounds for denying the owner/operator's request.

In 1986, the Agency proposed financial assurance regulations for corrective action programs. Proposed acceptable mechanisms include trust funds, surety bonds, letters of credit, the financial test, corporate guarantee, and insurance. Further information on mechanisms and cost estimation may be found in *51 FR 37854, October 24, 1986*.

7. Regulatory Compliance

You should review the respondent(s)' history of compliance with State and federal law and agreements with the Agency. This history is an important factor since the respondent(s) will be responsible for long-term performance, including maintaining property use restrictions and engineering controls. A poor compliance record may preclude reliance on institutional controls.

When reviewing the compliance history, consider the gravity and frequency of the violation(s), the time period in which the violations occurred, and actions taken by the owner/operator to correct the violation(s).

8. Scope of Land Subject to Corrective Action

The owner/operator should identify to the EPA project manager and ORC attorney all of the property subject to institutional controls. Where the contamination has migrated off-site, the owner/operator will need to identify the owners of the off-site property and demonstrate that an enforceable institutional control is placed on that property as well.

Section V: Mechanisms of Institutional Controls

A remedy that relies on institutional controls to control exposure to residual contamination should be selected only where the Region believes that institutional controls will be effective and enforceable, both in the short term against the current facility owner/operator and in the long term against potential future property owners. To enhance the over-all effectiveness of institutional controls, project managers should consider “layering” controls (i.e., using multiple mechanisms) to provide overlapping assurances of protection from contamination.

One way to ensure that the current facility owner/operator will comply with the institutional controls is for the facility¹ owner/operator to agree to a written enforceable order which contains the specific requirements for the institutional control² and binds the owner/operator to notify subsequent property owners of the institutional control and to maintain the institutional control after the property transfer.

A. Use of Administrative Orders/Consent Decrees To Bind Current Owner/Operator

EPA Region 5's selection of a remedy which relies on institutional controls should be made only where the facility owner/operator has agreed to a written enforceable order that contains the specific requirements for the institutional control. EPA generally will ensure the federal enforceability of the owner/operator's commitment to maintain and operate the selected institutional control through the use of consent orders and/or judicial consent decrees. Depending upon site specific conditions, EPA may use its consent order authority under Sections 3008(h) or 7003 of RCRA or Section 106(a) of CERCLA. There are other statutory sections such as Section 311 of the Clean Water Act which may also apply depending on the nature of the hazards posed at the facility. For facility owners and operators with a permit or an approved closure/post-closure plan, EPA will require them to enter into a consent order separate and apart from the permit and/or closure/post-closure permit. Similarly, owner/operators subject to voluntary agreements would have to enter into a consent order for the component of the remedy which relies upon institutional controls. EPA would typically enter into the consent order before the permit expires, where there is a permit, and before selection of the remedy.

¹Other persons may have to enter into the agreements. For example, owners of the facility property where the operator of the facility is different from the owner; or adjacent off-site property owners where the contamination has migrated off-site to property not owned by the facility.

²States are encouraged to use their analogous authorities where available when implementing corrective action under permits or orders.

The administrative order will meet site-specific conditions. A model consent order is being developed separate from this guidance. Until that model is developed the project manager and the assigned attorney should consult Section II for guidance on the components of effective institutional controls. Additionally, the consent order should incorporate any appropriate layering of various types of institutional controls deemed necessary.

The consent order must address the following four areas:

(1) Specific controls with which the owner/operator must comply (e.g., industrial-use only restrictions, drinking water prohibitions, etc). These will vary according to the facility. The attorney and project manager may consult Section II to assist them in developing the specifics of their particular institutional control;

(2) Changes in ownership. The order should ensure that subsequent purchasers will be bound by the same institutional controls. As an added layer of protection, the order should clearly state that the Respondent retains the responsibility for the obligations contained in the order, until EPA approves the transfer of those responsibilities to another party (e.g., the prospective purchaser). In addition, the obligations in the order should be written in such a manner that the Respondent will not transfer ownership of the facility without, at a minimum, ninety days prior notice to EPA. The purpose of this notice is to provide EPA with the opportunity to evaluate whether effective institutional controls that “run with the land” have been established or whether a separate order with the purchaser is necessary and appropriate. Finally, the consent order should require appropriate information devices (e.g., deed notices or inclusion on a State registry). The Region will develop its own listing of sites subject to institutional controls. This listing should not be considered a substitute for any registry or recording requirements imposed by a State or local government;

(3) Reservations of rights/covenants not sue³ section of any agreement. The order must ensure that EPA has reserved its ability to proceed against the Respondent for failure to maintain the institutional control. The standard reservations should be adequate provided they allow for EPA to require implementation of the institutional control in addition to any penalties it may seek for failure to comply. EPA should reserve the right to require additional remedial measures where future events (e.g.; change in property ownership) may dictate that the institutional control is no longer appropriate, possible, or enforceable; and

(4) Termination of the consent order. Institutional controls should be considered a long-term monitoring and maintenance obligation. As such, the consent order should provide that adherence to institutional controls is required until EPA determines that such controls are no longer necessary to protect human health or the environment.

³ Covenants not to sue are only available with judicial consent decrees and generally are of such limited scope that they will not be a separate inducement to enter into such agreements.

B. Mechanisms to Inform/Bind Future Property Owners

One of the challenges involved in designating effective and enforceable institutional controls is the issue of subsequent property owners. Fortunately, an array of tools is available to ensure that adequate long-term protection of human health and the environment survives any property transfer. Layering of controls is particularly useful. However, every control may not be appropriate and/or necessary at every site.

Project managers are encouraged to consider these longer-term controls when issuing the order to the current owner. For example, the current owner can be required to record an informational notice in the deed so that future owners will at least be aware of the residual contamination and any use restrictions imposed on the facility. The order can also require the current owner to use best efforts to convey an easement to the local or state government prohibiting residential use of the property.

The mechanisms for imposing long-term institutional controls are often categorized into four general types: informational devices; governmental controls; proprietary controls; and enforcement actions.

Informational Devices

Informational devices provide information or notification. Common examples include State registries of contaminated properties, deed notices, and advisories. Informational devices themselves may often be nonenforceable. For example, deed notices are a common form of institutional control because they effectively inform future owners about the residual contamination and any use restrictions imposed on the facility. However, deed notices, like most informational devices, have no legal force to limit or control/affect land use or activities; they serve a pure notice function and should not be relied upon as the sole institutional control at a site.

Governmental Controls

Governmental controls are usually implemented and enforced by a State or local government and are based on existing or future State or local authorities that restrict property use. Specific examples include restrictions on the use of land and water, zoning restrictions, ordinances, building permits or other permit requirements. Governmental controls can be useful in controlling potential exposure. Their effectiveness, however, is dependent on enforcement by a third party (i.e., state or local government) and the controls can be changed or terminated at any time without the involvement of EPA. For corrective action projects where EPA, Region 5 is the lead Agency, these controls should not be used as the sole institutional control.

Proprietary Controls

Proprietary controls have their basis in private property law. There are numerous controls within this category, including easements and covenants. Controls under this category are unique in that they create legal property interests. In other words, proprietary controls involve legal instruments placed in the chain of title for the property that convey a property interest from the owner (grantor) to a second party (grantee) for the purpose of limiting use or imposing restrictions on land and/or water. An

example of this type of control may be an easement to provide access rights to inspect and monitor. The principal benefit of these types of controls is that they can be made to “run with the land”. This means they are binding on subsequent purchasers of the property (successors in title) and transferable, which may make them more reliable in the long-term than other types of institutional controls.

These types of controls have drawbacks as well. A property owner has many individual rights with respect to his or her property. To illustrate this point, property rights can be thought of as a bundle of sticks, with each stick representing a single right (e.g., one right is the right to collect rents). The terminology, enforceability and effect of each of these rights is largely dependent upon the State or common law of real property. A property owner can convey certain rights (either voluntarily or involuntarily through condemnation) to other entities and keep other rights. If EPA determines that a long-term easement is required to ensure remedy protectiveness, this right would need to be transferred by the property owner to another entity. For the easement to bind subsequent purchasers, some States require that the entity must be an adjacent property owner. This may complicate long-term monitoring and enforcement since the party receiving the right (the grantee) is often not an adjacent property owner. Generally, proprietary controls are advisable when the restrictions on activities are intended to be long-term, permanent, or when other controls are deemed unreliable. EPA’s authority to acquire proprietary controls is not evaluated in this guidance. Consequently, the project manager should consult with the assigned attorney to evaluate whether EPA has the authority to acquire proprietary controls. At the present, for corrective action where EPA is the lead agency, the project manager and the attorney should consider proprietary controls as part of the layering of institutional controls and only in conjunction with an enforcement action.

Enforcement Actions with Institutional Control Components

EPA administrative orders and judicial consent decrees may be used to require and ensure long-term compliance with institutional controls. These enforcement documents can be used where the landowner agrees to limit or allow certain long-term site activities. Although frequently used, certain limitations should be addressed. For example, most enforcement actions do not “run with the land”. This means that the restrictions in the enforceable order/decrees are only binding on the signatories. There are often provisions requiring EPA notification prior to a property transfer in these agreements. However, the property restrictions themselves are not automatically passed at the time of the property transaction. This limitation may be addressed by having either the prior land owner remain responsible to EPA for continued performance and adherence to the institutional control or a separate order negotiated with the subsequent purchaser.

Other references:

The Imminent and Substantial Endangerment Provision of Section 7003 of RCRA
May, 1996

Section VI: Federal Facilities

Federal facilities present unique circumstances and challenges regarding future land use and institutional controls. Project managers and attorneys should refer to additional references listed for further information.

The general rules and policies governing CERCLA (Section 120 (a)(2)) and RCRA (Sections 3004 (u) and (v), 3008 (h) or 7003) cleanups apply with equal force at federal facilities. Although federal and State agencies may consider institutional controls as a component of a cleanup at federal facilities, certain proprietary or governmental controls previously discussed cannot be applied on federal property that is not included in local land registries or subject to local zoning or land use ordinances. Land use on active federal property is typically determined by the base commander, as opposed to zoning designations established by local governments.

The kind of institutional controls potentially available will depend on whether the federal property will remain in federal operation and control, will be transferred to private parties or will remain federally owned but privately operated. Only the General Services Administration (GSA) has the authority to dispose of real property held by the federal government. Therefore, for active federal facilities, any landholding agency wanting to place restrictive covenants on property where ownership is not being transferred must request GSA to dispose of the property rights or delegate its disposal authority. For property being transferred as part of a base closure, the Department of Defense has the authority to restrict property being transferred to the private sector. Since the Department of Energy can transfer property under the Atomic Energy Act, it may also be able to restrict use of the property.

At federal facilities, the Final Decision and Response to Comments in orders or modification to an existing RCRA permit are the primary decision documents under RCRA for implementing the institutional control that are a part of the remedial action. The use of deed restrictions, such as covenants and easements, is not, however, a practical mechanism for enforcing institutional controls on operating federal facilities because federal property is not typically a part of local land registries. Thus, for federal land that will stay in federal ownership and control, alternative ways to institutionalize the restricted uses are needed. Some of the possible alternative mechanisms include:

1. Federal Facilities Agreement (FFA)

The FFA is an enforceable document under CERCLA section 120 and can be used to establish legally binding controls on land use at federal facilities. The FFA is binding on the facility such that any use restrictions specified in the Record of Decision that become incorporated into the FFA will also be enforceable. Its effectiveness comes into question, however, when the federal agency that signed it proposes to transfer the facility.

2. Base Master Plans (BMP)

BMPs are generally developed at military bases to designate land uses for different areas of the base. Such plans could serve as a governmental control that could restrict particular land uses as determined by the Record of Decision. However, BMPs have many limitations (e.g., may be enforced only by the base commanding officer) and should be fully evaluated as to their effectiveness in achieving the goals of the institutional control.

Other references:

Memorandum: Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities

Institutional Controls and Transfer of Real Property Under CERCLA Section 120(h)(3)(A)(B) or C January, 2000.

Memorandum: Assuring Land Use Controls at Federal Facilities, Region 4, April 13, 1998

Section VII: Policy Implementation

The project manager should document that EPA's decision to leave contamination in place and control risks through engineering and institutional controls is consistent with Agency remedial expectations and is protective of human health and the environment. Each of the decision criteria listed in this guidance and Appendix I should be evaluated for each RCRA facility where EPA is the lead agency for corrective action. The owner/operator should provide documentation for the Considerations of Applicability (Section IV) when they propose to EPA remedies that rely on institutional controls.

If the project manager recommends institutional control(s) *concurrently* with EPA's remedy proposal, the Statement of Basis should describe each of the criteria identified in Section IV and Appendix I. If institutional controls are evaluated *prior* to remedy proposal, the project manager and ORC attorney should provide a recommendation to the Branch Chief of the Enforcement and Compliance Assurance Branch or Waste Management Branch.

The public will be given an opportunity to comment on the proposal to use institutional controls. This can be done during public comment when the remedy is proposed in the Statement of Basis. If institutional controls are decided upon prior to remedy selection, a separate public comment period should be scheduled. The Statement of Basis (proposing the remedy) or a fact sheet (when controls are proposed prior to remedy selection) will explain the Region's rationale for proposing the institutional control addressing components set forth in Section II.

After evaluating public comments, the Region will decide on the appropriateness of institutional controls. If institutional controls are determined to be an appropriate component of the remedy, a proposed consent order should be prepared by EPA. If corrective action is being performed under an existing order, the project manager and attorney should review the order to determine if any modifications are necessary to require the institutional controls. The proposed order/order modification should then be sent to the owner/operator for signature. After signing the order, the owner/operator should return the order to EPA. Approval of institutional control is documented in the final decision and response to comments. The final decision and the order should be signed at the same time. The order becomes effective upon the date of EPA's signature.

Appendix I

Remedial Expectations

and

Remedy Selection Criteria

Appendix I

EPA Expectations
for
Final Corrective Action Remedies

These expectations were taken from the May 1, 1996, Advance Notice of Proposed Rulemaking (ANPR) (61 FR 19432). Many of these expectations were first articulated in the discussion of remedy selection at CERCLA sites in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 430(a)(1)). CERCLA and RCRA corrective action criteria address the same types of considerations and should generally result in similar remedies when applied to similar site-specific conditions.

1. EPA expects to use treatment to address the principal threats posed by a site whenever practicable and cost effective⁴. Contamination that represents principal threats for which treatment is most likely to be appropriate includes contamination that is highly toxic, is highly mobile, or cannot be reliably contained, and that would present a significant risk to human health and the environment should exposure occur.
Helpful References:
 - *A Guide to Principal Threat and Low Level Wastes (OSWER Directive 9380.3-06FS, November 1991)*
 - *The Role of Cost in the Superfund Remedy Selection Process (EPA 540/F-96/018, September 1996)*
2. EPA expects to return usable groundwaters to their maximum beneficial uses wherever practicable, within a time frame that is reasonable given the particular circumstances of the site. When restoration of groundwater is not practicable, EPA expects to prevent or minimize further migration of the plume, prevent exposure to the contaminated groundwater and evaluate further risk reduction. EPA also expects to control or eliminate surface and subsurface sources or effects of groundwater contamination.
Helpful References:
 - *Region 5 RCRA Subtitle C Corrective Action Risk Assessment Guidance (1998)*
 - *Corrective Action for Releases from Hazardous Waste Management Units; Proposed Rule (Federal Register, May 1, 1996)*
 - *Guidance for Evaluating the Technical Impracticability for Ground-Water Restoration, (Directive 9234.2-25, September, 1993).*
3. EPA expects to use engineering controls, such as containment, for wastes and contaminated media which can be reliably contained, pose relatively low long-term threats, or for which treatment is impracticable.

⁴ The term “cost-effective” does not necessarily imply least costly.

4. EPA expects to use a combination of methods (e.g., treatment, engineering and institutional controls), as appropriate, to achieve protection of human health and the environment.
5. EPA expects to use institutional controls such as groundwater and land use restrictions primarily to supplement engineering controls as appropriate for short- and long-term management to prevent or limit exposure to hazardous wastes and constituents. EPA does not expect that institutional controls will often be the sole remedial action.
6. EPA expects to consider using innovative technology when such technology offers the potential for comparable or superior treatment performance or implementability, less adverse impact, or lower costs for acceptable levels of performance when compared to more conventional technologies.
7. EPA expects to remediate contaminated soils as necessary to prevent or limit direct exposure of human and environmental receptors and prevent the transfer of unacceptable concentrations of contaminants (e.g., via leaching, runoff or airborne emissions) from soils, including subsurface soils, to other media.

With regard to media cleanup standards, EPA's risk reduction goal is to reduce the threat from carcinogenic contaminants such that for any medium, the excess risk of cancer to an individual would be between 10^{-6} to 10^{-4} . For non-carcinogens, the hazard index should generally not exceed 1. EPA's preference is to select remedies that are at the more protective end of the risk range. Therefore, 10^{-6} should be used as the point of departure when determining site-specific cleanup standards. Final cleanup standards should consider factors such as exposure frequency, receptor or ecosystem sensitivity, uncertainty, or technical limitations.

Remedy Selection Criteria

The 1996 ANPR reaffirmed the appropriateness of the remedy selection criteria proposed in 1990. (*61 FR 19449, May 1, 1996*). A summary of the remedy selection criteria is included in this section along with references that provide additional information. Another helpful reference is the National Contingency Plan. RCRA and CERCLA remedy selection criteria are similar and the National Contingency Plan and its preamble explain the criteria in greater detail.

Remedies will be evaluated in two phases. During the first phase, potential remedies are screened against the following threshold criteria. Remedies must:

1. Protect human health and the environment
2. Attain media cleanup standards
3. Control the source(s) of releases so as to reduce or eliminate, to the extent practicable, further releases of hazardous wastes (including hazardous constituents) that might pose threats to human health and the environment.

Remedies that meet the threshold criteria are then compared to the following balancing criteria:

1. Long term reliability and effectiveness. This pertains to the risk remaining at the facility after completion of a remedial action. It considers:
 - a. the level of threat posed by hazardous constituents remaining in place and the adequacy and reliability of any engineering or institutional controls to manage those risks, and
 - b. the risk associated with treatment residuals compared to the risk associated with untreated waste.
2. Reduction of toxicity, mobility, or volume of wastes. This pertains to the preference for remedies which, wherever practicable, involve treatment that permanently and significantly reduce the toxicity, mobility, or volume of wastes that pose principal threats. (*See also: "A Guide to Principal Threat and Low Level Wastes" (OSWER Directive 9380.3-06FS, November 1991)*)
3. Short-term effectiveness. This criterion evaluates the effects of the remedial alternatives on human health and the environment during their implementation. It considers factors such as:
 - a. dust from excavation
 - b. transportation of hazardous materials
 - c. air quality impacts
 - d. potential impacts to the environment from remedy construction and implementation and the reliability of mitigation measures to prevent or reduce impacts.
4. Implementability. This addresses the technical and administrative feasibility of implementing an alternative and the availability of services and materials.
5. Cost. Cost effectiveness is determined by comparing the costs and overall effectiveness of alternatives to determine whether the costs are proportional to the effectiveness achieved. Criteria used to evaluate cost effectiveness include long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, and short-term effectiveness. (*See also: The Role of Cost in the Superfund Remedy Selection Process (EPA 540-F-96-018, September 1996)*)

Recently, EPA Headquarters has added two additional balancing criteria :

6. Community acceptance. EPA encourages public involvement activities beyond the formal requirements found in the regulations, especially when it fosters an early and open dialogue with potentially affected parties. Efforts should be taken to involve interested parties in activities throughout the corrective action process, instead of only at junctures specified in the regulations. Public participation can also be very beneficial when provided at the initiation of corrective action, the selection of significant interim measures (as appropriate),

prior to remedy proposal, and at the completion of corrective action. (*See also: RCRA Public Involvement Manual, EPA530-R-96-007, June 1996*)

7. State acceptance. State acceptance of the proposed action should be a very important consideration in EPA's actions. Frequent coordination with State agencies that have an interest in the action is highly recommended.

Other References:

Region 5 RCRA Subtitle C Corrective Action Risk Assessment Guidance 1998

Rules of Thumb for Superfund Remedy Selection, EPA-R-97-013, August 1997

Coordination between RCRA Corrective Action and Closure and CERCLA Site Activities, OSWER Directive 9200.0-25, September, 24, 1996

Risk Assessment Guidance for Superfund:

Volume I - Human Health Evaluation Manual (Parts A, B, and C) EPA/540/1-89/002

Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments

Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites, OSWER Directive 9200.4-17P, April 21, 1999