

Appendix A: DEC CC SMP Acceptance Letter. June 21, 2011 email from James Doyle. EPA Guidance on Institutional Controls

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Alexander B. Grannis
Commissioner

APR 29 2010

Kelly Morris
Executive Director
City of Glen Cove Industrial Development Agency
City Hall
9 Glen Street
Glen Cove, NY 11542

Re: Captain's Cove Condominium Site
Site No. 130022
Glen Cove (C) Nassau County
Site Management Plan

Dear Ms. Morris:

The New York State Department of Environmental Conservation Division of Environmental Remediation in conjunction with the New York State Department Health has completed the review of the Captain's Cove Condominium Site (130032) Draft Site Management Plan (SMP) dated April 14, 2010. The Department's approval of the SMP is contingent upon USEPA Region 2 approval. The USEPA will be providing their comments under a separate letterhead.

If you have any questions regarding our comments, please contact me at (518) 402-9622 or javavond@gw.dec.state.ny.us.

Sincerely,

Joseph A. Yavonditte, P.E.
Chief, Remedial Section B
Remedial Bureau A



From: Doyle.James@epamail.epa.gov [mailto:Doyle.James@epamail.epa.gov]

Sent: Tuesday, June 21, 2011 11:29 AM

To: Warren, Charles S.

Subject: Re: FW: Re:

We've typically been added as a third party beneficiary to the standard state easement so that we have rights to enforce the requirements of the remedy. But we are not signatories and do not slow down the process.



Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites

1. PURPOSE

The purpose of this guidance is to provide site managers of contaminated sites, site attorneys, and other interested parties

with information and recommendations that should be useful for planning, implementing, maintaining, and enforcing

institutional controls (ICs) for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund); Brownfields; federal facility; underground storage tank (UST); and Resource Conservation and Recovery Act (RCRA) site cleanups. It addresses some of the common issues that may be encountered and provides an overview of EPA's policy regarding the roles and responsibilities of the parties involved in various aspects of planning, implementing, maintaining, and enforcing ICs. A thorough understanding of the concepts and sources in this and related documents referenced here should help ensure that ICs are properly implemented and operate effectively during their lifespan.

This is the second in a series of guidance documents on the use of ICs. The first document, *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*, September 2000 (OSWER 9355.0-74FS-P, EPA 540-F-00-005) (*A Site Manager's Guide to ICs*), provides guidance for identifying, evaluating, and selecting ICs.

¹ The terms "site manager" and "site attorney," as used in this document, refer to personnel from the lead agency involved in a CERCLA (remedial and removal), Brownfields, federal facility, UST, or RCRA cleanup project. Where the lead agency is a Federal agency other than the EPA, EPA and the Federal agency may share some site manager/site attorney responsibilities or EPA may retain them independently depending on the responsibility under any of the five cleanup programs. The term "site" is used generically in this guidance to also represent areas of contamination managed under all five of these cleanup programs. The terms "CERCLA," and "Superfund," generally include both remedial and removal sites. In addition, the term "responsible party" as used in this document is intended to mean a person or entity with cleanup or IC responsibilities under the various cleanup programs listed above. Similarly, because CERCLA removal actions are generally discrete, short-term actions, EPA generally relies on state agencies to plan, implement, maintain, and enforce ICs following a removal action.

² The term "maintenance" refers to those activities, such as monitoring and reporting, that ensures ICs are implemented properly and functioning as intended.

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This document addresses crosscutting multi-program IC

issues, while recognizing that there are some differences among the cleanup programs. It defines ICs as used in this document, describes their role in contaminated site cleanups, and discusses four general life cycle stages — planning, implementing, maintaining, and enforcing ICs. References to additional guidance documents including those mentioned in the text of this document are included in Appendix A. This

³ This document provides guidance to the Regions on how EPA generally intends to plan, implement, maintain, and enforce institutional controls as part of a cleanup project. The guidance is designed to help promote consistent national policy on these issues. It does not, however, substitute for CERCLA, RCRA, or EPA's regulations, nor is it a regulation itself. Thus, it does not impose legally binding requirements on EPA, States, or the regulated community, and may not apply to a particular situation based upon the circumstances. EPA, State, tribal, and local decision-makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. Any decisions regarding a particular facility will be made based on the applicable statutes and regulations.

document is designed to provide general guidance and does not include an exhaustive list of considerations.

Regions and authorized states are encouraged to coordinate among different tribal and government agencies and consult with the local community. Legal requirements for maintaining ICs and community acceptance of the need for ICs to provide for protection from residual waste and the land use limitations that can go along with ICs, are often important to the long-term effectiveness of ICs.

Assistance with ICs is available from EPA Headquarters staff in the Office of Superfund Remediation and Technology Innovation (OSRTI), the Office of Emergency Management (OEM), the Office of Brownfields and Land Revitalization (OBLR), the Office of Site Remediation Enforcement (OSRE), the Office of Resource Conservation and Recovery (ORCR), the Office of Underground Storage Tanks (OUST), the Federal Facilities Restoration and Reuse Office (FFRRO), the Federal Facilities Enforcement Office (FFEO), the Office of General Counsel (OGC), and IC Coordinators in the EPA

Regional offices

Typical Key Activities in the IC Life Cycle

- Planning** may include activities leading up to the establishment of an IC. It can include an evaluation of the type of IC contemplated, potential instruments that might be used to implement the selected IC, potential parties who will be responsible for the various activities, criteria for termination of the ICs, issues that might impact the effectiveness of the ICs, and estimated costs and funding sources.
- Implementing** may include activities undertaken to put the ICs in place including drafting and signing the specific documents necessary to establish the IC, and arranging for any technical and legal support that may be needed for monitoring and reporting. ICs may be implemented at any stage in the cleanup process.
- Maintaining** includes both monitoring and reporting which are generally conducted to routinely and critically evaluate ICs to determine whether the IC instrument remains in place and whether it meets the stated objectives and performance goals.
- Enforcing** can include actions taken to address ICs that have been breached or improperly implemented, monitored, or reported. IC enforcement can involve a range of activities, including informal communications to seek voluntary compliance to more formal steps, when appropriate.

2. DEFINITION AND ROLE OF INSTITUTIONAL CONTROLS

For purposes of this document, EPA defines ICs as non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a response action.⁴ ICs are typically designed to work by

limiting land or resource use or by providing information that helps modify or guide human behavior at a site. Some common examples of ICs include zoning restrictions, building or excavation permits, well drilling prohibitions, easements, and covenants. ICs are a subset of Land Use Controls (LUCs). LUCs include engineering and physical barriers, such as fences and security guards, as well as ICs. The federal facility program may use either term in its decision documents.

As response components, ICs are designed to achieve the precise substantive restrictions articulated in the decision

documents that are needed at a site to achieve cleanup objectives. The evaluation of whether an IC is needed at a site is a site-specific determination. Regions and authorized states should consider whether the site meets unlimited use and unrestricted exposure (UU/UE) as one of the factors in deciding when an IC is appropriate at a site. UU/UE is generally the level of cleanup at which all exposure pathways present an acceptable level of risk for all land uses.

Regions or authorized states should provide adequate opportunities for public participation (including potentially affected landowners and communities) when considering appropriate use of ICs. Those opportunities should include providing appropriate notice, and opportunities for comment, particularly in the Proposed Plan and other steps in the CERCLA cleanup process. Regions or authorized states should consider the impacts of the IC on current and reasonably anticipated future land uses, and should maintain a solid administrative record. ICs should be carefully evaluated, selected, and narrowly tailored to meet the cleanup objectives. As an example, a response selecting a capped landfill may require an IC. To ensure protection of both the engineering component and human health and the environment, it may be necessary to prohibit activities that compromise the response

⁴ The words "response action" or "response" are used to include remedial and removal actions under CERCLA and similar actions under other programs. The NCP provisions for CERCLA removal actions address ICs through a particular process (i.e., post-removal site controls, such as ICs, are typically implemented following removal actions, not as part of removal actions). Generally, this guidance attempts to distinguish removals from other response actions, including CERCLA remedial actions or responses under other programs covered by this guidance, through use of the term "remedy" or "remedial action."

⁵ In cases where EPA or authorized state determines that "no action" is needed under CERCLA, the decision document should document the assumptions upon which the remedy is based. If conditions at the site change, then EPA can assert its authority to later require a response, including ICs.

action and/or result in exposure to humans. Thus it may be appropriate to prohibit heavy machinery usage on or near the capped area, while allowing light recreational uses (e.g., soccer fields). The relevant decision document should clearly articulate the substantive restrictions (e.g., groundwater shall not be used for human consumption) needed to address the exposure pathways and the risks necessitating ICs.

Definition and Role of Institutional Controls

- Role of ICs (Section 2.1)
- Types of ICs (Section 2.2)
- Program-specific Role of ICs in Cleanups (Section 2.3)

2.1 Role of ICs

ICs may be necessary to ensure protectiveness and/or to protect a remedy. If any cleanup options being evaluated leave waste in place, ICs should be considered to ensure that unacceptable risk from residual contamination does not occur. Cleanup actions such as capping waste in place, construction of containment facilities, monitored natural attenuation, and long-term pumping and treating of groundwater, may leave residual contamination on site where restrictions provided by ICs to supplement the engineering controls can help ensure protection of human health and the environment. ICs, where appropriate, can be used in the context of either short-term temporary site solutions (e.g., restoration responses that will not leave waste in place above unacceptable levels upon completion) or long-term permanent solutions (e.g., containment responses that will leave waste in place in perpetuity).

As a site moves through the response selection process, site managers and site attorneys should collect information and develop assumptions about the reasonably anticipated future land use (for CERCLA-specific guidance, see *Land Use in the CERCLA Remedy Selection Process*, OSWER 9355.7-04, May 1995). Site managers and site attorneys should consider the reasonably anticipated future land use during response selection and take it into account when selecting ICs and drafting IC language in decision documents. Furthermore, site managers and site attorneys should clearly and explicitly document reasonably anticipated future land use assumptions upon which the response action rests.

The site manager and site attorney should discuss reasonably anticipated future uses of the site with local land use planning authorities, local and state officials, the public, tribes and other federal agencies as appropriate, as early as possible during the scoping phase of the Remedial Investigation/ Feasibility Study (RI/FS) for CERCLA or RCRA Facility Investigation/ Corrective Measures Study (RFI/CMS) for RCRA. At sites where any media will not be cleaned up to a level that supports UU/UE, the site manager and site attorney should discuss any IC instruments (in addition to active response measures) that may be appropriate, taking into account legal

implementation issues, jurisdictional questions, the impact of layering ICs, and reliability and enforcement concerns. It is also important for the site manager to recognize that, in addition to restricting certain land uses, ICs can also be used to restrict or modify specific activities at sites (e.g., fishing prohibitions).

2.2 Types of ICs

For purposes of this guidance, ICs are divided into four categories: proprietary controls, governmental controls, enforcement and permit tools with IC components, and informational devices. Within each category, there are a number of instruments that may be employed. The following paragraphs summarize each category of ICs and each are discussed in Sections 3 through 9 as they relate to four stages of the IC life cycle (planning, implementing, maintaining, and enforcing ICs).

Proprietary controls are generally created pursuant to state and tribal law to prohibit activities that may compromise the effectiveness of the response action or restrict activities or future resource use that may result in unacceptable risk to human health or the environment. The most common examples of proprietary controls are easements and covenants. Many states have enacted statutes addressing the implementation and long-term effectiveness of proprietary controls. One model that has been developed is the Uniform Environmental Covenants Act (UECA)⁶, which can be adopted as is or in modified form by states to provide advantages over traditional common law proprietary controls.

Governmental controls impose restrictions on land use or resource use, using the authority of a government entity. Typical examples of governmental controls include zoning; building codes; state, tribal, or local ground water use regulations; and commercial fishing bans and sports/recreational fishing limits posed by federal, state and/or local resources and/or public health agencies. In many cases, federal landholding agencies, such as the Department of Defense, possess the authority to enforce ICs on their property. At active federal facilities, land use restrictions may be addressed in Base Master Plans, facility construction review processes, facility digging permit systems, and/or the facility well permitting systems.

Enforcement and permit tools with IC components are legal tools, such as administrative orders, permits, Federal Facility Agreements (FFAs) and Consent Decrees (CDs), that limit certain site activities or require the performance of specific activities (e.g., to monitor and report on an IC's effectiveness). They may be issued unilaterally or negotiated.

⁶ UECA was developed by the National Conference of Commissioners on Uniform State Laws. <http://www.environmentalcovenants.org/ueca>

Informational devices provide information or notification to local communities that residual or contained contamination remains on site. As such, the site manager and site attorney should make sure to provide language that clearly conveys the purpose of the informational device. Typical informational devices include state registries of contaminated sites, notices deeds, tracking systems, and fish advisories.

The four categories of ICs described above are typically available for CERCLA, RCRA, Brownfields, federal facilities, and UST cleanups. However, some of the individual instruments may not be available for all site types. For example, county zoning is typically not available at an active federal facility, and base master plans are typically no longer relevant at transferring federal facilities. In addition, more than one category of IC can be used to ensure a given objective is fully addressed (see Section 3.3).

2.3 Program-specific Role of ICs in Cleanups

Most cleanup programs use ICs, and the challenges of planning, implementing, maintaining and enforcing ICs may be similar across the programs, with some differences at active federal facilities. Generally, under each program, site managers and attorneys should fully evaluate ICs during the development of cleanup alternatives and plan for the implementation, maintenance and enforcement challenges early in the cleanup process. However, it may be important to recognize the program-specific differences in the processes, authorities and responsibilities for planning, implementing, maintaining, and enforcing ICs.

This guidance illustrates some of the program-specific factors that should be considered. It is not intended to be an exhaustive list of the requirements and practices in each cleanup program. It highlights key crosscutting principles rather than enumerating the program-specific variations. Although the cleanup programs do have important differences, the cleanup objectives are similar in that they use ICs in implementing cleanup decisions that are protective of human health and the environment.

CERCLA. Under the National Contingency Plan (NCP), the remedy selection process under CERCLA is guided by several expectations. These include: 1) treatment should be used wherever practicable to address principal threat wastes⁷; 2)

ground water should be returned to its beneficial use wherever practicable in a reasonable time frame ; and 3) ICs should

⁷ Principal threat wastes generally are source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. For more information, please see *A Guide to Principal Threat and Low Level Threat Wastes*, November 1991. Office of Emergency and Remedial Response (OERR) 9380.3-06FS.

⁸ For more information on remedy selection see *Rules of Thumb for*

Superfund Remedy Selection, August 1997. EPA 540-R-97-013 OSWER 9355.0-69

supplement engineering controls to prevent or limit exposure, but ICs normally "shall not substitute for active response measures."⁹ Thus, ICs are expected to play an important role by minimizing the potential for human exposure and protecting engineered remedies,¹⁰ but they are not intended to be a way "around" treatment or ground water restoration. In Under the NCP, ICs are not to be used as the sole remedy unless active response measures are determined to be impracticable.¹¹ An IC-only remedy is considered a "limited action" and as such is not the same as a "no action" remedy decision. In cases where EPA determines that "no action" is needed under CERCLA, the decision document should state that the "no action" decision does not preclude EPA from reasserting its authority to later require a response, including ICs.

The use of ICs following Fund-financed removal actions is discussed in previous EPA guidance that addresses post-removal site controls (PRSCs) (*Policy on Management of Post-Removal Site Control*, OSWER 9360.2-02, December 1990). Generally, Regions should treat ICs like PRSCs.¹² The NCP states that *to the extent practicable* (emphasis added) provision for PRSCs following a Fund-financed removal action at both NPL (National Priorities List) and non-NPL sites is encouraged to be made prior to the initiation of the removal action. Such control includes actions necessary to ensure the effectiveness and integrity of the removal action after the completion of the on-site removal action (40 CFR § 300.415(l)). Such controls may be conducted by state, tribal, or local governments; potentially responsible parties (PRPs); or EPA's remedial program for some federal-lead Fund-financed responses at NPL sites upon completion of the removal action.¹³ EPA encourages the Regions to coordinate with the state, local governments, and/or community groups prior to the initiation of the removal action, to seek commitments for conducting PRSC, and to notify the state of any recommendation or decision regarding the need for ICs.

Further information to assist states and EPA with the transition of responsibilities from the EPA removal program to the state following an EPA removal action is provided in *Coordination*

⁹ These expectations appear in 40 CFR § 300.430(a)(1)(iii).

¹⁰ Regulations that define protectiveness may include requirements for restricting land use in certain situations. These may be determined on a site-specific basis to be an applicable, or relevant and appropriate requirement under CERCLA.

¹¹ See 40 CFR § 300.430(a)(1)(iii)(A), (B), (C), and (D).

¹² Unlike ICs, PRSC can include a broader array of items such as site maintenance activities, repairs, O&M, and environmental monitoring.

¹³ It is important to note that EPA does not use the Fund to pay for IC monitoring or enforcement at removal sites. CERCLA § 104(c)(3) requires states to pay for or ensure the payment of all future routine O&M following Fund-financed remedial actions.

of *Federal Removal Actions and State Remedial Activities, Association of State and Territorial Solid Waste Management Officials (ASTSWMO)*, 2007.

RCRA. The use of ICs for RCRA cleanups is discussed in a 1996 Advance Notice of Proposed Rulemaking (ANPR) for corrective action for releases from solid waste management units (EPA 1996), pages 19,448-19,464; *Final Guidance on Completion of Corrective Action Activities at RCRA Facilities ("Corrective Action Completion Guidance")*, 68 FR 8,457-8,764 (February 25, 2003) and an EPA memorandum titled *Ensuring Effective and Reliable Institutional Controls at RCRA Facilities*, June 2007.

Generally, under RCRA, ICs are included as components of the corrective action and/or post-closure care requirements at a facility, and as such may be incorporated into a permit or an order. The Corrective Action Completion Guidance discusses issues associated with completing corrective actions at RCRA facilities, and provides for two types of completion determinations: (1) Complete with Controls; and (2) Complete without Controls. The Corrective Action Complete with Controls determination may be appropriate at facilities where, among other requirements, all that remains is performance of required Operations and Maintenance (O&M) and monitoring actions, and/or compliance with and maintenance of any ICs. Facilities, or portions of facilities, that are not conducting cleanup as part of corrective action may still have cleanup and IC requirements as part of their facility post-closure care permit requirements. RCRA permits and orders can be used to restrict the use of a property by the current facility owner/operator and/or require that the owner operator implement, maintain and enforce proprietary controls, as needed. For example, EPA-issued orders under RCRA § 3008(h) or § 7003 may require, or prohibit, certain activities at the facility by the current facility owner/operator, and also require as part of corrective action that proprietary and/or governmental controls are used to ensure long-term protectiveness. States may be authorized to implement either or both of the corrective action or base regulatory programs under RCRA and as such may develop their own approaches for cleanup and ICs. For more information on remedial action selection under RCRA see the ANPR, page 19432.

Federal Facilities. EPA's FFRRO and FFEO have issued guidance on describing and documenting ICs in federal facility response actions in Records of Decision (RODs), remedial designs (RD), and remedial action work plans (RAWP) in the *Sample Federal Facility Land Use Control ROD Checklist with Suggested Language (2006)*, which provides language for creating enforceable LUC requirements. The LUC Checklist includes sample language for ICs to include in a ROD, RD, RAWP, or other post-ROD document.

Because some federal agencies may have somewhat different procedures, it is important when dealing with federal facility issues to coordinate with FFRRO and FFEO and the specific federal agency in question.

Brownfields and UST Sites. State and local governments often define the cleanup levels at Brownfields and UST sites. The site manager and site attorney are encouraged to work together to make sure that the types of ICs used are consistent with the level of cleanup, and the proposed re-use of the sites.

3. PLANNING FOR INSTITUTIONAL CONTROLS

Full life-cycle planning (i.e., planning, implementing, maintaining, enforcing, modifying if necessary, and terminating) is recommended to ensure the long-term durability, reliability, and effectiveness of ICs. Many problems experienced by practitioners using ICs can be avoided by critically evaluating and thoroughly planning for the entire IC lifespan early in the response selection and design process.¹⁴

Site managers and site attorneys should seek input from state, tribal, and local governments, responsible parties, affected communities, and other stakeholders during the response selection process in order to ensure that the most appropriate response, including IC(s), is selected. Early cooperation and coordination among these parties with IC planning activities can be critical to the long-term stewardship at a site. Long-term protectiveness at the site often depends on compliance with the ICs to assure the remedy continues to function as intended.

It may be beneficial for state, tribal, and local governments to work with, and reach a common understanding¹⁵ with, the responsible parties and other stakeholders about various IC roles and responsibilities. This common understanding will likely vary depending upon whether federal, state, and/or local authority is used. Whenever possible, Regions should document in writing any arrangements made between parties with responsibilities for IC implementation, maintenance, and enforcement. Existing state and local programs may provide a good framework or foundation for ICs. The following are additional considerations that may be important in evaluating and planning for the IC life cycle.

¹⁴ In addition to the remedy selection process, ICs may also be chosen as part of a non-time critical removal action and should be evaluated as part of the Engineering Evaluation/Cost Analysis Study (EE/CA) under CERCLA.

¹⁵ Parties may be able to reach a common understanding regarding their respective IC roles and responsibilities through various mechanisms that may be available under State law (e.g., a Memorandum of Understanding, Administrative Order on Consent, contract, or enforceable agreement).

Planning for Institutional Controls

- Selection of ICs (Section 3.1)
- Determining Which Legal Tools to Apply (Section 3.2)
- Layering (Section 3.3)
- IC Implementation and Assurance Plans (Section 3.4)
- Cost Estimation (Section 3.5)
- Funding (Section 3.6)
- Community Involvement (Section 3.7)
- Capacity for Implementing and Managing ICs (Section 3.8)

3.1 Selection of ICs

As part of a remedial action, evaluation and selection of ICs should generally follow a process similar to other remedy components. This typically includes an evaluation of the substantive restrictions on the use of property that may be needed to protect engineering controls and human health and the environment. Site managers and site attorneys should also evaluate the capability and capacity of the local governmental (or other) entities that will be responsible for implementing, maintaining, and enforcing the potential ICs (see Section 3.8). In parallel, they should engage with communities to ensure the community is fully aware of ICs under consideration and seek community input (see Section 3.7).

A preliminary IC evaluation should typically be included as part of site investigation efforts. These may include, for example, a RI/FS developed during CERCLA remedial actions; an Engineering Evaluation/Cost Analysis study

(EE/CA) in CERCLA non-time critical removal actions; and in similar Brownfields and UST investigations and decision documents.

Under CERCLA, the proposed restriction should normally be identified in the Proposed Plan, for notice and opportunity to comment by potentially affected landowners and the public. ICs are typically then selected and memorialized in the ROD; generally they are implemented through various types of legal instruments (e.g., an easement). When evaluating different types of IC instrument(s), Regions should normally consider: (1) what are the basic use restrictions needed to ensure that the response actions remain protective and effective, and what types of IC instrument(s) could achieve those restrictions (i.e., what are the potential routes of exposures and how would the IC instrument(s) help minimize those risks)? (2) what tools and strategies are potentially available and what are their legal and practical limits (e.g., are IC lifecycle costs prohibitive)? and, (3) who will ultimately be responsible for activities through each phase of the lifespan of the IC?

For emergency and time-critical removals, EPA, states, or responsible parties should conduct a preliminary IC evaluation as early in the response process as possible. Before

commencing a CERCLA removal action, EPA should discuss with the State and/or PRPs the need for ICs following a removal action, and seek a written commitment that the State and/or PRP will assume responsibility for ICs at the site (*Policy on Management of Post-Removal Site Control*, OSWER 9360.2-02, December 1990). EPA may consider requiring an IC in the removal decision document (i.e., action memorandum) when the removal action does not result in UU/UE, especially when EPA will not likely initiate a remedial action upon the completion of the removal action.

In RCRA Corrective Action cleanups, ICs should be evaluated as early as possible, such as when contamination is first discovered at the facility or during the RFI. ICs should be more fully evaluated as part of the CMS or equivalent, or during the design of any interim measures for the facility. In cases where EPA or the State uses performance standards or a similar approach, or in less complex sites, the submission or approval of a formal CMS might not be required. However, ICs should still be evaluated as early as possible under these alternative approaches. Typically, at Corrective Action facilities, the facility owner/operator recommends a response action based on the CMS or equivalent, the lead agency evaluates the response action recommendation and decides what response to propose for public comment and, with owner/operator and public input, makes the final response selection, typically through a permit or order. Each step in this remedy evaluation and selection process provides an opportunity to evaluate and plan for the full life cycle of any ICs.

3.2 Determining Which Legal Tools to Apply

The site attorney should carefully examine state and local laws relevant to the ICs being considered. To help ensure a thorough evaluation, this examination should normally be done as a standard practice during the identification and analysis of the response action. The examination typically occurs during the Superfund FS for remedial actions, the EE/CA process for Superfund non-time critical removal actions, the RFI/CMS process during the RCRA corrective action and permitting processes or the equivalent closure process under Brownfields and UST. Some of the key considerations for this examination are:

- Based on an early evaluation of land title records, are proprietary controls durable?
- Who has the legal authority for implementing and enforcing proprietary controls?
- Who can hold a property interest (i.e., be the grantee) for a proprietary control?

¹⁶ Some State and local laws and regulations relating to land use may not be enforceable on federal facilities.

- Which state, tribal, or other agency has the legal authority and willingness to accept the transfer of an interest in real property?
- Can real property law in the jurisdiction be used to implement the selected IC in a way that will make it binding on future land owners (i.e., "run with the land") and function in perpetuity, if necessary?
- Are there any restrictions on the use of appurtenant easements (i.e., an easement, or interest, created to benefit an adjoining property) versus in gross easements (interest created was not for the benefit of a particular adjoining property)?
- Are there state laws that authorize ICs (e.g., whether the state has adopted UECA, and what role is allowed under that statute for EPA)?
- What are the limits of the local government zoning and permitting authority?
- Which state and/or local agencies have the legal authorities to control the potential exposure points (e.g., commercial fishing, market place, restaurant, sport/recreational/subsistence fishing)?
- Do these regulatory agencies actively enforce existing regulations?

The specific provisions of ICs usually depend on the specific site conditions as well as the type of legal instruments available.

3.3 Layering

Often ICs are more effective if they are layered or implemented in series. Layering can involve using different types of ICs at the same time to enhance the protectiveness of the response action. For example, layering governmental controls and informational devices is a common approach used at sediment sites to control human health exposures through eating contaminated fish and/or shell fish. Although

layering can have its advantages as an IC strategy, site managers and site attorneys should evaluate whether layering may lead to misunderstandings over accountability or to an unnecessarily restrictive response (e.g., preventing reuse) if ICs are not narrowly tailored to meet the response objectives. The layering of ICs and extent of ICs should be commensurate with the amount, concentrations, toxicity and other characteristics of the residual waste. Site managers and site attorneys should also consider informing the entity responsible for maintaining a particular IC that layering does not diminish

the importance of its responsibilities. For an additional explanation of layering, see *A Site Manager's Guide to ICs*.

3.4 IC Implementation and Assurance Plans

To ensure effective implementation of ICs, we recommend using an IC Implementation and Assurance Plan (ICIAP).¹⁸

Regions generally should include an ICIAP, or a reference to it, in the final action decision document and site O&M plan. An ICIAP is designed to systematically (a) establish and document the activities necessary to implement and ensure the long-term stewardship of ICs, and (b) specify the persons and/or organizations that will be responsible for conducting these activities. EPA recommends that the Regions prepare a detailed ICIAP which can help ensure ICs are properly implemented and operate effectively during their entire lifespan, and that can function as a single-source of concise site-specific IC information. At PRP-lead Superfund sites, the revised model Remedial Design/ Remedial Action (RD/RA) Consent Decree (CD) incorporates the concept of ICIAPs and provides some optional model language regarding their use. See *Model RD/RA Consent Decree*, Office of Site Remediation Enforcement, Office of Enforcement and Compliance Assistance. October 2009, sections IV & IX).

The ICIAP should identify the existing or anticipated enforcement documents and approaches that may be used to enforce the ICs, where applicable. It should also describe how the combination of ICs for the site relate to the reasonably anticipated future land use assumption used in the response selection process, especially for special siting circumstances (e.g., schools), as well as resource use restrictions called for in the decision document and how they will be effective and durable over their lifetime. Finally, the ICIAP should address effective steps for information disclosure to affected communities, and full cost accounting of ICs throughout the life of the cleanup project.

The ICIAP may be developed at different times during the

cleanup process, depending upon the size and complexity of the cleanup and the cleanup authority or program under which it is being developed. Although information related to the development of the ICIAP may be generated throughout the cleanup process (site investigation, response selection, response implementation, and long-term stewardship), it is generally recommended to initiate the ICIAP prior to, or at the same time as, the design (i.e. RD phase under CERCLA) of the physical response action and finalize it with the completion of the response action. This approach should allow

¹⁷ For guidance on institutional controls at contaminated sediment sites, please see *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites*, December 2005. EPA-540-R-05-012, OSWER 9355.0-85 or *Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites*, February 2002. OSWER Directive 9285.6-08

¹⁸ An ICIAP may not be appropriate for emergency removals and time-critical removals since information needed for IC planning and implementation may not be available prior to a removal action.

¹⁹ ICIAPs do not replace the need to consider ICs in the Feasibility Study analysis or including ICs in decision documents.

time for the site managers, site attorneys, and other interested parties to complete detailed post-response discussions with potential IC implementers, inspectors and other stakeholders. If the ICIAP is not developed in time for inclusion in decision documents, those documents may note the usefulness and potential scope for an ICIAP. The criteria and responsible authority for terminating each selected IC should be identified as part of the full life-cycle planning process in the ICIAP.

As an example, the need for early development of an ICIAP may occur at contaminated sediment sites where CERCLA remedial investigations are in progress and human health exposures from eating contaminated fish are well documented. In such circumstances, developing and implementing an ICIAP in collaboration with appropriate federal, state and/or local jurisdictions, in advance of and/or in conjunction with the engineered response should help ensure protectiveness for populations at risk; by receiving timely outreach and education, those populations can modify their fishing and fish eating behaviors.

EPA is developing a separate guidance on preparing IC implementation and assurance plans.

3.5 Cost Estimation

There are several reasons why a complete and realistic estimate of the full life-cycle cost of ICs is often an important part of the IC planning process. For example, an accurate estimate of the full costs to all parties (e.g., EPA, the State, local government, property owners, federal agencies, and responsible parties) can help evaluate the cost-effectiveness of alternative remedies during response selection, where ICs are an important component of total remediation and/or removal costs. Early in the cleanup process, such as during the RI/FS, EE/CA, or CMS, cost information would typically be compiled to assist in response decision-making, using the best information available at the time. During the response action design phase, more precise information usually is developed and can be used for designing and planning the ICs and for preparing the ICIAP.

In addition, IC maintenance, and enforcement costs may extend beyond the 30-year period traditionally used in many p response cost calculations. These continuing costs should be acknowledged when developing response cost estimates and can be important in evaluating long-term effectiveness.

²⁰ "Past USEPA guidance recommended the general use of a 30-year period of analysis for estimating present value costs of remedial alternatives during the FS (USEPA 1988). While this may be appropriate in some circumstances, and is a commonly made simplifying assumption, the blanket use of a 30-year period of analysis is not recommended. Site-specific justification should be provided for the period of analysis selected, especially when the project duration (i.e., time required for design, construction, O&M, and closeout) exceeds the selected period of analysis." (*Guide to Developing and Documenting Cost Estimates During the Feasibility Study*, July 2000, EPA 540-R-00-002 OSWER 9355.0-75)

Finally, accurate response cost estimates are typically important so that agencies, governments, responsible parties, and other organizations with the long-term responsibility for the ICs can know their financial obligations prior to entering into settlements. Their involvement can help ensure that adequate resources will be available in the long-term for maintaining and enforcing ICs outside of an agency's direct control, and can significantly increase the reliability of the ICs and overall protectiveness of the response. For more information on cost estimation, please see a *Guide to Developing and Documenting Cost Estimates During the Feasibility Study*, July 2000, EPA 540-R-00-002 OSWER 9355.0-75.

3.6 Funding

Reliable cost estimates can also be important to parties, such as states and PRPs, who will be responsible for site cleanups and ICs. Parties responsible for the cleanups are often required to provide assurances to regulatory²¹ authorities that they will complete the O&M, including ICs. Regions should ensure that whatever entity will be responsible for maintaining the IC, including local governments, has the capacity to do so. Cost estimates may also help the planning process for removal actions when appropriate. Under RCRA, the owner/operator of a facility is responsible for conducting corrective action which includes ICs.

An important part of this assurance can be the availability of State or PRP funds throughout the life of the O&M. Further information regarding assurance requirements and costs is provided in Sections 4.4, 6.5, and 8.7 herein.

3.7 Community Involvement

Another important aspect of IC planning normally is community involvement. Site managers and site attorneys should work with the community early in the process to understand the future land uses being considered at a site, and understand how ICs may impact future land uses. Land use planning decisions are generally intended to serve the interests of the community, and communities typically play a central role in shaping policies at the local government level regarding land use planning. As mentioned in the *Land Use in*

the CERCLA Remedy Selection Process directive (OSWER 9355.7-04, May 25, 1995), where there are concerns that "the local residents near the Superfund site may feel disenfranchised from the local land use planning and development process...EPA should make an extra effort to reach out to the local community to establish appropriate future land use assumptions..."²² Thus, community input is

²¹ See, for example, 40 CFR § 264.101 for financial assurance requirements for corrective action at RCRA-permitted facilities.

²² *Land Use in the CERCLA Remedy Selection Process* (OSWER Directive 9355.7-04; May 1995) available at <http://www.epa.gov/swerosps/bf/html-doc/landuse.htm>.

often critical in helping site managers and site attorneys develop assumptions regarding the reasonably anticipated future land use for a site, and in selecting ICs.

Site managers and site attorneys are encouraged to work with the Community Involvement Coordinators (CICs) to develop strategies to ensure that the community understands why ICs are needed (e.g., why it may not be feasible to clean up the site to levels that allow for unrestricted use), how the ICs will work as part of the cleanup to protect human health and the environment, and any potential implementation issues associated with an IC. Community understanding and support can significantly improve the likelihood that ICs will be appropriately selected, implemented and maintained effectively.

Regions should ensure communities have meaningful opportunity to review proposals for site remedies and provide adequate information to allow informed public comment regarding the choices between cleanup alternatives that either achieves levels that allow for unrestricted use, or leave levels that lead to restricted uses and rely on ICs. When waste is left in place and ICs are needed, Regions should provide the affected community an opportunity to review the analysis (e.g., a proposed plan) that supports the choice of leaving waste in place as opposed to a more aggressive cleanup.

Once cleanup actions have been completed, the local community may be impacted by ICs and associated land use limitations if there is residual waste on site that requires continued management. As such, one of the critical roles a community can play is to identify potential issues regarding state or local government capacity or ability to manage and oversee the ICs effectively. In the event that there is a question about the ability to manage and oversee ICs effectively, Regions should consider whether it may be appropriate to consider removal of additional waste to eliminate the need for ICs, or rely on other ICs that can be effective in ensuring that reuse would not pose a threat to human health or the environment.

Finally, it should be recognized that public input can help identify combinations of ICs that can more effectively facilitate the return of environmentally distressed properties to beneficial use. For example, CERCLA Fund-financed response actions may require certain state assurances for implementing, maintaining, and enforcing ICs at remedial action sites following completion of the remedial action, and for implementing post-removal site controls at removal sites. Involving community members in the evaluation of the options may provide valuable information and foster the understanding, acceptance, and support for ICs that can be critical to support the long-term reliability of the cleanup.

3.8 Capacity for Implementing and Managing ICs

When ICs are to be employed as a component of a site response, Regions should carry out an analysis to determine if

the state and local agencies responsible for oversight and management of the controls have the ability and capacity to implement, maintain and enforce the controls. ICs can only be a reliable component of site cleanup if the responsible agencies have the ability, willingness and capability to oversee and manage these controls. The Regions should consider a number of factors when evaluating ability, willingness and capability for the management of ICs, including:

- Can the ICs be accurately mapped?
- Is it possible to use the States' one-call system(s) to prevent breaches?
- Is it possible to establish a mandatory monitoring and reporting program to routinely review ICs to ensure their continued effectiveness?
- What enforcement authorities are available to ensure ICs are maintained?
- Is it possible to establish informational ICs that effectively disseminate information on the location of controls, compliance status, and monitoring reports to interested stakeholders, state and local environmental officials?
- Is there a source of funding, or is it possible to establish a mechanism to provide funds, for the operation and maintenance of ICs?
- How are IC expenditures to be tracked? Is there a history of expenditures that can be used to refine future planning estimates for the long-term costs of maintaining ICs?

4. GENERAL IMPLEMENTATION ISSUES

A number of factors should be considered to evaluate whether ICs can be effectively implemented as part of a response action. These factors, and the roles of the various interested parties, may differ depending on the type of IC instrument, the specific circumstances at each site, and which authorities are being applied. At many sites, responsible parties may have the primary responsibility for implementing and ensuring the long-term effectiveness of ICs. This section addresses some general issues and concepts typically encountered in implementing ICs.

4.1 Documentation of Use Restrictions and IC Instruments in Decision Documents

For most cleanup programs, use restrictions and IC instruments relied upon to help achieve protectiveness should be incorporated in site decision documents; often such an IC can be based upon a preexisting state or local law or program. The decision document(s) should describe the rationale for

using the ICs in helping to achieve protectiveness (e.g., their role in maintaining the effectiveness of the response action) and should include as much detail about the ICs as possible. Specifically, the decision documents should describe how the recommended ICs accomplish the specific land and resource use restrictions that are the objectives of the IC.

General Implementation Issues

- Documentation of Use Restrictions and IC Instruments in Decision Documents (Section 4.1)
- Drafting IC Language in the Selected Instruments (Section 4.2)
- Role of Local Governments and Communities (Section 4.3)
- State Assurance for Stewardship at CERCLA Fund-lead Sites (Section 4.4)
- ICs and Landowners (Section 4.5)

Different cleanup programs utilize different authorities, processes, and documentation of response actions. The main remedy decision documents used for Superfund remedial actions generally are RODs, Explanation of Significant Differences (ESDs), and ROD Amendments. For CERCLA removal actions, the Action Memorandum is the decision document to select and authorize removal actions (*Superfund Removal Guidance for Preparing Action Memoranda*, September 2009 which updates and replaces *Superfund Removal Procedures: Action Memoranda Guidance*, OSWER 9360.3-01). Because ICs are generally not selected as part of the removal action, the Action Memorandum should generally indicate that the State will be the lead agency for planning, implementing, maintaining and enforcing ICs in those cases where ICs would be appropriate after the removal action and where the site is non-federal. Examples of RCRA documents that may contain IC language include permits and orders, corrective action decision documents known as Statements of Basis, Final Decision/Response to Comments, and equivalent documents issued by authorized states. Brownfields, UST, and federal facility sites often have equivalent decision documents, cooperative agreements, or work plans.

In addition to decision documents, other documents that may include information related to the remedy and/or ICs for the site are Superfund orders, CDs, and related documents. The RD, ICIAP, IC requirements in an O&M plan, five-year review (FYR) or other periodic remedy reviews, or equivalent documents also may provide IC details. For federal facilities under CERCLA, LUC implementation details are generally placed in a post-ROD enforceable document usually called a LUC Remedial Design or Remedial Action Work Plan or a LUC Implementation Plan.

Specificity of Language in Decision Documents - Selecting Restrictions and ICs. Because many ICs involve complex legal analysis and issues, site attorneys should play a leading

role in developing the appropriate language. Developing the appropriate language may require a combination of expertise in the federal and state environmental laws, regulations, and programs involved, as well as local and state real estate law and practice. One of the challenges that site attorneys and site managers may face is translating the substantive land and resource use restrictions selected in the decision document into IC instruments. Vague or missing language about the restrictions in the decision document may have unintended consequences including either under or overly-prescriptive IC instruments. As a general principle, site managers and site attorneys are encouraged to present information in decision documents that, for any ICs selected in the decision document:

- Clearly describes the objectives to be attained in terms of specific land and resource use restrictions;
- Includes a map and describes the geographic location of the restricted areas;
- Identifies the entities responsible for implementing, maintaining, and enforcing the ICs;
- Discusses plans for maintaining and, as appropriate, the enforceability of the anticipated IC instrument(s);
- Evaluates the likelihood that the ICs can be effectively implemented, and
- Identifies the necessary lifespan of the IC (e.g., either as interim or permanent measures).

An analysis of this type of information will generally help the site manager and site attorney appropriately select the IC instrument(s) that can meet the response action objectives. Providing this information to the public should also aid the public's understanding of the need for the specific ICs and their relationship to the overall response. This analysis should be appropriately documented in the decision document(s).

It is recognized that at the time of decision document signature there may be some uncertainty as to the specific IC instrument to be implemented at the site. Every effort should be made to provide as much specificity at the time of the decision including, where appropriate, the types of uses of the site that should be protective based on the proposed response actions, the ICs that can help ensure protectiveness, and which entity will assume responsibility for implementing, maintaining and enforcing the restriction, where possible.

For additional information on federal facilities, see EPA's *Sample Federal Facility Land Use Control ROD Checklist with Suggested Language*, October 2006.

Modifying Existing Response Action Decision Documents. In some circumstances, it may be appropriate for site managers and site attorneys to work together to clarify or specify IC requirements in existing decision documents (e.g., where IC language is vague or incomplete). At Superfund sites, if the change to a Superfund remedial action is deemed minor or not significant, it may be appropriate to clarify the ROD through a

memo to be added to the site file. If the change is determined to be significant, but not fundamental, an ESD may be appropriate. In some instances, a site manager and site attorney may determine that an opportunity for public comment is appropriate for sites with significant stakeholder interest. In some cases, a fundamental change to a Superfund remedy may be necessary; in such cases, a ROD amendment should be prepared. This may occur in situations where, for example, an implemented remedy that relies in part on an IC fails to attain the remedial action objectives (RAOs). In addition, if an appropriate IC cannot be developed to attain the RAOs described in the ROD; a revision to the overall remedy may be warranted.

Regions should continue to review and strengthen ICs with periodic reviews that take changes in land use into account. For a site-wide ready for anticipated use (SWRAU)

determination,²³ the Regions consider whether all ICs called

for in the decision documents are in place and continue to be effective. IC instruments, such as notices, can be effective controls and should be considered when evaluating a SWRAU determination. In some cases, it may be appropriate to strengthen, layer, or include supplemental ICs at the site to ensure protectiveness of human health. In the event that a review (e.g., a CERCLA FYR) identifies the need to modify the existing IC(s), it may be appropriate to modify the original decision document (e.g., the ROD). If a decision document is amended to require additional ICs, then the Region may want to wait to evaluate whether the site achieves SWRAU.

If the RAOs can be met using new or additional ICs, Regions should evaluate what type of modifications, if any, to existing remedy decision documents and associated enforcement documents (if any) may be appropriate. Where the Region makes changes to the engineering component of the remedy, the site manager and site attorney also should ensure that any existing ICs are consistent with the revised remedy. For information on changing Superfund remedies, see *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and other Remedy Selection Decision Documents*,²³ EPA 540-R-98-031, OSWER 9200.1-23, July 1999. When documenting significant changes made to a remedy in the Superfund program, the lead agency must comply with the public participation requirements of CERCLA § 117(c); the NCP also has provisions that address public participation (see e.g., 40 CFR §§ 300.435(c)(2)(i) and 300.825(a)(2)).

To document IC changes to the removal action, the Region should either supplement or amend the action memorandum as appropriate depending upon the nature of the IC and the change.

Under RCRA, a permit modification or change to a corrective ~~action order may be necessary if the previously understood~~

conditions, selected remedies, or overall operations change. The requirements for modifying an existing permit may vary from state to state. If the selected response, including any ICs, differs from the proposed response as discussed in the Statement of Basis, the final permit modification should reflect such changes.

As stated previously, Brownfields and UST cleanup requirements vary by state authority, so the state site manager and site attorney should research the existing administrative procedures for modifying response decisions.

4.2 Drafting IC Language in the Selected Instruments .

This section provides recommendations for identifying and addressing several potential issues regarding IC language in a variety of contexts. Vague or inappropriate IC language can

lead to confusion and conflict in establishing effective ICs and, in some cases, may result in the creation of unintended rights and/or obligations. Regions generally should ensure that the IC language in the instrument clearly states the IC objectives (e.g., restrict well drilling) and their relationship to the response action (e.g., prevent human consumption of contaminated ground water).

Using Subject-Matter Experts and Stakeholder Input It may be useful to consult subject-matter experts and stakeholders in developing appropriate IC provisions. For example, special expertise may be needed to develop language for proprietary controls, governmental controls, or informational devices.

When developing the specific IC language, the site attorney may consider consulting, where appropriate, with officials from national professional organizations; the state attorney general's office; state environmental protection agency; local government planning agencies; several EPA offices including OSRTI, Office of Enforcement and Compliance Assurance (OECA), FFRRO, FFEO and OGC; responsible parties; site owner (if different from the responsible party); other federal agencies; and community stakeholders. Such consultations can help to ensure that IC instruments that are identified and implemented (such as covenants, easements and notices) are recorded in local land records, and comply with the real property law and recording statutes of the appropriate jurisdictions. Such consultations can be especially useful because state laws can vary significantly.

For enforcement-lead sites, attorneys may consider drafting enforcement documents that would require the responsible parties to provide supporting information (e.g., a certification from a real estate attorney) demonstrating that the covenant, easement, or notice meets the appropriate requirements for the jurisdiction. In the case of local governmental controls such as zoning, the site attorney and site manager should work closely with local government staff to ensure that the IC can be implemented, maintained, and enforced.

²³ As further discussed in Section 9, this determination is made for purposes of the Government Performance and Results Act.

Through active interagency and intergovernmental coordination, the site attorney and site manager usually can better ensure that the language used leads to effective ICs that meet the IC objectives stated in the decision document and that can be appropriately implemented, maintained, and enforced within the jurisdiction. Community involvement in the development process to promote the acceptance and understanding of ICs can help in developing ICs that are reliable, durable, and effective over time.

Useful IC Provisions. The following provisions should be considered for inclusion in the IC documents:

- *Notification to lessees.* Enforcement documents such as Administrative Orders on Consent (AOCs) and CDs may reference existing lease agreements and require lessors to notify existing lessees and sub-lessees of the residual contamination and the restrictions on the use of the property. Also, a notice of the residual contamination and use restrictions should be included in any future leases or subleases of the property and such leases and subleases should be made subject to any proprietary controls.
- *Notification to EPA, states, tribes, and local governments.* The site attorney and site manager should determine whether proprietary controls and enforceable documents should require the signator or owner of a proprietary interest to give prior notice to EPA (or other lead agency), as well as the state, tribal, and local governments, of any changes in land use, property transfers, or any other activity that may affect the protectiveness of the IC and/or the engineered response action. In addition, the IC should have clear provisions for notification in the event of a breach of the IC. Such notifications should indicate, or provide enough information to determine, if the IC process and environmental performance objectives are being met.
- *Site description.* IC documents should include a comprehensive site description to help focus the ICs needed on specific areas of the site or on specific environmental issues. Regions should avoid applying ICs to the entire site rather than the specific area requiring the restriction, where this would result in the needless restriction of areas that should not have been subject to ICs. Thus, it is important to accurately describe the parcel boundaries and the location of any residual contaminants as well as provide a map to reflect these boundaries and locations. Appropriate mapping can show both the location of site-related contamination and where ICs have been implemented. It is also helpful to note the location of any structures (including temporary structures associated with response activities), zoning, ownership, and other information deemed relevant for the intended use of the site. It should be noted that the location and dimensions of the residual contamination may change over time (e.g., due to contaminant migration or attenuation). A number of descriptors can be used to characterize the location and other factors about the site.

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4.3 Role of Local Governments and Communities

While EPA, the state, or tribe may take the lead on many response actions, local governments and community members typically plan and regulate land use at the site. Local governments and community members can offer valuable information on the land use controls available in their area, and may help develop creative solutions that can help ensure protection of human health and the environment while also considering the interests of other local stakeholders. Local governments are often the only entities that have legal authority to implement certain types of ICs (e.g., zoning restrictions). Therefore, local governments and community members generally are important partners for implementing, maintaining, and enforcing certain ICs.

Some Potential Key Roles for Local Governments and Community Members

- Provide input on the reasonably anticipated future use at the site.
- Provide information and input on the available land use controls within the jurisdiction of the local government.
- Implement, maintain, and enforce zoning and permitting regulations.
- Evaluate building permit requests, site plans, and zoning applications.
- Provide notice to EPA and the state regarding land use changes at the site.
- Provide information relevant to the planning, design, and execution of periodic reviews, such as the CERCLA Five-Year Review (FYR) process.

Site managers and site attorneys are encouraged to involve both community members and local governments early in the response process, and to discuss reasonably anticipated future

land use, public health protection goals, and the IC instruments being considered to achieve these goals. In addition, it can be important to clearly discern the regulatory jurisdictions of different state and local resource agencies and public health agencies regarding their authorities and programs. This process often encourages multiple face-to-face meetings with local officials and community members by both site managers and CICs. The involvement of local governments and community members in IC planning and implementation can lead to more effective and appropriate ICs, and avoid delays in developing them or completing the cleanup.

4.4 State Assurance for Stewardship at CERCLA Fund-lead Sites

In general, CERCLA § 104(c)(3)(A) requires the State to provide assurance that it will assume responsibility for O&M of a Fund-financed remedial action. The NCP (40 CFR § 300.510(c)(1)) provides that "the State must assure that any institutional controls implemented as part of the remedial action at a site are in place, reliable, and will remain in place after the initiation of O&M. The State and EPA shall consult on a plan for operation and maintenance prior to the initiation of a remedial action." These assurances are normally documented in a cooperative agreement for State-lead sites, or in a Superfund State Contract (SSC) for Fund-lead sites.

Detailed cooperative agreements and contracts with State agencies may contain much more detailed information about IC implementation than an ICIAP. These cooperative agreements, contracts, or commitment letters can be used to clarify the State's role in implementing ICs that are part of the remedy selected in the ROD. For example, they may include detailed activities, deliverables, schedules, and tracking mechanisms. However, they cannot be used to provide Federal funds to the state or local agencies for maintaining and enforcing ICs that fall under the umbrella of O&M at Fund-lead sites. See Section 8.7 for further details on the limits of the use of Fund money.

An agreement to fund the initial implementation of ICs and formalize O&M responsibilities may enable the State to provide the necessary assurance. However, if the State is unwilling or unable to provide this assurance, the site manager and site attorney may need to consider other ICs or, if necessary, choose an alternate remedy that does not need ICs to ensure protectiveness. Therefore, it is important that a site manager and site attorney fully understand the capability and willingness of the State to provide assurances for ICs before Superfund remedy decisions are made.

Prior to initiating a time-critical or non-time-critical removal action, Regions are encouraged to seek a written commitment from the State, local government, or PRP that they will assume responsibility for ICs. Where the State will be responsible for the ICs following a non-time critical removal action, the request for commitment could be included in the

applicable or relevant and appropriate requirements (ARARs) request letter (which may already be happening prior to signature of the decision document). For PRSCs, the Region is encouraged to obtain the commitment prior to initiating the removal action. For an emergency removal, the Region may seek a written commitment after initiating the removal action. See *Superfund Removal Procedures - Removal Enforcement Guidance for On-Scene Coordinators*, OSWER 9360.3-06, April 1992.

4.5 ICs and Landowners

Generally, owners of contaminated property are responsible for addressing the contamination on their property, including implementing and/or maintaining ICs. Under CERCLA, for instance, landowners specifically may be liable for costs associated with or performance of the cleanup.

There may be instances under any of the cleanup programs where a restriction needs to be placed on the property of a landowner who did not cause or contribute to the contamination. Under CERCLA, EPA has authority to obtain property access under § 104(e), to order parties to perform site cleanup under § 106, and to acquire real property interests under § 104(j). Similar authorities may not be available to states or EPA under other cleanup programs (e.g., different liability provisions apply to UST and RCRA cleanups). EPA strives to ensure that the parties responsible for the contamination implement and maintain ICs, including those restrictions on properties not owned by them.²⁴ In such cases, a responsible party may need to negotiate with landowners in order to obtain cooperation or agreements to maintain an IC on their property. If responsible parties are unable to negotiate an IC with landowners, the Region may need to reassess the response action or pursue other strategies to implement the selected IC. Where responsible parties are unwilling to work with landowners to implement ICs, the Region should ensure that IC commitments or requirements made in enforcement documents (e.g. commitments in settlements, requirements in administrative orders) are met. Where landowners of contaminated property are unwilling to have an IC implemented on their property, the Region may require them to take an appropriate action through enforcement tools such as a Unilateral Administrative Order (UAO). These scenarios are addressed in more detail in Section 9.4 herein.

Where a response action involves ICs that are to be implemented on properties owned by parties who did not cause or contribute to the contamination, the community (including all property owners involved) and local government should be involved early during the response process. Moreover, any affected landowners should be given adequate notice of the proposed response action and the opportunity to comment. This can occur, for example, in the Proposed Plan

²⁴ "Enforcement First" to Ensure Effective Institutional Controls at Superfund Site, OSWER Directive 9208.2, March 17, 2006.

and comment period process used for CERCLA remedial actions.

The sections below discuss some specific considerations when contemplating a remedy that calls for landowners who either qualify for conditional limitations on, or exclusions from, liability or who are otherwise not liable to take steps to implement or maintain ICs.

Conditional Limitations on or Exclusions from, Liability for Landowners of Contaminated Property. Some selected response actions may call for ICs to be implemented on properties owned by parties who did not cause or contribute to the contamination but nonetheless may have responsibilities for implementing and maintaining ICs on their properties. For example, the Small Business Liability Relief and Brownfields Revitalization Act, Pub. Law 107-118 (the Brownfields Amendments), enacted in January 2002, amended CERCLA to provide and clarify certain qualified liability limitations for landowners, including: (1) bona fide prospective purchasers; (2) contiguous property owners; and (3) innocent landowners. These qualified liability limitations are conditioned on meeting certain threshold criteria and continuing obligations. Particularly relevant to ICs is the continuing obligation to comply with any land use restrictions and to not impede the effectiveness or integrity of any ICs established, relied on, or connected with a response action. For more information on these statutory liability protections available to landowners, see *Interim Guidance Regarding Criteria Landowners Must Meet in Order to Qualify for Bona Fide Prospective Purchaser, Contiguous Property Owner, or Innocent Landowner Limitations on CERCLA Liability ("Common Elements" Guidance)*, March 6, 2003.

Some responses may also call for ICs on properties owned by parties subject to a liability protection (e.g., landowners of uncontaminated properties that have liability protection and the properties are otherwise integral to a response action). For example, an IC can be used to protect the integrity of a ground water sampling well that is in place to monitor the migration of a contaminated ground water plume. It may be challenging to implement ICs in these scenarios because the landowners have a liability protection that shields them from liability for the response action. Early and meaningful outreach to these landowners, including describing the purpose and objectives of the response and the need for the IC, is particularly important in these cases.

For landowners that may not qualify for the qualified liability limitations contained in the 2002 Brownfields amendments, EPA has enforcement tools that may alleviate some concerns about their CERCLA liability as owners of contaminated property. EPA issued its *Policy Towards Owners of Residential Properties at Superfund Sites, OSWER Directive 9834.6*, July 3, 1991, an enforcement discretion policy, the goal of which was to relieve residential owners of the fear that they may be subject to an enforcement action even though

they had not caused the contamination on the property. Similarly, EPA has issued an *Interim Enforcement Discretion Guidance Regarding Contiguous Property Owners*, January 13, 2004, and a *Final Policy Toward Owners of Property Containing Contaminated Aquifers*, November 1995, which discuss EPA's enforcement position with respect to contiguous property owners and owners of property that contains an aquifer that has become contaminated as a result of subsurface migration.

Additional Considerations. The challenges presented by implementing ICs on properties owned by landowners who did not cause or contribute to the contamination are heightened when the desired IC is a proprietary control. These challenges are significant but so are the benefits of proprietary controls, such as their enforceability and long-term effectiveness. These considerations should be balanced when determining when to pursue other types of ICs.

5. IMPLEMENTING PROPRIETARY CONTROLS

Proprietary controls generally use real property and contract law to place restrictions on, or otherwise affect the use of property or related resources. Common examples of proprietary controls include covenants and easements, which give their holders "property interests," or the right to restrict use of the land, but generally not possession of the land.

Implementing Proprietary Controls

- Principles of Proprietary Controls (Section 5.1)
- Proprietary Control Strategies (Section 5.2)
- Documenting the Proprietary Control (Section 5.3)
- Selecting the Grantee (Section 5.4)
- Implementing Proprietary Controls at CERCLA Fund-lead Sites (Section 5.5)
- State Assurance Requirements for Acquiring Real Estate Interests under CERCLA (Section 5.6)
- Establishing ICs through RCRA Orders and Permits (Section 5.7)

5.1 Principles of Proprietary Controls

For a proprietary control to be put in place, a transaction typically occurs in which a property interest is conveyed from the owner of the land, known as the "grantor," to some other party who will be the "holder," also known as the "grantee." The term "grantee" refers to the party holding the reserved uses (e.g., property interests). This transfer of interest generally is memorialized in a written agreement, which is then recorded in the local land records.

For example, a property owner (grantor) may agree to restrict the drilling of ground water wells on his/her property and grant the right to prohibit the drilling of wells to another party.

Through the recording of a proprietary control, the restricted uses normally are considered to be "running with land" so that all future owners or interest holders would be bound by them. Selecting an appropriate grantee can be one of the most critical issues in the effective implementation of a proprietary control, and is discussed in Section 5.4 herein.

The implementation of a proprietary control may or may not be part of a larger transaction involving the sale or transfer of the underlying property. Some states do not consider certain proprietary controls (e.g., covenants) to constitute interests in real estate. However, the process for implementing such a control will typically be similar to that needed when the control does constitute an interest in real estate.

Since proprietary controls rely heavily on state law and practice, it is important to be aware of all relevant state legislation and regulations. States can address some of the legal impediments to the long-term durability of proprietary controls through legislation (e.g., statutorily allowing the environmental covenant to "run with the land"). Several states have adopted some or all of UECA, model legislation that may reduce the legal and management complications associated with using environmental covenants as ICs. The site manager and site attorney should determine whether there are any such state statutes, and whether they can help ensure the protectiveness of the remedy before the response action is chosen and thereafter as part of any periodic review, maintenance and/or optimization of the remedy.

5.2 Proprietary Control Strategies

At many sites, the responsibility for implementing proprietary controls typically rests with the responsible party or landowner. At many CERCLA Fund-lead cleanups, EPA or the State (depending on which is the lead agency) will typically have implementation responsibility as part of the response action. Required activities are usually documented in a CD or an administrative cleanup order (either unilateral or on consent). At a minimum, the document should state the objective of the IC, the location of the property and specific areas to be covered by the IC, the specific type of proprietary control anticipated, the party who will be the grantee, and a requirement that the responsible party provide notice to EPA and/or the state if the control is violated.

Generally, when the responsible party owns the land that is being restricted, the proprietary control should be memorialized in an enforceable easement or restrictive covenant. If the response action includes the use of a

restriction on the use of land not owned by the responsible party, that responsible party should use its "best efforts" to

²⁵ "Best Efforts" is defined for the purposes of the EPA CERCLA Model RD/RA Consent Decree to include the payment of reasonable sums of money in consideration of access, access easements, land/water use restrictions, restrictive easements, and/or an agreement to release or subordinate a prior party to lien or encumbrance (*Model RD/RA Consent Decree*, Office of Site some

obtain a proprietary interest. This can include responsible party compensation to the affected landowners for the proprietary control. To secure an agreement with the owner of the affected property as to the valuation of the property interests, one or more independent appraisals may be necessary.

If the responsible party cannot obtain the necessary interests despite its best efforts, EPA and/or the state may acquire the interests, and the responsible party may be required to reimburse EPA and/or the state for all costs incurred in acquiring the interests. EPA has authority to acquire property interests for purposes of conducting remedial action at CERCLA sites provided that the State agrees to accept transfer of the real estate interest when O&M is initiated.²⁶ For additional information on other enforcement strategies that may be appropriate, see Section 9.4.

For purposes of allowing EPA to directly enforce certain proprietary controls, EPA may pursue the role of a "third party beneficiary." That is, another party such as a responsible party or a state would serve as the grantee of the easement or covenant that specifically provides third-party rights of enforcement to EPA. Other viable parties with legitimate interests in ensuring ICs remain in place, such as neighbors, local governments, and environmental and civic organizations, may also act as third-party beneficiaries. This approach can strengthen the effectiveness of the IC by providing an additional means of ensuring compliance. Site managers and site attorneys should consider the third-party beneficiary approach whenever a proprietary control is used. For further information on third-party beneficiary rights, see *Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls*, Office of Enforcement and Compliance Assistance memorandum, April 19, 2004.

5.3 Documenting the Proprietary Control

As previously discussed, the form of a proprietary control needs to comply with the laws of the jurisdiction in which the property is located, and should be implementable, legally effective, and enforceable. The language of each document should be tailored to the site characteristics, IC objectives (land and/or resource use restrictions), and performance standards (if any) designated in the decision document.²⁷

Remediation Enforcement, Office of Enforcement and Compliance Assistance. October 2009, paragraph 28).

²⁶ Although EPA may acquire property interests at remedial sites, and receive

reimbursement for costs incurred in acquiring the interests, there is no explicit equivalent authority for CERCLA removal, RCRA, Brownfield, or UST cleanups. See discussion in Section 5.6, State Assurance Requirements for Acquiring Real Estate Interests Under CERCLA.

²⁷ Where appropriate, use of sample language or model proprietary control documents may be useful. For example, some states have developed templates for proprietary controls consistent with their legislation, ensure that the controls are enforceable and run with the land. Using

Responsibilities and Approvals. A draft proprietary control is typically developed by the responsible party, EPA, and/or a state (depending on site lead). The site attorney and site manager typically would review and approve the controls. The responsible party may find it necessary to obtain the services of an experienced real estate attorney in the design and implementation of proprietary controls. This can be important because the exact requirements often vary by the type of proprietary control, the jurisdiction, and cleanup authority or program (e.g., RCRA, CERCLA).

Depending upon the complexity of the control or jurisdiction, the proprietary control also may need to be reviewed and approved by EPA's OGC and/or the state attorney general. If it is determined that the United States is to be the grantee of a property interest at a private site, the U.S. Department of Justice (DOJ) will review and approve the title to the property interest to be acquired unless the assistance of another federal agency with delegated approval authority is obtained. Once the document has been approved by the regulatory agency, the responsible party should ensure that it is executed and recorded in the land records. The site manager should place a copy of the recorded instrument in the site file.

Contents of a Proprietary Control Document. Proprietary controls, such as easements, should generally contain language of conveyance to effectuate a transfer of an interest in real

property. As a general rule, such language is drafted in terms of a grantor conveying a property interest to a grantee. It is often important for the language to clearly show the

relationship of the specific IC instruments to the land and resource use restrictions called for in the decision document. Typically, the document should contain all substantive parts of the actual restriction, and at a minimum, normally should provide:

- A detailed legal description of the site;
- A list of uses that will be restricted;
- A clear description of who will execute the document;
- A clear description of the area to be restricted, particularly where less than an entire parcel is affected;
- A complete description of the types and location of residual contaminants and response action components;
- The precise names of the parties involved (including the grantee and grantor as they appear on title documents, and any third party beneficiaries);

sample language can reduce the amount of time spent drafting and negotiating with state agencies, responsible parties, and other entities with a role in the proprietary control.

²⁸ Depending upon state law, a covenant may not represent an interest in real property. For example, state law may specify that an environmental covenant does not constitute an interest in real property if a state agency is the grantee nor has "agency" status under UECA.

- Provisions for third-party or other enforcement, as necessary;
- The parties' rights, including resource and use restrictions;
- Language to clearly express whether the IC is binding on subsequent purchasers (i.e., that the proprietary control "runs with the land");
- Specific notice and approval requirements for modifying or terminating the IC;
- A requirement for notification to EPA and/or the state prior to transfer or lease, or if there is an IC violation;
- Information regarding indemnification of the state or other grantee;
- Provision for notification to lessees of the IC, and
- Discussion of any common law impediments, where appropriate.

When developing the legal instrument, it may be important to have the site surveyed, have permanent monuments erected to properly document the location of the affected area, and conduct a review of title to the property to identify all parties who have a lien on or interest in the property. Clearly defining property and IC boundaries may prevent unnecessary confusion and may facilitate beneficial reuse. Accurate maps should be prepared (in both paper and GIS versions) to depict

the physical areas subject to restrictions. These maps should be made available to the public, which can help provide notice and important information about the ICs.

Finally, the site manager and site attorney should attempt to resolve any "subordination" issues early in the IC evaluation and selection process before implementing a proprietary control. As a general rule, in most states, real property interests are generally prioritized according to the order in which they are recorded in the land records. A property may be subject to several recorded interests, such as mortgages, tax liens, utility easements, and judgments. In addition, a property may have surface land rights that may be separate from mineral or water rights and the separate rights may need to be considered in drafting effective proprietary controls. To avoid a situation where a proprietary control is subordinate to a prior or "senior" interest, a subordination agreement may be used to switch the priority around. A subordination agreement is a legally binding agreement by which a party holding an otherwise senior lien or other property interest consents to a change in the order of priority relative to another party holding an interest in the same real property. Obtaining a subordination agreement can help ensure that the IC is enforceable against all parties with an interest in the property and not extinguished if a senior lien holder forecloses on the property.

In order to understand whether a subordination agreement is necessary, it normally is important to conduct a thorough title search to identify all parties holding prior interests in the

property. Unrecorded interests, such as leases, may also need to be subordinated to ensure that lessees abide by the easement/covenant. If subordination of senior interests is not possible, the lead agency should frequently notify the holder(s) of the senior interest(s), and identify the risk of harm that could occur, and the potential liability that may arise, if the recorded environmental restrictions are not respected.

5.4 Selecting the Grantee

Another critical issue in the effective implementation of a proprietary control can be the selection of the holder of the property interest or covenant (i.e., the "grantee"). Generally, the grantee, sometimes referred to the "holder," holds the covenant or title to the real property interest and has the primary responsibility for maintaining and enforcing the proprietary control. Examples of possible grantees of a property interest or covenant include states, responsible parties, local governments, civic or other associations (if authorized under federal, state, or local law to hold title to real property and take legal action to maintain an IC), conservation organizations, trusts, and other appropriate third parties. EPA may be the grantee at remedial action sites under CERCLA. Finally, if proprietary controls are implemented under state legislation that is tailored to the requirements of ICs (e.g., a state's adoption of UECA), it may be possible for a grantor of a property interest or covenant to also be the grantee.

Because of the important role a grantee plays in establishing and maintaining a proprietary control, a thorough evaluation of the viability of potential grantees and covenant holders should be performed prior to, or during, the response selection process. In evaluating potential grantees, consideration should be given to: (1) whether the potential grantee is likely to exist for the duration of the control; (2) whether the grantee is willing and able to maintain the IC (e.g., by expending necessary funds to maintain the control or taking legal action against any party that violates the proprietary control); and (3) whether it is appropriate to assign this responsibility to an entity that is not accountable through a CD, order, permit, or other enforceable instrument (unless EPA or the State is a third-party beneficiary). If a suitable grantee cannot be identified, then alternative ICs or a change in the engineered response may be necessary.

Selecting a Grantee Under CERCLA. EPA may choose to be the grantee of a proprietary control at remedial action sites under CERCLA to ensure that site use is consistent with the remedy. EPA also may perform this role where the land subject to restrictions belongs to a responsible party under CERCLA but the owner of the property cannot create a proprietary control through a conveyance to himself/herself under the laws of the state. However, CERCLA requires that the state must agree to accept transfer of certain real estate interests following completion of the remedial action.

If it is ultimately determined that the United States will be acquiring a real estate interest, 40 USC § 3111 requires, as a

precondition of acquisition, that the Attorney General review and approve the sufficiency of the title. This means that title evidence must be obtained, the land must be physically inspected, and the conveyance instrument must be prepared. Authority to review and approve the title rests with the Land Acquisition Section, Environment and Natural Resources Division of DOJ and with certain other federal agencies with delegated authority, such as the U.S. Army Corps of Engineers. More detailed procedural guidance is available in DOJ's *A Procedural Guide for the Acquisition of Real Property by Government Agencies* (1972). Although this guide may be out of date with regard to appraisal matters, it is still current with regard to direct acquisition (negotiated purchase) and condemnation procedures. Also, DOJ's *Title Standards 2001* contains detailed information on acceptable forms of title evidence and requirements for the form of conveyance to the United States.

Selecting a Grantee Under RCRA. In contrast to CERCLA, RCRA does not expressly grant EPA authority to acquire property interests in order to conduct cleanups. Therefore, if a proprietary control creates an interest in real property, EPA may not be the grantee in a RCRA cleanup. However, where the cleanup is being done under an authorized state hazardous waste program, the state may have the authority to serve as the grantee.

If the state cannot be the grantee, the owner/operator or third party should be designated as the holder of the property interest. If the property in question is being sold, the owner/operator can retain a limited interest while conveying the title to the buyer. If part of the response relies on the seller or other third party to retain a limited interest, consideration should be given as to whether the seller will be able and willing to enforce the control for the duration of the IC. If the site is cleaned up under an order, the order can require the selling owner/operator to effectively enforce the control. If it is being done under a permit, steps should be taken to ensure that long-term enforcement is not lost through expiration of the permit. Otherwise, consideration should be given to requiring the owner/operator to transfer the retained interest to a third party (e.g., a land trust or local government), or identifying a third-party beneficiary that is willing to assume enforcement responsibilities.

Other Considerations in Selecting Grantees. A responsible party may become the grantee by acquiring a real property interest from other landowners as part of its obligation to ensure that the response action is properly implemented. By taking title to an easement or similar property interest, the party or facility owner/operator typically ensures that it will be in a position to maintain the IC. Furthermore, it will often have an incentive to maintain the IC because a failure could make further response actions necessary. If enabled under state law, the lead agency should be designated as a third-party beneficiary. Third-party beneficiary status should allow the lead agency (the beneficiary) to enforce the restrictions of the covenant or easement. If the lead agency cannot enforce the

IC as a third party, the lead agency may be able to compel the responsible party (e.g., the facility owner/operator) to carry out its obligations under a CD, order, or permit. If the responsible party is unresponsive or bankrupt, this approach may be ineffective and, at a minimum, the enforcement of the control may be substantially delayed.

If a responsible party owns the property that is subject to an IC, it may also reserve the property interest or covenant when selling the property. A potential disadvantage of this approach can be that the proprietary control may not be implemented until the sale. In this situation, the enforcement document normally should provide assurances (e.g., specify that the owner will reserve the property interest or covenant upon sale of the property, will comply immediately with the ICs, and will place a notice of the ICs with the appropriate recorder of deeds shortly after the effective date of the enforcement document). Regardless of who holds the property interest or covenant, it is usually appropriate to state in the covenant or easement that EPA is a third-party beneficiary. To facilitate enforcement of the IC, the enforcement document and/or permit should also require notice to EPA and/or the state, as appropriate, upon any breach of the IC.

5.5 Implementing Proprietary Controls at CERCLA Fund-lead Sites

If the cleanup is a CERCLA Fund-lead action, EPA or the State (depending upon which is the lead agency) will typically be responsible for ensuring that the control is implemented and that appropriate property interests are conveyed. For removal actions, EPA encourages the Regions to coordinate with the State, local governments and/or community groups prior to the initiation of the removal action, to seek commitments for conducting any prescribed PRSCs and ICs, and to notify the state of any recommendation or decision regarding the need for ICs. Most PRSCs and ICs following removal actions are conducted by the state or PRP. If a commitment to implement an IC cannot be obtained prior to the removal action, then EPA should continue searching for PRPs to implement the IC and negotiating with the State to do the same.

Administratively, the process is similar to that taken by a responsible party at an enforcement-lead site. Because these controls are largely legal in nature, site attorneys typically are responsible for drafting IC language. However, the site manager and site attorney will typically work together to complete the necessary steps for actual implementation. One of the key responsibilities for the site manager is to provide the site attorney(s) with a clear scope of the land/resource area to be restricted. Another key activity is conducting a title analysis that includes an accurate legal description and identifies encumbrances and prior recorded interests. State attorneys general offices and local attorneys can be excellent resources for identifying the specific jurisdictional requirements for the control to be implemented.

In the process of implementing a proprietary control and ensuring that appropriate property interests are conveyed, site managers and site attorneys may face issues associated with just compensation and the power of condemnation through the exercise of eminent domain.

Property Acquisition. EPA may seek donations of property interests (e.g., ground water extraction rights) from landowners in accordance with 49 CFR § 24.108.²⁹ If a donation cannot be obtained, EPA may choose to acquire interests in real property through negotiated purchase for fair market value. The costs of acquiring property interests typically would be recoverable, a factor to consider when a property owner is a responsible party. If valuation issues arise, the site manager should work with the appropriate state and EPA Regional and Headquarters attorneys to resolve the issue. Prior to initiating negotiations to acquire real property or interests in real property, EPA should establish an amount that it believes reflects fair market value. As a practical matter, the fair market value of real property interests to be acquired for use as proprietary controls may be nominal due to offsetting benefits of the cleanup project. See section B-12 of the *Uniform Appraisal Standards for Federal Land Acquisitions* (DOJ 2000), prepared by the Interagency Land Acquisition Conference, for a discussion of offsetting benefit.

Obtaining a voluntary conveyance through donation or negotiation is preferred over initiating a condemnation action. Federal real property acquisition regulations require agencies to make every reasonable effort to acquire real property expeditiously by negotiation (see 49 CFR § 24.102(a)). However, if a property owner is unwilling to sell, is willing to sell but agreement cannot be reached on price, or if the owner is unable to correct title defects, the lead agency may, under certain circumstances, initiate condemnation proceedings under federal or state law.³⁰ If condemnation is being considered under CERCLA § 104(j), the site manager and site attorney should contact OGC for assistance and should ensure that EPA has obtained the requisite assurance from the state to accept the transfer of the interest once O&M has begun for that portion of the remedial action. If condemnation is sought under other authorities, coordination with experts under those authorities should be initiated early in the process.

5.6 State Assurance Requirements for Acquiring Real Estate Interests under CERCLA

EPA can acquire real property or any interest in real property at Fund-lead and enforcement-lead sites under CERCLA § 104(j) to conduct a remedial action provided that the state

²⁹ This regulation, promulgated under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended, addresses requirements for donations of real property for federal and federally-assisted projects.

³⁰ Some state agencies may not have powers of eminent domain.

agrees to accept transfer of the real estate interests when O&M is initiated. In accepting the transfer of real property interests from EPA, the state's CERCLA liability as an owner is limited by CERCLA § 104(j)(3). There is no authority equivalent to that of CERCLA § 104(j) for Superfund removal, RCRA, Brownfield, or UST cleanups. For this reason, if EPA provides oversight or is otherwise involved in a cleanup other than a Superfund remedial action, EPA is not expressly authorized by statute to acquire real property. However, the state may have such authority as a matter of state law. In most UECA states, as long as EPA is not the holder, EPA's enforcement status as "agency" is not considered a real property interest and therefore not subject to § 104(j) assurance requirements (for more discussion, see Section 9.3).

Whether a specific proprietary control constitutes a real estate interest under CERCLA § 104(j), thereby requiring state assurance, is a complicated issue that requires site-specific determinations. If there is a question regarding whether specific proprietary controls would require state assurances under § 104(j)(2), the site attorney should consult with OGC to determine whether a specific proprietary control would require state assurances under § 104(j)(2).

The procedures for acquiring interests in real property are subject to the provisions of EPA's CERCLA Delegation 14- 30, "Acquisition of Real Property." Among other things, this delegation describes the approvals needed for the acquisition of real property. Acquisition by EPA of interests in real property should be coordinated with OSRTI, OSRE, and OGC.³¹

In the event that it is necessary for EPA to acquire a real property interest, and the state assurance requirement under § 104(j) applies, the state must provide written assurance prior to such transfer that it will accept the transfer of the interest following completion of the remedial action. This assurance should then be documented through a SSC, cooperative agreement, or other authorized signed document. There are a few challenges common to transfers of real estate interests from EPA to a state. For example, some state agencies lack the authority to accept a real estate interest transfer. In other states, real property transfers can be accepted, but they are managed by a property management agency and not by an environmental agency, potentially leading to unreliable maintenance and enforcement of the IC. A few state agencies have authority to transfer real estate interests to third parties such as conservation trusts. This situation may present challenges for some states because the state is still required to provide assurances under § 104(j)(2). Therefore, it is important that the site manager and site attorney understand the state-specific requirements prior to the selection of ICs that require a property acquisition.

A number of options can be considered if a state is unable to provide assurance that it will accept transfer of real estate interests. One option is to use other types of ICs, e.g., governmental controls. Another option is to have the real property interest conveyed to a party other than the state. For example, if a third party acquires a real estate interest and holds it in its own name, the exercise of CERCLA § 104(j) authority may not apply because EPA has not acquired a real property interest. To minimize disruptions to the implementation of the remedy, the best practice is to raise the issue of real property acquisition early, such as during the RI/FS or development of the proposed plan, and certainly before the State concurs on the ROD.

As a general matter, EPA in practice transfers or releases all real property interests before a Superfund site enters the O&M phase, regardless of who will ultimately accept the real estate interest (e.g., the state or some other entity). Prior to selection of the remedy, the site manager and site attorney should thoroughly evaluate the transferee's willingness and capability to fulfill its IC responsibilities for the expected life of the IC.

5.7 Establishing ICs through RCRA Orders and Permits

Many of the considerations in establishing ICs at CERCLA sites also apply to Brownfields, UST, and RCRA corrective action sites. However, the requirements under these cleanup programs are often imposed through legal instruments that differ from one program to another. In the RCRA program, states play a key role by imposing ICs under their own authorities as part of their cleanup activities.

For RCRA cleanups and post-closure care, enforceable requirements will generally be established through a permit (e.g., the corrective action portion of an operating permit, or a post-closure permit), or by EPA through an order under RCRA § 3008(h) or § 7003. RCRA § 7003 allows EPA to require cleanup where there is potential imminent and substantial endangerment related to either solid or hazardous waste. In addition, RCRA § 7003 does not distinguish between on-site and off-site contamination. If there is solid waste as defined by RCRA § 1004(27), and the other elements have been met, there is no need to show the existence of a hazardous waste to require cleanup.

Permits and orders alone can impose enforceable restrictions on the use of property by the facility owner/operator. Orders and permits can be crafted to require that the owner/operator refrain from selling the land unless the purchaser agrees to (1) abide by the restrictions contained in the order or permit; and (2) require any future purchasers to do the same. RCRA permits for treatment, storage, and disposal have a statutory duration of ten years and should be renewed as needed to

³¹ For more information, see CERCLA Delegation 14-30

³² "Completion of the remedial action" is the point at which O&M measures would be initiated pursuant to 40 CFR § 300.435(f)

ensure maintenance of corrective measures and ICs. Although orders don't expire, care should be taken when drafting orders to ensure that enforceable IC provisions continue to remain in effect.

In cases where it is necessary for the restrictions to extend beyond the period of performance of a permit or order, proprietary controls should be crafted that run with the land and bind future landowners, as well as the current owner/operator, where feasible given state law requirements. For example, a permit or order may direct the owner/operator to convey such an interest to someone who will then maintain the IC (i.e., a proprietary control). RCRA facility owners may also be required to reserve a property interest when they sell the property and to make the lead agency a third-party beneficiary. Model permit and order language does not yet exist under RCRA for this purpose, although several states are developing such models. If subordination of senior interests is not possible, the lead agency should frequently notify the holder(s) of the senior interest(s), and identify the risk of harm that could occur if the recorded environmental restrictions are not respected.

6. IMPLEMENTING GOVERNMENTAL CONTROLS

State, tribal, and local governments generally have a broad range of regulatory authority to implement a variety of ICs. The authority of government to exercise controls to protect the public's health, safety, and general welfare is referred to as "police power." This authority may include the ability to impose certain land-use controls and ground water restrictions, require informational devices (e.g., notices), and establish building codes and state registries of contaminated sites, among other things. These regulatory and informational devices may serve as highly effective ICs if they are appropriately implemented, maintained, and enforced. In some cases, existing state or local government regulations may serve as ICs. In other cases, new state or local laws or regulations may be most appropriate. Site attorneys should review state or local laws and regulations as they pertain to ICs at a specific site if the site manager is considering relying on or utilizing a state or local land use law or other type of local law to put ICs in place at a site.

State and local governments may impose land use and other government controls at their discretion. EPA has no authority to compel state or local governments to amend or adopt new regulations to impose an IC, or to keep regulations that impose an IC. Any controls established in this way generally operate independently of RCRA and CERCLA, and are enforced through local governmental processes or state law, where applicable. Because each state and local government has different laws and regulations on land use, the site attorney should review those laws and regulations as they pertain to the ICs at a specific site. Where appropriate, the site manager or

site attorney may consider providing information on the role of ICs in EPA cleanup programs to local governments.

In addition, when a local government is responsible for, or participates in, planning, implementing, maintaining, or enforcing governmental controls, site managers and site attorneys are encouraged to reach a common understanding with the state, tribal and local governments before the ICs are implemented to document and clarify the roles, responsibilities, and legal authorities. Details of such arrangements should be included in the ICIAP or equivalent plan.

Implementing Governmental Controls

- Ground Water Use Restrictions (Section 6.1)
- Zoning Ordinances (Section 6.2)
- Fishing Bans and Waterway Use Restrictions (Section 6.3)
- Other Uses of State And Local Police Power (Section 6.4)
- Cooperative Agreements to Support Initial Implementation of ICs at CERCLA Fund-lead Sites (Section 6.5)

6.1 Ground Water Use Restrictions

Ground water use restrictions are frequently used to limit or prohibit certain uses of ground water. Implementation of such restrictions normally depends upon state laws governing ground water ownership and use. Numerous states have adopted laws that could be used to restrict ground water use at contaminated sites. Ground water laws commonly involve water-use restrictions and well construction and abandonment requirements. This is a broad category and such restrictions can take a variety of forms, including: the establishment of ground water management zones or protection areas; prohibitions or limitations on certain uses of ground water in particular areas; capping or closing of wells; and limitations on the drilling of new wells. The State of Florida, for example, has five water management districts which protect, maintain and improve water quality including ground water. A consumptive use program and a program to close old, and/or abandoned wells and the proper construction of new wells, are among the regulatory programs each water management district may implement.

State and tribal agencies with the authority to establish ground water use restrictions typically have a well-defined administrative process. For example, the California's State Water Resources Control Board, which has joint authority over water allocation and water quality protection, guides nine Regional Water Quality Control Boards located in the major watersheds of the state. The regional boards serve as the frontline for state and federal water pollution control efforts.

In many cases, the implementation of state or local ground water use restrictions takes a significant amount of time. For

this reason, the site manager is encouraged to ensure coordination can begin early and to actively monitor the progress in implementing this type of IC.

Well construction permit processes can also be used to implement restrictions on ground water use. A number of state and local governments have adopted statutes controlling new well installations and requiring permits for existing wells. These permitting programs may include requirements for well installation, licensing of well drillers, prohibitions or restrictions on the drilling of new wells in areas of contamination, and requirements and controls on the operation of wells (withdrawal rates/pumping rates). These types of governmental controls also often have specific administrative processes. The site manager should ensure that early coordination occurs with the appropriate permitting agency and should proactively monitor and verify that the permit restrictions continue for as long as they are needed.

6.2 Zoning Ordinances

Generally, zoning is also an exercise of state and local government "police power." Zoning ordinances typically consist of a map indicating the various land-use zones in the community, and text that sets forth the regulations for the development of land. An ordinance may regulate land use, building height, area of structures, density of population, and the overall intensity of use. Zoning can serve as an effective mechanism when a large number of parcels are affected by a response action. For example, an overlay zone could be used to restrict development along a contaminated stream.

The authority to regulate land use, with the exception of federal lands, generally falls within the domain of state and tribal governments. However, states generally delegate much of this regulatory authority to municipal and county governments. Therefore, the site manager and site attorney will often work with municipal and county officials regarding zoning ICs.

Implementing Zoning Controls. To evaluate the effectiveness of zoning controls, the site manager and site attorney should first determine which local government, if any, has zoning jurisdiction over a site. The site manager and site attorney should then meet with the planning staff of the jurisdiction to discuss the objectives of the cleanup, the potential role of ICs in that cleanup, and specific land-use regulations that may be considered to meet those objectives. Administrative controls vary by jurisdiction within each state. However, there are conventional practices that are common among most jurisdictions.

Unless a re-zoning (i.e., a zoning ordinance amendment to change the zoning designation of one or more parcels) is done as part of a jurisdiction-wide comprehensive plan and zoning ordinance amendment, it will typically require a formal

application by the owner of the parcel to be re-zoned.³³ In most cases, a series of public hearings before a planning commission and/or governing body (e.g., city council, county board of supervisors) will then follow. It may be important for the site manager, site attorney, and/or other agency representatives to participate in these hearings to explain the cleanup process, the potential need for a proposed IC and to answer questions posed by members of the public, planning commissioners, and members of the jurisdiction's governing body.

Final approval or denial of the zoning application will generally come from the governing body of the jurisdiction. If the application is denied, the applicant may explore options for modifying the application and/or appealing the decision either within the jurisdiction (e.g., with a zoning board of appeals), or in a state or federal court, depending upon the nature of the challenge.

Limitations of Zoning Controls. Although zoning ordinances can be useful tools, they can have significant limitations. For example, the zoning designation in a particular area may be of limited duration. An area can be re-zoned and/or zoning variances may be granted. Therefore, it may be important to regularly evaluate whether the local zoning ordinance is still in place and is operating in a way that continues to ensure the effectiveness and integrity of the cleanup and its objectives. Thus, zoning may not be a fully effective mechanism unless it is routinely maintained and enforced over the long-term.

Local governments may not have the resources necessary for such oversight. The site manager and site attorney may consider using CERCLA §104(d) cooperative agreements at Fund-lead sites to fund the initial (but not O&M) implementation of ICs. Funding agreements between responsible parties and local governments also may provide resources to the local government for activities that are not considered normal functions of government, including costs for implementing, maintaining, and/or providing notice of any changes in zoning or site use.

Site managers and site attorneys should also be aware that some zoning ordinances can use cumulative zoning, meaning that less intensive uses, such as single family homes, may be permitted in zones designated for intensive, industrial uses. Therefore, even where the site is located in an industrial zone, an amendment may be needed to prohibit less intensive land uses, such as new residential buildings. Finally, some jurisdictions explicitly state the activities allowed in each district while others identify only activities that are prohibited. It is important that the site manager and site attorney understand whether the restrictions will be adequately addressed using the jurisdictional definitions.

³³ The site manager and site attorney may negotiate a consent decree, an administrative order and/or permit language that requires the property owner to apply for a zoning change, if necessary.

6.3 Fishing Bans and Waterway Use Restrictions .

Commercial fishing bans are sometimes used as a governmental control to ban commercial fishing for specific species or sizes of fish or shellfish. Usually, state public health agencies and/or resource agencies establish these bans. Another governmental control that may be used is a waterway use restriction where subsurface contamination remains in place. The restriction typically is placed to ensure the integrity of the remedy (e.g., capping). State and local agencies may be responsible for enforcing this type of restriction.

6.4 Other Uses of State and Local Police Power .

In addition to land-use controls such as zoning and subdivision ordinances, local governments may exercise their police power to protect the public in other ways. For example, they may adopt ordinances that regulate certain activities on contaminated sites that could threaten human health or the environment; an ordinance, for example, might include a ban on swimming or other potentially inappropriate activities in specified areas. State or local governments also could require that anyone seeking a building permit for construction activities in a particular area be notified of contamination and informed of any relevant management standards. Such measures could be used to control or prohibit certain types of construction that would result in unacceptable exposures (e.g., excavation in areas where subsurface contamination has not been fully removed). Excavation issues may also be addressed, to some extent, through an already existing state or local government requirement to contact a designated office³⁴ (e.g., an existing "One-Call" excavation notification system) before excavating.

6.5 Cooperative Agreements to Support Initial Implementation of ICs at CERCLA Fund-lead Sites

The site manager and site attorney may consider using CERCLA § 104(d) cooperative agreements, as appropriate, to support the initial (but not O&M) implementation of ICs by state and local governments at Superfund Fund-lead sites. CERCLA authorizes EPA to enter into cooperative agreements with state and local governments to help conduct response actions at remedial action sites and non-time-critical removal sites. A Superfund cooperative agreement is the assistance vehicle that transfers EPA funds for a response to state, tribal, or local governments and documents both EPA and recipient responsibilities for a site. EPA will generally enter into cooperative agreements with the state-lead agency (usually the state's pollution control agency) as designated by the state's governor and, less commonly, with local governments. To involve other essential state agencies, the state-lead agency typically enters into an intergovernmental

agreement with these other agencies. States may also enter into intergovernmental agreements with local governments as an alternative to a direct cooperative agreement between EPA and the local government.

Cooperative agreements should not be used to support activities that are considered normal functions of state or local government. If the implementation of a specific IC would require the state or local government to perform activities that are not within its normal governmental functions, those activities may be funded. Such activities, including costs for implementing, maintaining, and/or providing notice of any changes in zoning or site use, may also be funded through funding agreements between responsible parties and local government.

It is important to note that EPA does not generally use the Fund to pay directly for IC monitoring or enforcement at removal sites. The Fund may, however, pay for IC monitoring where the removal program is handing over responsibility for the site to the remedial program and before the remedy has been constructed and has reached O & M.

At remedial sites, CERCLA prohibits the use of Fund monies for O&M activities, including the processing of permit applications for projects at sites where there is an IC in place (see Section 8.7).

7. IMPLEMENTING INFORMATIONAL DEVICES

Informational devices are designed to provide information or notification that residual or contained contamination remains on site. Typical information devices include state registries, notices filed in local land records, tracking systems, and advisories.

Implementing Informational Devices

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- Recorded Notices (Section 7.1)
State Registries of Contaminated Sites (Section 7.2)
- Advisories (Section 7.3)
Community Involvement (Section 7.4)

7.1 Recorded Notices

Unlike proprietary controls, notices contained in deeds or other instruments to be filed in the local land records are not intended to convey an interest in real property. Consequently, such notices do not serve as enforceable restrictions on the future use of the property. As a matter of practice, such notices are contained in deeds conveying real property or an interest therein or some other written instrument that would be examined during a title search on a particular parcel or parcels.

These documents are intended to provide notice to anyone

³⁴ For more information about state one-call systems, please see <http://www.epa.gov/oswer/docs/iwg/OneCall.pdf>

reviewing the chain of title (e.g., lenders, prospective purchasers) regarding contamination on the property and to identify whether there are resulting restrictions. As a result, where exposure should be limited, a notice in a deed or other instrument alone generally will not be sufficient to assure protectiveness. Nevertheless, often there are benefits from the use of such notices. For example, notices may effectively discourage developers from purchasing the property for inappropriate land uses and lenders from funding development for such uses.

Notices to be filed in the local land records have been commonly used for general notification of site conditions in remedies under RCRA, Brownfields, UST, and CERCLA programs. This includes, for example, the requirements of § 120(h)(3) of CERCLA pertaining to federal facilities or the model RD/ RA CD requirement that any settling defendant owner record a notice to successors-in-title informing future owners of the NPL listing, the ROD, and the CD. See *Model RD/RA Consent Decree*, Office of Site Remediation Enforcement, Office of Enforcement and Compliance Assistance. October 2009, section v, paragraph 9).

Additionally, there are explicit notice requirements for certain situations under RCRA. Specifically, 40 CFR § 264.119(b)(1) states that for post-closure notices, owners/operators of RCRA hazardous waste disposal units are responsible for submitting a survey plat and ensuring that a permanent notation is made on the deed stating that: (1) hazardous waste management occurred on the property; (2) its use is restricted under RCRA 40 CFR § 264 Subpart G; and (3) the survey plat and other applicable information is available at the local zoning authority or other authority with jurisdiction over local land use and with the EPA Regional Administrator. According to 40 CFR § 264.119(b), these actions must be completed within 60 days of closure certification. Because individual state requirements for Brownfields and UST sites vary, the site manager and site attorney should research the specific requirements within the appropriate jurisdiction.

Notices can be somewhat easier to develop and implement than proprietary controls. Notices typically consist of a legal description of the property and a description of the type, location, and concentration of residual contamination and any associated use restrictions. The drafter(s) of the notice should take care to avoid unintentionally suggesting that the notice creates rights and/or obligations. For example, the recording requirements of some jurisdictions may actually require the conveyance of a property interest as a condition of filing an instrument in the deed records.

The site attorney may work with an attorney familiar with the recording statutes of the jurisdiction where the site is located to determine the requirements and limitations for recording notices. This should be done well in advance of selecting a notice as part of the response action. For example, a statute may indicate what documents are recordable, the contents of a recordable document, and the procedures for their recordation.

Also, jurisdictions vary on whether the landowner's approval is needed to record a notice. In some jurisdictions, third parties can record notices, whereas in other jurisdictions only the landowner can record a notice. In jurisdictions that allow the removal of the notice by the owner at any time, the enforcement device and/or permit should be clear that the notice must remain in the land records. Also, a small number of jurisdictions remove notices after a specific period of time. In these jurisdictions the enforceable agreement and/or permit should have a re-filing requirement for the notice.

7.2 State Registries of Contaminated Sites

Some states maintain registries of contaminated sites, which can act as an informational IC. The registries often include a list of contaminated sites in the state; annual reports to the legislature summarizing the status of each site on the registry; requirements for inclusion of a notice in deeds that the site is contaminated; and requirements that any person conveying title to property on the registry disclose to all potential purchasers that the property is on the registry. Some laws provide that the use of property on the registry cannot be substantially changed without the state's approval. The site manager and site attorney should determine whether such registries exist early in the response action evaluation process.

A potential limitation of the use of state registries as ICs is that the procedure for listing and removing ICs from registries vary by state and are often discretionary, potentially making the available site information inconsistent or out of date. In addition, information contained in a registry may not be consistently accessed by prospective developers or local government officials in the development application review process. Nevertheless, registries can be useful in combination with other measures as part of an overall response for a site by providing information to the public and regulators.

7.3 Advisories

Advisories are typically publicly issued warnings that provide notice to potential users of a land, surface water, ground water, or other resource of some existing or potential risk associated with that use. For example, an advisory may be issued to owners of private wells in areas where contamination has been detected in ground water at levels that pose a threat to human health; or a state may issue fish consumption advisories³⁵ to protect people from the risks of eating contaminated fish caught in local waters. Advisories are generally issued by public health agencies, either at the federal, state, or local level (e.g., health advisories issued by the U.S. Agency for Toxic Substances and Disease Registry under CERCLA § 104(j)). The site manager and site attorney should work closely with Agency for Toxic Substances and Disease

³⁵ Unlike fishing bans, fish consumption advisories are not enforced by a State or local agencies but rather provide notice to the public of risks posed by contamination.

Registry (ATSDR), state or local government officials to discuss the appropriateness of such advisory services, and to explore options for supporting advisories. Depending on the situation, certain advisories have a specific threshold that must be met for issuance. Therefore, the site manager and site attorney should coordinate early with the appropriate agencies if an advisory will be a component of the response.

7.4 Community Involvement

Due to the nature of informational devices, particularly advisories, community involvement and outreach are often an important part of the process. Consideration should be given to using multiple tools to inform the community such as web sites, mailings, outreach to community associations, and possibly public meetings. Informed community members can be in a position to provide valuable information on possible IC breaches that might otherwise go unnoticed. In developing informational devices, it is helpful to provide information about the ICs and contact information for reporting a breach.

8. MAINTAINING INSTITUTIONAL CONTROLS

Often the most useful post-implementation approach to ensuring the long-term effectiveness of ICs and maintaining the integrity of the cleanup is rigorous periodic monitoring and reporting. The site manager and site attorney should examine available mechanisms designed to ensure IC compliance at all stages throughout the enforcement process. Generally, the responsible parties, including federal facilities, have the primary obligation to monitor and report on the effectiveness of the ICs. This section discusses some of the tools that may be available to the site manager for ensuring appropriate monitoring and reporting of ICs.

Maintaining Institutional Controls:

- General Considerations (Section 8.1)
- Operations and Maintenance (Section 8.2)
- Periodic Reviews (Section 8.3)
- State, Tribal, and Local Government Oversight (Section 8.4)
- Out-Sourced Monitoring (Section 8.5)
- Community Monitoring (Section 8.6)
- Funding for IC Monitoring and Reporting (Section 8.7)

8.1 General Considerations

Because land use and ownership changes can occur over a relatively short time, developers and other parties may not be fully aware of the ICs that have been put in place as part of a cleanup. It generally should be more effective and protective of human health to proactively address potential weaknesses

in ICs revealed by changes in land use before the land use changes actually do occur. The site manager³⁶ should ensure that there is a process in place to facilitate the routine and critical evaluation of the ICs to determine: (1) whether the instrument remains in place; and (2) whether the ICs are meeting the stated objectives and performance goals and are providing the protection required by the response.

Comprehensive monitoring is generally more effective when there is early planning and coordination, a clear delineation of roles and responsibilities, and detailed reporting requirements. In most situations, it is recommended that monitoring and reporting requirements be layered to increase the likelihood that any breaches will be detected early (e.g., by assigning the monitoring responsibility for an IC to more than one party). At the same time, it is important to ensure that each party with monitoring and reporting responsibility is held accountable and does not make shared responsibility a reason for less vigilant monitoring. Where monitoring and reporting is assigned to more than one entity, a mechanism, such as the designation of an entity with the lead monitoring and reporting responsibility may be useful in ensuring a successful monitoring and reporting effort. In addition, the site manager may want to include frequent reminders of the restrictions via such means as correspondence, notification in access letters for quarterly monitoring, and affixing warning labels to well casings that reiterate applicable restrictions. In many cases, a good way to help ensure effective and comprehensive monitoring is to develop and use an ICIAP or equivalent document early in the site management process.

8.2 Operations and Maintenance

Effective IC monitoring typically begins with a thorough understanding of the IC objectives and the desired audience for each IC, and recognition of the potential weaknesses of each IC. A primary tool for site managers can be a detailed O&M plan, an ICIAP, or other plan related to the long-term stewardship of ICs which should describe at a minimum: (1) monitoring activities and schedules; (2) responsibilities for performing each task; (3) reporting requirements; and (4) a process for addressing any potential IC issues that may arise during implementation or the reporting period.

Provisions describing IC monitoring, reporting, and enforcement mechanisms can be included in an appropriate decision document, ICIAP, and/or enforcement document. Such provisions can include a requirement in a CD to develop a detailed monitoring and reporting plan, or a description of the requirements themselves. At RCRA sites with a permit or order in place, the IC monitoring and reporting requirements may be specified in a separate document (and referenced in the permit or order) or in the permit and/or order itself. Most

³⁶ Even the site manager may change over time. For instance, the site manager who initiates the IC may be at EPA but ultimately the relevant site manager may become a representative from the State.

Brownfields and UST sites have similar decision documents, cooperative agreements, or work plans, and IC monitoring and reporting should be included in those documents as well. If the site manager anticipates that monitoring or reporting requirements may be changed at some point, language should be added to the appropriate enforceable document to explain the process for approval of the change.

The requirements and frequency of IC monitoring normally will vary depending upon site-specific circumstances, such as the types of IC instruments and monitoring tools used and how the IC is used to help ensure protectiveness. In many cases, inspections and reporting can be incorporated into other site activities, such as routine ground water monitoring and annual reports. If, after a sufficient period, the reliability of the ICs is better understood, the site manager may revisit the monitoring practices on a site-specific basis.

Long-term stewardship procedures should be in place to ensure proper maintenance and monitoring of effective ICs. The procedures can be included in the site O&M plan. The plan should address procedures to ensure regular inspection of ICs at the site; in appropriate circumstances, an annual certification to EPA that the required ICs are in place and effective may be useful. The entities responsible for implementing the plan may also send annual or semi-annual reminder letters to property owners to remind them of the existence of an IC and its provisions. Additionally, such entities should explore whether additional actions can help ensure compliance with the ICs. These actions could include the development of a communications plan and exploring the use of the state's one-call system as part of long-term stewardship.

8.3 Periodic Reviews

As discussed above, monitoring should be sufficiently frequent to ensure that ICs remain effective. In the absence of information to support a different review period, annual reviews are recommended. Reviews may include documentation to show that ICs remain in place and are effective. When changes to site conditions are likely to take place in less than a year (e.g., the site is an area being redeveloped or there has been a change in the zoning designation), more frequent monitoring should take place. If it is highly unlikely that site conditions will change, a monitoring period longer than a year may be appropriate. Some laws or regulations may specify a minimum review period for certain situations, such as the FYR required for certain Superfund remedial actions. Section 121 of CERCLA requires FYRs when remedial actions result in hazardous substances, pollutants, or contaminants being left in place. The NCP further clarifies that FYRs are to be conducted when remedial actions do not allow for UU/UE. The periodic review provides an important opportunity for a site manager to conduct an objective review of the status and performance of ICs.

During the periodic review, the site manager, facility owner/operator, or other review/enforcement authority normally should inspect the site and critically evaluate the effectiveness of the ICs in protecting human health and the environment and/or ensuring the integrity of any engineered response action (e.g., conduct site visits, and review aerial photos or other physical documentation to determine if there is any land or resource use inconsistent with the response). In addition, the site attorney should generally review updated title work to the property to determine whether proprietary controls have been modified or terminated, and should review the local government's zoning regulations for the site to determine if there have been any changes. Also, the enforcement team should follow up on the review provision in any settlement document and, if appropriate, request that the settling parties investigate the performance of the ICs.

If the ICs are not in place by the time of the periodic review, a schedule should be prepared that indicates when the ICs are to be implemented and the person or entity responsible for that activity should be identified. If EPA determines that additional ICs are necessary to protect human health and the environment, the enforcement team should review the enforceable document to determine if the settling party may be required to implement additional ICs or take additional actions (e.g., enforcement tools that may allow for modifications or pursuit of additional work under certain circumstances). An ESD or ROD amendment may also be necessary at Superfund remedial sites if additional ICs or other actions are necessary (or if ICs are being discontinued). In the case of RCRA, when the IC is being implemented by a facility-specific mechanism like a RCRA corrective action permit or order, that document may need to be amended to reflect the current status of the facility.

8.4 State, Tribal, and Local Government Oversight

State, tribal, and local governments are generally important partners in the long-term monitoring and reporting of ICs. Depending on the IC instrument and which agency is the lead agency, the state, tribal, or local government may have direct authority for long-term monitoring of ICs. At sites that rely upon state, tribal or local governments to implement, monitor and enforce ICs, the parties responsible for the cleanup at that site should cooperate with those governmental authorities to ensure the ICs remain effective. The site manager and responsible party are encouraged to coordinate with these governments when developing an approach to inspecting, monitoring, and reporting on ICs. Further, the site manager and site attorney should actively encourage the state, tribal, and/or local governments to undertake monitoring of ICs in order to avoid the need to change the response action. Such monitoring activities may include:

- Inspecting and reporting on sites following the issuance of building/excavation permits to ensure compliance with their terms;

- Inspecting and reporting on sites for compliance with proprietary controls when the state or local government is the holder of a property interest, such as an easement;
- Inspecting and reporting on compliance with zoning restrictions; and
- Reporting proposed zoning amendments that may significantly alter land use at the site or in the vicinity of the site.

State, tribal, and local government laws also may influence the implementation of proprietary controls. In states that have adopted legislation enabling environmental covenants, state law may specify certain criteria as to who qualifies as a grantee, and also may reserve enforcement authority for the state in the event that the state is not the grantee. Since the grantee may assume responsibility for monitoring and reporting on its status, a potential grantee should understand its responsibilities before accepting the conveyance of a proprietary control. Thus it generally is important for the site manager and site attorney to evaluate thoroughly the capability and willingness of a state, tribal, or local government to report on and pursue problems with the IC(s) for as long as it remains in place.

In some cases, the grantee may share monitoring responsibilities with contractors (see discussion on third-party monitoring below), community stakeholders, local governments, or others who have agreed to participate in the monitoring and reporting. Where possible, the arrangements among these parties should be documented in writing to describe commonly understood roles and responsibilities for proper and effective monitoring, reporting, and follow-up. In situations where EPA is the grantee, the site manager and site attorney should ensure that procedures are in place to appropriately monitor, report on, and follow-up on whether the parties are fulfilling their responsibilities at the site and to transition or terminate those responsibilities once the response action is complete.

8.5 Out-Sourced Monitoring

In some instances, monitoring and reporting services may be contracted out, or otherwise arranged by the entity obligated to do monitoring. However, this arrangement does not alter any legal obligations of responsible parties, grantees, and others for maintaining the response action and ensuring its protectiveness. When monitoring and reporting activities are conducted under a contract, the site manager and site attorney should ensure that the scope of monitoring activities is clear; an adequate funding source is available for the duration of this method of monitoring; and the reporting obligations are clearly defined (i.e. to whom the contractor reports and the frequency and content of reports).

8.6 Community Monitoring

Local residents, community associations, and interested organizations can be valuable resources for day-to-day monitoring of ICs. Because community members who live or work near the site will often have a vested interest in ensuring compliance with the ICs, they are generally the first to recognize changes at the site. Although local residents should not be relied upon as the primary or sole means of monitoring, the site manager should encourage local stakeholders to become involved in monitoring ICs. Community monitoring can be fostered through public outreach activities to inform nearby residents of the purpose of the ICs and what types of activities may adversely affect the integrity of the response action. In addition to public meetings and notices, mailings to nearby homeowner associations and property owners may be used to provide community stakeholders with information about the ICs and contact information for reporting a breach.

8.7 Funding for IC Monitoring and Reporting

The availability of resources should be considered when monitoring and reporting plans are developed. State agencies, local governments, and other organizations may require additional funding to meet IC monitoring and reporting requirements. This process should begin with developing a cost estimate for monitoring and reporting activities over the full life-cycle of the IC. The site manager and site attorney may provide state, tribal and local government officials with information they may want to consider concerning possible approaches and strategies to ensure that adequate funding will be available to provide adequate IC monitoring, reporting, and enforcement, including:

- Using trust funds, surety bonds, letters of credit, insurance or other means of financial assurance, as appropriate;
- Billing the responsible party;
- Requiring the responsible party to set up escrow accounts; and
- Using settlement proceeds to fund site-specific accounts for ICs.

In some instances, it may be possible for state, tribal or local authorities to use CERCLA section 107 liability provisions to secure PRP financing for these purposes. It may also be possible to ensure that all potential future IC costs are covered by the financial assurance requirements section of an enforcement document, where appropriate (e.g., three-party consent decree between U.S., state, and PRP). Additionally, financial assurance mechanisms should be reviewed periodically to ensure that they remain adequate.

Under the Brownfields Program, EPA provides grants to state and local governments to carry out site assessment and cleanup activities and to nonprofit organizations to carry out

cleanup. Pursuant to EPA's grant guidelines³⁷ and section 104(k)(4)(C) of CERCLA, a local government that is a Brownfields grant recipient can use up to ten percent of the grant to monitor and enforce ICs designed to prevent human exposure to any hazardous substance from a Brownfields site. States can use grant funds to establish or enhance their response program for addressing Brownfields sites, including O&M or long-term monitoring activities.

For Fund-financed remedial actions, CERCLA § 104(c) requires states to pay for, or ensure payment of, all future O&M for remedial actions. EPA may not use the Fund for O&M activities except for oversight of O&M activities. Generally, it may be appropriate to consider initial implementation of ICs as part of a remedial action; generally, IC monitoring, reporting, and enforcement are considered as O&M-type activities.

Guidance on when a remedy may be considered to be in the O&M phase is provided in *Operation and Maintenance in the Superfund Program*, OSWER 9200.1-37S, EPA 540-F-01-004, May 2001.

Regarding CERCLA Fund-financed emergency and time-critical removal actions, EPA generally does not provide financial assistance to states for ICs. For non-time-critical removal actions, EPA does not generally use the Fund to pay directly for IC monitoring or enforcement, (although the Agency may provide financial assistance for initial implementation through cooperative agreements).

9. ENFORCING INSTITUTIONAL CONTROLS

This section provides an overview of the types of enforcement tools that may be available for dealing with potential problems involving improper or incomplete implementation, maintenance, and breaches of ICs. The site manager and site attorney should examine IC compliance at all stages throughout the enforcement process.³⁸ This section illustrates some of the more common enforcement actions that site managers and site attorneys may encounter, and is not intended to provide a comprehensive discussion of all enforcement actions available at a given site.

³⁷ For more information on EPA's guidelines for Brownfields Assessment Grants, please see: <http://www.epa.gov/oswer/docs/grants/epa-oswer-orcr-09-04.pdf>

³⁸ The EPA has recently elevated the importance of ensuring ICs, required as part of the remedy, are being enforced. A new Government Performance and Results Act (GPRA) performance measure, the Site-wide Ready for Anticipated Use (SWRAU), and another new measure, the Cross Program Revitalization Measure (CPRM) contain specific IC requirements. For more information on how ICs relate to the land revitalization performance measures, see *Guidance for Documenting and Reporting Performance in Achieving Land Revitalization* (EPA 2007).

9.1 General Considerations

Often, the preferred and fastest approach for dealing with IC enforcement is to seek voluntary compliance through early problem identification and informal communication. Many issues can be effectively addressed at the site manager and site attorney level with a phone call and appropriate follow-up. Such follow-up may include site visits and letters to ensure complete communication and to create a record. However, there may be occasions when more formal steps are necessary. Enforcement can occur in several ways depending upon the type of IC instrument, the authority being used, the party attempting to compel an activity, and the party responsible for taking an action.

Enforcing Institutional Controls

- General Considerations (Section 9.1)
- Enforcement of Governmental Controls (Section 9.2)
- Enforcement of Proprietary Controls (Section 9.3)
- Enforcement and Permit Tools with IC Components (Section 9.4)
- Informational Devices (Section 9.5)
- Commencement of New Actions (Section 9.6)
- Other Enforcement Concerns (Section 9.7)
- State, Tribal, and Local Government Enforcement Roles and Assurances (Section 9.8)

For Superfund remedies that include ICs, EPA strives to ensure that the potentially responsible parties implement, maintain, and enforce ICs, as appropriate. See *"Enforcement First" to Ensure Effective Institutional Controls at Superfund Sites*, OSWER 9208.2, May 17, 2006. EPA uses a variety of negotiation and enforcement tools to obtain potentially responsible party participation in carrying out Superfund site cleanups, including any IC obligations. See *Negotiation and Enforcement Strategies to Achieve Timely Settlement and Implementation of Remedial Design and Remedial Action at Superfund Sites*, Office of Enforcement and Compliance Assurance memorandum, June 17, 1999. Ensuring that ICs are properly implemented and remain protective is important to both EPA and potentially responsible parties. Therefore case teams should first pursue a cooperative approach when working with potentially responsible parties to enforce ICs.

9.2 Enforcement of Governmental Controls

Governmental controls are typically implemented and maintained by a governmental entity other than the one performing or overseeing the site cleanup. This does not relieve responsible parties from monitoring and reporting on the effectiveness of the ICs (e.g., notifying regulators of any

change to or breach of a relied upon governmental control). Some of the most common governmental controls used in CERCLA, Brownfields, UST, and RCRA remedies are zoning ordinances, excavation/building codes, well construction/abandonment requirements, ground water regulations, ground water management zones, fishing bans/restrictions; waterways use restrictions, and restrictions on, in, and/or near water/shoreline access and/or development.³⁹

Several difficulties can arise when using ICs in the form of governmental controls including: (1) the IC instrument may have not been implemented or, if implemented, may not address the specific environmental problem because of vagueness or some other deficiency in the drafting of the IC; (2) the IC may not have been appropriately monitored or reported (e.g., failure to notify environmental regulators that a zoning ordinance expires); (3) a governmental entity may not actively respond to an identified problem or breach of an IC; and (4) a governmental entity may inadvertently undermine the IC through its own actions, undertaken for unrelated purposes (e.g., amending zoning to allow uses that would not have been allowed under the prior classification). The challenge for site managers and site attorneys in the use of these types of ICs is that implementing, maintaining, and enforcing ICs generally fall within the authority and discretion of the originating governmental entity. These challenges are compounded by the fact that communication between the environmental regulators and the relevant governmental decision-maker (e.g., the well permitting office) may not be part of the established administrative process of that entity.

Typically, governmental control activities are governed by a defined administrative process. Site attorneys should familiarize themselves with this process, including written petitions and/or administrative hearings, in the event an action to enforce a governmental control is necessary.

In addition, site managers and site attorneys should evaluate the capability and willingness of a governmental entity to implement and enforce any proposed IC in the form of a governmental control, and involve that entity early in the response process when discussing the types of ICs being considered. In certain cases under Superfund, cooperative agreements may be developed to assist the local government in the initial (but not O&M) implementation of the necessary ICs at Fund-lead sites. Local governments may also arrange for direct compensation from other parties for the implementation, maintenance, and enforcement of ICs. It may be beneficial for the state, tribal and local governments to

work with and reach a common understanding with the responsible parties and other stakeholders about various IC implementation issues including the roles and responsibilities of the local government in enforcing these controls. This common understanding will likely vary depending upon whether federal, state, and/or local authority is used. Where appropriate, the site manager or site attorney may consider providing IC training to local government.

9.3 Enforcement of Proprietary Controls

The most common examples of proprietary controls used in CERCLA, Brownfields, UST, and RCRA cleanups are easements and covenants. The requirements for enforcing proprietary controls may vary considerably among states, and site attorneys are encouraged to coordinate with attorneys familiar with the laws of the particular jurisdiction.

If proprietary controls are implemented under state legislation that are tailored to the requirements of ICs (e.g., a State's adoption of UECA), there likely will be clear enforcement procedures for the state, a grantee, a third-party beneficiary or others. Generally, under state-adopted laws modeled after UECA, many parties may have the authority to enforce an environmental covenant, including: (1) any parties to the covenant or any party given the right to enforce under the covenant; (2) the state environmental agency; (3) a person whose interest in the real property or liability may be affected by the violation of the covenant (this can include responsible parties); and (4) a unit of local government. If no specific state law addressing environmental covenants exists, these controls will be based more generally on the state's contract and real property law.

Under either state statute or case law, certain enforcement challenges may arise. The grantee will generally have the primary responsibility for enforcing a proprietary control. EPA will typically rely on another party to act as the grantee, due to the limitations on EPA's authority to hold proprietary interests. The grantee may be able to enforce proprietary control restrictions and obligations against the owner(s) of the property pursuant to state law in state court. To help ensure that a grantee other than EPA takes appropriate action in the event of an IC violation, it can be useful for that grantee and other parties to enter into agreements that clearly define the roles and responsibilities of the grantee.

In those cases where EPA is the grantee or has authority to enforce a proprietary control as a third-party beneficiary, the Region should refer the case to DOJ for appropriate action in state or federal court where an enforcement action can remedy the violation. For a more detailed discussion of the third-party beneficiary status, consult *Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls*, Office of Enforcement and Compliance Assistance memorandum, April 19, 2004. Furthermore, in states that have adopted legislation tailored to the requirements of environmental covenants, (such as those recommended in UECA), the Region may be able to

³⁹ Note: these tools may not be available at certain federal facilities. The federal facility is generally responsible for monitoring, reporting, and enforcing any violations of the ICs and other land use controls at CERCLA cleanups, even for surplus property that has been transferred to private use. EPA and often state agencies may enforce the ROD and other post-ROD enforceable document if a federal facility fails to enforce or rectify any IC breach.

refer an enforcement action to DOJ for appropriate action in state or federal court where EPA qualifies as an "agency" that signed the covenant. Regions should note that state law may specify that the agency's enforcement right in the covenant is not based on an interest in real property, and is thus not an acquisition of real property by EPA.

In the RCRA, Brownfields, and UST context, EPA has no authority to be the grantee, so enforcement by EPA is not available unless it is a third-party beneficiary or it has agency rights under a state's UECA or other statute. If a proprietary control is used and another party is the grantee, the regulatory agency may be able to rely on the grantee to act as the enforcer.

9.4 Enforcement and Permit Tools with IC Components .

Enforcement and permit tools that may be used to require implementation and maintenance of an IC, or seek a remedy for an IC breach, include CDs, FFAs, UAOs, and permits.

Through these instruments, EPA or another regulatory agency may be able to specify the restrictions and requirements for implementing, maintaining, and/or fixing a breach to the IC in the enforceable document. If the responsible parties fail to carry out their obligations under a CD, order, or permit, EPA or another regulatory agency may be able to enforce those

obligations under the appropriate CERCLA, Brownfields, or UST, or RCRA authority. The remedies available may include requiring the defendant to implement the IC or, in some circumstances, pay certain costs or penalties. Such

⁴⁰ A consent decree can also be enforced as an order of the court.

Figure 1. Examples of IC Categories and Enforcement Processes

IC Categories	IC Authorities and Examples	Typical Enforcement Processes
Governmental Controls	<p><i>Police Power</i></p> <ul style="list-style-type: none"> • Zoning ordinances • Ground water use restrictions • Building codes / permit requirements 	<p>Local government jurisdiction; enforcement may be possible through administrative process or legal action.</p> <p>State agency; enforcement may be possible through administrative process or legal action.</p>
Proprietary Controls	<p><i>State statutory and common law</i></p> <ul style="list-style-type: none"> • Easements and covenants 	<p>The grantee of a proprietary control may be able to seek legal action against the property owner for activities prohibited by its proprietary control.</p> <p>EPA, the state, or another party may be able to enforce the proprietary control under state property law if they are a third-party beneficiary of the easement or covenant.</p> <p>Even if they are not the grantee, EPA or any other state or federal agency that signed the covenant may be able to enforce the proprietary control in states that have adopted legislation similar to UECA as the "agency" that approves of the covenant.</p> <p>EPA may be able to order a responsible party to implement a proprietary control</p>
Informational Devices	<p><i>Police Power</i></p> <ul style="list-style-type: none"> • Health advisories • Fish advisories • Deed notices • State registries of waste sites • Tracking systems 	<p>While informational devices typically are not themselves enforceable, site-specific circumstances may warrant action by EPA. Regions should consult with OECA to discuss possible action such as issue an order to a responsible party if an imminent and substantial endangerment exists at a site due to lack of a recorded notice.</p> <p>Public health agencies; issuance through administrative process.</p>
Enforcement and Permit Tools with IC Components	<p><i>Federal and state statutory law</i></p> <ul style="list-style-type: none"> • Superfund CDs, UAOs, AOCs, and Federal Facility Agreements (FFAs) • RCRA orders and permits • Orders issued under state authority 	<p>EPA may be able to use a variety of legal instruments to require responsible parties or the signatories of the agreement to control the use of land or resources.</p> <p>If a responsible party is the grantor or grantee of the proprietary control, EPA may be able to employ these tools to enforce the requirements of the IC as the "agency" that approves of the covenant.</p>

payments may be required to reimburse an agency that has incurred the cost of implementing or maintaining the control, cover the costs incurred when addressing IC breaches, and/or pay penalties (stipulated and/or statutory).

An action pursuant to the CD, order, FFA, or permit generally will be effective only against the parties specified in these documents. For example, a provision in a CD or AOC may require a facility operator to secure a proprietary control to prevent a particular type of land use. However, the land owner may not be a party to the CD or AOC and, therefore, would not be obligated to convey the interest. Furthermore, the

requirements of the CD may not be enforceable against any successor-in-title if the successor was not a party to the CD.

If proprietary controls are needed on property that is not owned by a responsible party, enforcement documents generally require that the responsible party use "best efforts" to obtain access and to implement the controls. In cases where the responsible party does not use its best efforts to implement the proprietary controls, EPA can seek to enforce the relevant provisions of the CD, order, FFA or permit in place. If the responsible party is unable to acquire proprietary controls on the property of concern despite exercising best efforts (e.g.,

the property owner is unwilling to sell or agree on a price for an easement or other property interest), there are several approaches to consider, depending on the situation. For Superfund remedial actions, the site attorney may consider

acquiring or condemning the necessary real property interests subject to the requirements of CERCLA §104(j). Under

CERCLA, many state statutes, and typically under consent agreements such as CDs, the responsible party may be required to reimburse EPA and/or the state for the cost of acquiring the control either through negotiated purchase or condemnation. Alternatively, this may be resolved by selecting and implementing different types of ICs. If other ICs are not viable and the long-term protectiveness of the response is threatened, it may be necessary to reconsider the response action that was selected.

9.5 Informational Devices

The most common informational devices used in UST, Brownfields, federal facility, RCRA, and CERCLA cleanups are notices filed in local land records, state registries, and advisories. Notices are useful devices, but are not typically enforceable. However, some states recently have established laws that allow the state to enforce placement of notices in the local land records under state environmental laws. Similarly, many states are developing laws that require sites with ICs to be placed in a registry. However, these laws typically only apply to the listing of sites in registries, and do not affirmatively limit land or resource use at a site.

9.6 Commencement of New Actions

Where ICs are not properly implemented or maintained, it may be necessary to commence an enforcement action against the responsible party. For example, it may be possible to issue a UAO to require the responsible party to use best efforts to acquire real property interests limiting future land use where zoning restrictions are repealed.

In the event of an IC violation, the site attorney may consider issuing an administrative order under CERCLA § 106(a) and/or RCRA § 7003(a) requiring that the IC be maintained if there is a resulting actual or threatened imminent and substantial endangerment to human health and the environment. If the administrative order is not complied with, EPA may seek judicial enforcement of the order. If the party responsible for enforcing an IC fails to do so in a timely manner, EPA may also use these authorities to seek a court order imposing the IC.

9.7 Other Enforcement Concerns

One significant enforcement concern may be the premature close-out of CDs, orders, FFAs or permits despite a long-term requirement for ICs. Often, a responsible party is anxious to close out its CD, order, or permit and end its relationship with

regulatory agencies through those documents once the construction work is complete and routine site maintenance has commenced. It is important that the site manager and site attorney retain the appropriate enforcement authority for implementing, maintaining, and enforcing the ICs over the duration of the period in which ICs may be needed. In some cases, ICs, and, therefore, enforcement instruments, need to be retained for a long period of time. In other cases, such as RCRA permits that have a specific period of performance and long-term requirements for ICs, retaining an adequate instrument mechanism may be needed to ensure the long-term durability, reliability, and effectiveness of the control. An additional area of concern is the change of ownership of facilities subject to orders without proper notification to the site manager. A RCRA order, or other enforceable device, may include a requirement for notification of change of ownership.

9.8 State, Tribal, and Local Government Enforcement Roles and Assurances

Many governmental controls are established under state, tribal, or local jurisdiction. To keep remedies protective, Regions should encourage states, tribes, and local agencies to be proactive in ensuring that ICs subject to their authorities are properly maintained. The site manager and site attorney may choose to request some form of written commitment from the appropriate state, tribal, or local government regarding its capability and willingness to maintain, oversee, and enforce the ICs.

In considering the capabilities and willingness to maintain, oversee, and enforce the ICs, the source of funding for these activities can be a particularly important factor, since a lack of funding may lead to IC breaches and an un-protective response action. The format for these commitments will likely vary depending upon the available state, tribal and/or local authority. A written ICIAP or equivalent document can be a valuable tool in helping define goals, planned activities, and roles, and in establishing relationships.

10. SUMMARY

ICs are often a vital component of remedies in most cleanup programs, including the five programs addressed in this guidance. However, over time, Regions should continue to review their effectiveness in light of any changes to land use, communities, laws, the condition and location of subsurface materials, and responsible entities. This guidance document provides an overview of some key issues the Regions may encounter when evaluating whether ICs are properly selected, implemented, maintained, and enforced.

⁴¹ Under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (URA) (Pub. L. No. 91-646), negotiations that include offering compensation are required to be completed first.

- When planning and selecting ICs, the site manager and site attorney should familiarize themselves with appropriate state statutes and identify the governmental bodies that have jurisdiction over the site. It may be useful to collaborate with attorneys and remedial and/or removal practitioners familiar with the laws, regulations, and practices in the jurisdiction where the site is located.
- Meeting with community members and local government representatives is often important throughout the IC life cycle to ensure that the need for ICs is understood and accepted as necessary for ensuring protection of human health and the environment.
- An appropriate tool, such as a CD, order, or permit (e.g., under CERCLA, RCRA, and/or state law) should be used in order to implement the cleanup, including any ICs that are part of the cleanup action.
- If a proprietary control is being implemented, selection of an appropriate grantee and careful drafting of the language of the conveyance is often important.
- If an IC in the form of a governmental control is used, the site manager and site attorney should work closely with the state or local government that has jurisdiction to ensure that it has the capability and willingness to implement and enforce the control.
- A good way to ensure effective implementation of ICs is to develop an ICIAP that documents responsibilities over the full life-cycle of each IC, and include this plan, or a reference to it, in the final decision documents. EPA is developing guidance on recommended contents for such a plan.
- A strategy for monitoring and reporting on ICs should be included in the O&M plan for Superfund sites, included in an ICIAP, or developed as part of the permit or order that implements a response decision under RCRA. In addition, the site manager and site attorney should discuss appropriate monitoring roles with the local government and appropriate state agencies.
- If an IC is not being properly maintained or is violated, appropriate enforcement actions should be taken.

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Interim Final

APPENDIX B: GLOSSARY OF TERMS

For purposes of this guidance, the following terms are defined as:

Administrative Order on Consent (AOC) - a legally enforceable document signed by EPA and an individual, business, or other entity through which the party agrees to pay for the correction of violations, take the necessary corrective or cleanup actions, or refrain from an activity. An AOC, which may be subject to a comment period, describes the actions to be taken, is civil rather than criminal in nature, and can be enforced in court.

Advisories - Warnings, usually issued by public health agencies, either at the federal, state, or local level, that provide notice to potential users of land, surface water, or ground water that there is some existing or impending risk associated with the use of these resources.

Appurtenant - A legal term meaning "belonging to" or "incidental to." An easement that is deemed to be appurtenant benefits an adjacent parcel of land and is usually held by the owner of the adjacent land. For example, an easement allowing the owner of a parcel of land the right to cross an adjoining parcel would be deemed appurtenant to the easement holder's parcel of land.

Brownfields Site - Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. See CERCLA 101(39) for additional information on what sites may qualify as Brownfields under CERCLA.

Chain of Title - A history of conveyances, judgments, and encumbrances affecting title to real estate from the time that the original patent was granted, or as far back as records are available.

Common Law - The body of English law developed primarily from judicial decisions based on custom and precedent, unwritten in statute or code, and constituting the basis of the legal system in all of the U.S. except Louisiana.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund) - Legislation enacted in 1980 to identify, investigate, and clean up the nation's most contaminated hazardous waste sites and respond to emergency situations involving hazardous substances, pollutants or contaminants.

Condemnation - The process by which a government agency, exercising the power of eminent domain, acquires an interest in property.

Consent Decree (CD) - A legal document, approved by a judge, that formalizes a settlement reached between EPA and responsible parties through which responsible parties will conduct all or part of a cleanup action at a Superfund site, cease or correct actions or processes that are polluting the environment, or otherwise comply with an EPA-initiated enforcement action. The consent decree describes the actions responsible parties will take and is subject to a public comment period.

Conveyance - The transfer of title to property or an interest in property (e.g., an easement) from one person to another.

Cooperative Agreement - An agreement, including CERCLA §104(d) agreements, that transfers money for the accomplishment of authorized activities or tasks.

Corrective Action - EPA can require RCRA treatment, storage, and disposal facilities (TSDFs) handling hazardous waste to undertake corrective actions to clean up contamination resulting from failure to follow hazardous-waste management procedures or other mistakes.

Covenant - A promise by one landowner to another generally made in connection with a conveyance of property (e.g., warranty of title) that may or may not run with the land. Covenants may also include a promise by the holder of a possessory interest in property to use or refrain from using the property in a certain manner. Covenants are similar to easements but have been traditionally subject to somewhat different formal requirements.

Deed - A written instrument that transfers legal title to real property or an interest therein from one party to another. Generally, it contains the names of the grantor and grantee, a description of the property, and the estate being conveyed. It is signed by the grantor, usually acknowledged before a notary public, and should be recorded.

Deed Notice - Commonly refers to a non-enforceable, purely informational provision in a deed that alerts anyone performing a title search to important information about a particular property but may also be used, somewhat confusingly, to refer to other purely informational documents that are recorded in local land records.

Deed Restriction - Not a traditional real property law term, but rather is used in the NCP as a shorthand way to refer to various types of proprietary controls.

Easement - A right that allows the holder to use the property of another or restrict its use according to the terms of the easement. An "affirmative" easement allows the holder to enter upon or use another's property for a particular purpose (e.g., ingress/egress). A "negative" easement imposes limits on how the owner of the servient estate can use the property.

Emergency Removal Action - A CERCLA emergency removal action generally occurs when a release or threatened release requires the lead agency to initiate on-site cleanup activities within hours of determining that a removal is required.

Enforcement Tools - Tools, such as administrative orders or consent decrees, available to EPA under CERCLA and RCRA that can be used to restrict the use of land. Enforcement authority can be used to either (1) prohibit a party from using land in certain ways or from carrying out certain activities at a specified property, or (2) require a settling party to put in place some other form of control, such as a proprietary control.

Explanation of Significant Differences (ESD) - A CERCLA decision document prepared when there has been a significant change in cost, performance, or cost of a remedy selected in a Record of Decision (ROD). The significant change to the remedy may be as a result of new information.

Environmental Data Standards Council (EDSC) - This organization was established in 1999 to oversee a consensus-based process for developing and promoting environmental data standards. In 2005, the responsibility for overseeing the consensus-based process was transferred to the Exchange Network Leadership Council.
<http://www.exchangenetwork.net/standards>

Five-Year Review (FYR) - An evaluation that may be required by §121(c) of CERCLA. Consistent with the NCP (40 CFR §300.430(f)(4)(ii)), Regions should conduct a review at Superfund sites where the remedy does not allow for unlimited use and unrestricted exposure. FYRs are designed to determine whether the remedy at a site remains protective of human health and the environment. Where remedial actions are still under construction, FYRs can help confirm that immediate threats have been addressed and that the remedy is expected to be protective when all remedial actions are completed.

Governmental Controls - Controls using the regulatory authority of a government entity to impose restrictions on citizens or sites under its jurisdiction. Generally, EPA turns to state, local, or tribal governments to enforce existing controls of this type and to establish new controls. Typical examples of governmental controls include zoning, the issuance of building permits, and state and local ground water use restrictions.

Grantee/Grantor - The entity to/from which ownership of a property interest (e.g., an easement) is transferred.

Informational Devices - IC instruments that provide information or notification that residual or capped contamination could remain on site. Common examples include state registries of contaminated properties, notices in deeds, and advisories.

In Gross - A property law term used to describe easements that provide a benefit not related to any property owned by the holder of the easement. Easements used under CERCLA and RCRA generally will be "in gross" because the restrictions generally are not for the benefit of any particular neighboring parcel owned by the holder of the easement.

Institutional Controls - Non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a response action. They are typically used in conjunction with, or as a supplement to, other measures, such as waste treatment or containment. There are generally four categories of ICs: governmental controls; proprietary controls; enforcement and permit tools with IC components; and information devices.

Land Use Control (LUC) - Any restriction or control, including institutional controls and engineering controls, arising from the need to protect human health and the environment, such as the restriction of access or limitation of activities at a site that has residual contamination.

Layering - The use of different types of institutional controls at the same time to enhance the protectiveness of the remedy.

Memorandum of Understanding (MOU) - A non-enforceable document that outlines the intentions of its signatories.

Non-Time-Critical Removal Action - A CERCLA non-time-critical removal action occurs when at least six months are available after determining that a removal is appropriate and before on-site cleanup activities must begin.

Overlay Zone - A set of zoning regulations that supplement (i.e., overlay) those of the underlying district. Developments within the overlay zone normally conform to the requirements of both zones, or the more restrictive of the two. Overlay zones may be used to address issues such as historical areas, flood plains, and environmental contamination.

Post-Removal Site Controls (PRSCs) - Actions necessary to ensure the effectiveness and integrity of the removal action after the completion of the on-site removal action

Proprietary Controls - Use of real property law to prohibit certain activities that may interfere with the engineering remedy applied at a site, or to restrict activities or future uses of a resource that may result in unacceptable risk to human health or the environment. The most common examples of proprietary controls are easements and covenants.

Prospective Purchaser Agreement - An agreement between EPA or a state and the prospective purchaser of a property known to be contaminated. Under the agreement, EPA or the state typically provides the purchaser with a covenant not to sue for the contamination existing at the site as of the date of

the agreement. In return, the purchaser usually provides EPA with a benefit, which may include carrying out actual cleanup work and/or funding for cleanup at the site. EPA generally would enter into such an agreement at sites where an EPA action has been, is currently being, or will be taken. Parties seeking to operate on or lease contaminated property also may be eligible for such an agreement.

Record of Decision (ROD) - A document that selects the remedial action at a CERCLA site. It is a legal document that is an important part of the remedy selection process carried out in accordance with CERCLA. It includes, but it not limited to the following: a basis for the action, the selected remedy, a discussion of the supporting rationale, and response to stakeholder comments.

Resource Conservation and Recovery Act (RCRA) - The public law that creates the framework for the proper treatment, storage, and disposal of hazardous and nonhazardous solid waste. RCRA focuses on active and future facilities and does not address abandoned or historical sites which are managed under CERCLA, commonly known as Superfund.

Responsible Party - The term "responsible party" as used in this document is intended to mean a person or entity with cleanup or IC responsibilities under the various cleanup programs addressed in this guidance.

"Run with the Land" - A term indicating that a proprietary control will bind subsequent owners of the affected parcel as opposed to one that is personal and binds only the original parties.

Subdivision Ordinance - A local ordinance that regulates the conversion of land into building lots for development. The regulations establish requirements for streets, utilities, site design, and procedures for dedicating land for open space or other public purposes to the local government (or fees in lieu of dedication). In short, subdivision ordinances regulate land conversion, whereas zoning ordinances regulate land use.

Superfund State Contract (SSC) - An agreement between EPA and a state generally before remedial action begins at Superfund sites. Typically, the SSC documents the state's assurances under CERCLA and outlines the roles and responsibilities of both parties.

Time-Critical Removal Action - A time-critical removal action occurs when less than six months are available after determining that a removal is appropriate and before on-site cleanup activities must begin.

Uniform Environmental Covenants Act (UECA) - A model state legislation that addresses the use of proprietary controls as ICs (e.g., environmental covenants) and can be used to reduce the legal and management complications and common law impediments associated with ICs. UECA was developed by the National Conference of Commissioners on Uniform State Laws. <http://www.environmentalcovenants.org/ueca>

Unilateral Administrative Order (UAO) - A legal document signed by EPA directing any person to take corrective action or refrain from an activity. It describes the violations and actions to be taken, and can be enforced in court.

Unlimited Use/Unrestricted Exposure (UU/UE) - As discussed in EPA guidance documents, UU/UE generally refers to a situation when there are no exposure limitations required for the remedy at a site to be protective.

Zoning - A widely used type of land use control that is based upon the police power. Zoning ordinances typically consist of a map indicating the various land use zones (or districts) in the jurisdiction, and text that sets forth regulations for the development of land by zone.

Appendix B: EPA Parcel A residential use letter; EPA 2005 ESD.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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NEW YORK, NY 10007-1866

NOV 23 2009

Ralph Suozzi, Mayor
City of Glen Cove
City Hall
9 Glen Street
Glen Cove, NY 11542

Re: Request for Parcel A Future Use Re-evaluation, Li Tungsten Superfund site, Glen Cove, NY

Dear Mayor Suozzi:

This is in response to your letter of October 21, 2008, in which the City of Glen Cove requested that EPA evaluate its remedy as it pertains to Parcel A of the above-referenced site, to determine whether the original remedy, as implemented, supports a residential future use.

As you know, EPA selected a remedy in its 1999 Record of Decision (ROD) that was designed to be protective of a commercial, "seaport-style" future use at the Site. At the request of the City, EPA re-evaluated the remedy for portions of the Site, and we determined that the remedy for Parcels B, C, and C' of the former Li Tungsten facility property would be remediated sufficiently to support a residential future use if the radionuclides of potential concern, i.e., those of the uranium and thorium chains, were remediated to a more stringent cleanup level than that set forth in the ROD. This finding was documented in 2005 in EPA's Explanation of Significant Differences (ESD) document.

Specifically, EPA's ESD made the finding that the ROD's clean-up levels for arsenic and lead, i.e. 24 parts per million (ppm) and 400 ppm, respectively, were sufficiently protective of a residential use within the context of the Li Tungsten cleanup. EPA did find in the ESD, however, that the cleanup levels for the radionuclides of concern, i.e. the radionuclides associated with the uranium and thorium decay chains, required modification to a cleanup level approximately one half of that contained in the original ROD, to be sufficiently protective for future residents. In the ESD, EPA did not make a determination regarding a future residential use scenario of Parcel A, but EPA believes

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that its cleanup of Parcel A with regard to the parameters mentioned above would meet residential cleanup requirements.

However, in response to your request, EPA has performed an evaluation which has determined that the pre-remediation concentrations of other potential contaminants on Parcel A, such as benzo(a)pyrene and other polycyclic aromatic hydrocarbons (PAHs), result in calculations of cumulative risk from all sources that are outside of EPA's cancer risk range. PAHs were not originally targeted by EPA for remediation because PAHs did not present an unacceptable risk for the anticipated commercial future use of the Site. Additionally, based upon new information, EPA has determined that another heavy metal associated with Li Tungsten operations, i.e., cobalt, could result in unacceptable non-cancer health hazards in residential children.

These findings require a note of explanation. This most recent evaluation used available data from Malcolm Pirnie's 1998 Remedial Investigation (RI) report to develop exposure point concentrations for chemicals that were not originally targeted in the ROD for cleanup i.e., it was assumed that these contaminant concentrations had not been reduced as a result of the Site remediation. For contaminants of concern, targeted clean-up values were used as the assumed concentration actually remaining at the Site. For example, the evaluation's exposure point concentration for arsenic was 24 ppm. Furthermore, at least one of these chemicals' toxicity values i.e., cobalt, has changed since the time of the ROD, and EPA believes that the revised toxicity information is appropriate to be used in its present re-evaluation of risk for Parcel A.

Therefore, in order to utilize Parcel A for future residential use, two possible options are:

- Performance of additional sampling to ascertain current conditions and risks on Parcel A. As a result of the 1999 ROD, EPA excavated many areas contaminated by lead, arsenic, and the radionuclides of concern which may have been co-located with cobalt, PAHs, etc. Additional sampling may reveal that levels of these "non ROD" contaminants may also have decreased because of subsequent remediation. Sample results and risk evaluation could be used to determine whether residential future use would be acceptable on Parcel A and, if not, the additional sampling could be used to target areas for additional excavation such that risks would be reduced to acceptable levels. Any additional sampling, risk assessment and/or remedial excavation on Parcel A would need to be undertaken by the City and would require EPA and State review and approval.
- Presumptive remediation to address risk by eliminating exposure pathways. Because the exposure pathways presently driving the risk are associated with the potential for extended human contact, the placement and maintenance of an acceptable barrier, e.g., two feet of clean cover between exposure points and final grade, may be an acceptable approach to address it. However, such remediation would naturally require additional restrictions on future development, e.g., maintenance of the two feet of cover and its effectiveness.

The above Parcel A discussion can be viewed in the context of the City's ongoing development of a Site Management Plan for the former facility property, which should address both the proper performance of construction activities as well as the necessary institutional controls that require implementation, e.g., no water withdrawals from the underlying Upper Glacial Aquifer, building/infrastructure designs consistent with eliminating the potential for soil vapor intrusion, etc. Also, depending on how the City plans to proceed with respect to Parcel A, EPA may determine that another Explanation of Significant Differences (ESD) or amendment to the remedy set forth in the 1999 ROD is necessary.

Please be advised that the New York State Departments of Environmental Conservation and Health would also have to review and concur on any actions taken with respect to your Parcel A request. Any institutional controls would also need to be implemented prior to development of the parcel.

In summary, should the City wish to proceed with either of these options or would like to discuss this matter further, please call Edward Als of my staff at (212) 637-4272.

Sincerely,



Doug Garbarini, Chief
NY Remediation Branch

cc: K. Morris, GC IDA
H. Dudek, DEC
J. Yavonditte, DEC



Explanation of Significant Differences

LI TUNGSTEN SUPERFUND SITE Glen Cove, New York

U. S. Environmental Protection Agency
Region 2

May 2005

INTRODUCTION

In accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), if the Environmental Protection Agency (EPA) selects a remedial action and, thereafter, it determines there is a significant change with respect to that action, an Explanation of Significant Differences (ESD) and the reasons for such changes must be published.

EPA issued a Record of Decision (ROD) in 1999 which selected a remedy at the Li Tungsten Superfund site (Site), located in the City of Glen Cove, Nassau County, New York. The Site is comprised of the Captain's Cove and the former Li Tungsten facility properties. The selected remedy requires the excavation and off-site disposal of soil contaminated with radionuclides and heavy metals. At the time of the ROD, EPA estimated the amount of contaminated soil to be approximately 69,400 cubic yards (cy).

During its subsequent implementation of the remedy, EPA issued an ESD in November 2002 describing an increase in the volume of contaminated soil from the amount estimated in the ROD. The 2002 ESD updated the estimate of contaminated soil that required excavation to approximately 132,100 cy and also presented revised cost information resulting from new developments that occurred since the selection of the 1999 remedy.

EPA has chosen to issue this second ESD to address the City of Glen Cove's decision to revise its Glen Cove Creek waterfront revitalization plan to include residential future use of the Site. The Glen Cove Industrial Development Agency (IDA) is planning to redevelop the Site to include both commercial and residential future uses. The City has revised its zoning code accordingly. This ESD re-evaluates the cleanup levels associated with the EPA's

1999 remedy as it pertains to the newly residential portions, examines the on-going implementation of the remedy, and provides detailed information as to how the remedy can safely accommodate the proposed residential uses at portions of the Site. Parcel A of the Li Tungsten property is still under evaluation with respect to future residential development, and may be the subject of a future determination by EPA.

This ESD will become part of the Administrative Record file for the Site. The entire Administrative Record for the Site includes, among other things, the 1999 ROD and other relevant documents. These documents are available for review at the following locations:

Glen Cove Public Library
Reference Section
4 Glen Cove Avenue
Glen Cove, NY 11542
(516) 676-2130

Hours: Mon-Thurs, 9am-9pm
Fri-Sat, 9am-5pm
Sun, 1pm-5 pm

U. S. Environmental Protection Agency
290 Broadway, Floor 18
New York, New York 10007

Hours: Mon-Fri, 9am-5pm
Sat-Sun, Closed

EPA and the New York State Department of Environmental Conservation (NYSDEC) do not believe that the City's planned residential

future use of the Site requires fundamental alteration of the remedy selected in the 1999 ROD. The selected remedy, with minor modification of its original radionuclide cleanup levels and institutional controls, will be protective of human health and the environment and will comply with the federal and state requirements identified in the ROD.

Should there be any questions regarding this ESD, please contact:

Edward Als
Emergency and Remedial Response Division
U. S. Environmental Protection Agency
290 Broadway, Floor 20
New York, New York 10007
(212) 637-4272
als.ed@epa.gov

SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY/IMPLEMENTATION

Site Description and History

The Site is located in the City of Glen Cove, Nassau County, New York. It consists of the former Li Tungsten facility property, the radiologically-contaminated portions of the Captain's Cove property, and nearby areas where radiologically- and/or metals-contaminated materials associated with the former Li Tungsten facility came to be located, including portions of Glen Cove Creek. The Captain's Cove Property is located west of the Li Tungsten Property on Garvies Point Road, and both are located on the north shore of Glen Cove Creek.

In October 1992, the Site was placed on the National Priorities List, which is EPA's list of Superfund sites. In 1993, EPA initiated a Remedial Investigation and Feasibility Study (RI/FS) to define the nature and extent of contamination on Parcels A, B and C of the former Li Tungsten facility property, known as operable unit (OU) 1. Later, in 1995, EPA expanded the Site definition to include the two radioactive waste areas A and G at the Captain's Cove property *i.e.*, OU 2. EPA's RI/FS of the Li Tungsten and Captain's Cove properties revealed that many contaminants were left behind as a result of prior Site practices. These contaminants pose a risk to human health and the environment. The primary contaminant categories of concern at the Site are radionuclides and heavy metals associated with spent ore residuals/slag.

The Glen Cove Creek area has been industrialized since the mid-1800's. The immediate area now includes light

industry, commercial businesses, a sewage treatment plant, a County public works facility, and State and Federally-designated hazardous waste sites. Other land uses in the vicinity include marinas, yacht clubs, beaches, and the Garvies Point Preserve. There are residences within 100 feet of the Li Tungsten property, along Janet Lane and The Place, and within 1,000 feet of the Captain's Cove property on McLoughlin Street.

The processing of tungsten and other metals began at the Li Tungsten facility in 1942 and ended in 1985. Operations consisted mainly of processing tungsten ore concentrates and scrap metal containing tungsten into ammonium paratungstate (APT) and formulating APT into tungsten powder and tungsten carbide powder. The Captain's Cove property was used as a dump site for the disposal of incinerator ash, sewage sludge, rubbish, household debris, dredged sediments from Glen Cove Creek, and industrial wastes, including wastes from the Li Tungsten facility, from the 1950's to the late 1970's. The property was purchased by developers in 1983 for development as a residential condominium project. Development efforts were abandoned in the mid-1980's when the NYSDEC designated the Captain's Cove property as a State Superfund site.

The City of Glen Cove, which has been designated as an EPA Brownfields Showcase Community, has been gradually implementing its 1998 Glen Cove Creek Revitalization Plan involving more than 200 acres surrounding the Creek. The Revitalization Plan projected the future use of the area as commercial redevelopment, featuring shops, restaurants, parking facilities, museums, and a hotel/conference center. The Glen Cove IDA has recently entered into a land disposition agreement with Glen Isle developers and is revising the Revitalization Plan to include substantial residential development. The City has requested that EPA perform the necessary actions to allow residential development of the Li Tungsten and Captain's Cove properties.

Selected Remedy

As mentioned above, based on the results of the RI/FS, EPA issued a ROD in 1999 which selected a remedy for the Site. The selected remedy primarily consists of excavation of soils and sediments contaminated above cleanup levels, segregation of radionuclide-contaminated soil and nonradionuclide soil contaminated with heavy metals, and off-Site disposal of all contaminated soil at appropriately licensed facilities.

Implementation of the Remedy

EPA acted to expedite the implementation of the soil excavation activities for the southern portion of the Li Tungsten property, encompassing Parcel A and the lower portion of Parcel C, by federally funding the remediation of these areas. Fast-tracking this portion of the remediation facilitated the City's revitalization efforts around Glen Cove Creek.

EPA also issued a series of unilateral administrative orders (JAOs) to potentially responsible parties (PRPs) for the Site, directing them to perform various cleanup work to complement the work being performed by EPA. Negotiations with the City (also a PRP) resulted in an agreement by which the City funded a significant portion of EPA's excavation work at the Captain's Cove property.

In May 2001, EPA completed the excavation and segregation of contaminated soils on Parcel A and lower Parcel C of the Li Tungsten property. EPA arranged for the nonradioactive, heavy metals-contaminated soils to be trucked off-site for disposal and the radioactively-contaminated soils to be stored on-site in the Dickson Warehouse for future disposal by PRPs.

In November 2003, EPA also completed the excavation of contaminated soils from the Captain's Cove portion of the Site. Both radioactively-contaminated soil and nonradioactively contaminated soil containing heavy metals are presently staged at the Captain's Cove property, awaiting off-site disposal.

In early 2004, TDY Industries, a PRP, disposed of the radioactive wastes stored in the Dickson Warehouse and also performed some limited excavation of radioactively-contaminated soil on upper Parcel C, with disposal at an off-site licensed facility.

Second ROD

In September 2000, the US Army Corps of Engineers (USACE) began dredging the navigational channel in the inner half of Glen Cove Creek, using remediated Parcel A of the Li Tungsten property as a temporary dewatering area. During the course of the dredging, EPA determined that the dredged spoils placed on Parcel A were contaminated with chunks of radioactive slag. Dredging was suspended and EPA ordered certain PRPs to segregate radioactive materials from the dewatered sediment and dispose of the radioactive materials. In response, TDY Industries conducted the segregation work in the Summer 2002. Afterwards, the City of Glen Cove disposed of the remediated sediments at the North Hempstead Landfill for use as grading material, while the segregated radioactive materials were eventually disposed of by TDY at the US Ecology facility in Idaho.

After dredging was suspended, the USACE performed an underwater radiation survey in Glen Cove Creek to assess the amount of radioactive materials potentially left in the Creek. The survey indicated that significant sources of radiation remained in the Creek, particularly around the bulkhead of Parcel A. EPA has performed a focused feasibility study (FFS) regarding the Creek and intends to address the Creek radiation as OU 4 of the Li Tungsten Site, as reflected in the recently issued ROD describing its selected remedy.

DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE REASONS FOR THOSE DIFFERENCES

Since the issuance of the 1999 ROD, a significant amount of excavation has been performed on both Site properties. EPA has completed all the excavation and disposal activities on Li Tungsten's Parcel A and lower Parcel C, as well as completing all excavation work at the Captain's Cove portion of the Site. In addition, TDY Industries has performed limited excavation and disposal of radioactively contaminated soil on upper Parcel C.

EPA selected its 1999 remedy in anticipation of the future use of the Site as envisioned in the City's 1998 Glen Cove Creek Revitalization Plan; namely, commercial/light industrial use. In light of the change in future land use at the Site, discussed above, the City has requested that EPA re-evaluate the 1999 remedy for both the Captain's Cove and Li Tungsten properties to determine whether the 1999 remedy, as selected, would be protective of a residential future use scenario.

Therefore, EPA has re-evaluated the cleanup levels associated with the 1999 remedy as well as the implementation of the remedy to date to determine whether the remedy can safely accommodate the newly proposed residential uses of the Site (except for Parcel A of the Li Tungsten property, which may be the subject of a future determination by EPA). EPA considers the following italicized excerpts from the 1999 ROD as relevant and potentially impacted by the proposed change in future use. They are provided as background for the discussions and determinations that follow:

Soils, Sediment and Debris

The ROD states the following with respect to soils, sediments, and debris:

"The selected remedy at both Li Tungsten and Captain's Cove will include excavation, volume reduction, and off-Site disposal of all radioactive/chemical wastes, consistent with the cleanup levels developed for this Site. The remedial action cleanup levels for these wastes were provided earlier in Table 15."

Table 15 of the ROD is set forth below:

TABLE 15

Parameter (In Soil)	Cleanup Levels
Arsenic	24 mg/kg
Lead	400 mg/kg
Thorium-232	5 pCi/g ¹
Radium-226	5 pCi/g ¹

¹These cleanup levels do not include the natural background radiation of each radionuclide i.e., approximately 1 pCi/g.

The ROD's cleanup levels for radionuclides and arsenic were developed as a result of a human health risk assessment for commercial use of the Site. The cleanup

level for lead was based on EPA policy for residential land use. Based on a re-evaluation of the ROD's cleanup levels, vis-a-vis residential future use, EPA has determined that only the radionuclides need to be further restricted in soil. Consistent with EPA's OSWER Directive 9200.4-25, which further defines the provisions of 40 CFR 192 for Superfund sites, the following radiological criteria will apply to the OU1/OU2 cleanup:

radium-226+radium-228 \leq 5pCi/g+background

thorium-230+thorium-232 \leq 5 pCi/g+background

The lead cleanup level selected in 1999 was and still is the residential cleanup level for Superfund sites. Regarding arsenic, EPA believes that, based on a review of the Li Tungsten risk assessment as well as arsenic cleanup levels used at other Superfund Sites, the arsenic cleanup level of 24 mg/kg, although selected for a commercial future use, can be considered sufficiently protective for residential future use, particularly in the context of the Li Tungsten remedy i.e., excavation followed by clean backfill.

Because the 1999 ROD selected excavation of contaminated soils followed by replacement with clean backfill, the achievement of soil cleanup levels is only an issue beyond the boundaries of the excavations. Post-excavation sampling of the boundaries excavated by EPA (i.e., the entire Captain's Cove portion of the Site, as well as Parcel A and lower Parcel C of the Li Tungsten property) show that not only the original cleanup criteria, but also the modified radionuclide criteria have been met; therefore, EPA has determined that the areas of the Site that have been excavated to date meet residential standards for arsenic, lead, and radionuclides. As mentioned earlier, however, Parcel A requires further evaluation in regard to its being used for residential development, due to the presence of organic contaminants in the soil and in the shallow groundwater beneath it.

Groundwater and Surface Water

The ROD states the following with respect to groundwater and surface water:

"The preferred alternative at the Li Tungsten facility will require monitoring of the Upper Glacial Aquifer in the vicinity of the Site to determine the effects of the soil remedy on groundwater quality. The preference for no action is based on the sporadic and generally low-level nature of the inorganic contamination; as well as the impacts of saltwater intrusion on the Aquifer and the availability of the City's potable water supply to the affected area, which significantly contribute to the non-use of the contaminated aquifer as a potable water source. Nassau County Public Health Ordinance Article 4, which prohibits the installation of new private potable water systems in areas served by a public water supply, should effectively preclude any future potable water well installations in this portion of the aquifer."

The no action remedy for groundwater was chosen in part based on the local non-use of the Upper Glacial Aquifer, regardless of the future use of the Site. Therefore, EPA doesn't consider the existence of sporadic and low level inorganic contamination in the aquifer a direct human health threat to residential future use, as long as the institutional controls described in the 1999 ROD are implemented e.g., restrictions on the use of the aquifer immediately underlying the Site for drinking water, irrigation, fountains etc.

Institutional Controls

Regarding institutional controls in general, the ROD states the following:

"To complete the proposed remedial action, EPA recommends that deed restrictions be placed on the Li Tungsten Site, primarily to prevent the Site from being used for residential purposes. The deed restriction will also include controls to ensure the protection of public health through restrictions on groundwater withdrawals for any purpose that could lead to human exposure e.g., drinking water, irrigation, fountains, etc. until the groundwater beneath the Site has reached cleanup levels; as well as requiring that any new construction on this Site should adhere to relevant building codes for radon/thoron gases."

With the exception of the restriction on future development of the Site for residential use, the recommendations for institutional controls remain relevant for the proposed residential development and must be implemented by the Glen Cove IDA and the developer. In addition, because

of the potential for migration of radon, as well as soil vapor from off-site volatile chemical groundwater plumes in the study area, the deed restriction discussed above for the Site must require an assessment of the migration of radon gas and chemical vapor through soil for any new construction proposed on this Site, including the need to incorporate appropriate safeguards.

Protection of Human Health and the Environment

Regarding protection of human health and environment, the ROD summarizes:

"Further, the numerical cleanup levels are sufficiently protective from the standpoint of carcinogenic and non-carcinogenic risk for all future on-Site populations except for residential use.... Because the low levels of radionuclides and heavy metals that are left behind may still be technically above their respective regional background levels and above levels considered safe for residential occupation, institutional controls in the form of deed restrictions on residential future use of the properties will help protect human health by limiting the properties to commercial uses."

After a review of the remedy selected in the 1999 ROD and all relevant data to date, EPA believes that the original cleanup criteria and institutional controls, as modified by this ESD, will provide an appropriate level of cleanup of the Site to allow the residential future use envisioned by the City (with the exception of Parcel A, which is still under review).

EPA expects that the excavation work that remains to be completed (*i.e.*, on Parcel B and upper Parcel C) will be performed in the near future. Post-excavation sampling in these areas will be required to confirm the ROD's original cleanup criteria as well as the modified radionuclide criteria have been met, as discussed above.

SUPPORT AGENCY COMMENTS

NYSDEC is aware of the City's intended revisions to the future use of the Site, and it agrees that EPA's 1999 ROD remedy remains appropriate, albeit with the minor modifications discussed above.

AFFIRMATION OF STATUTORY DETERMINATIONS

This ESD recognizes changes to a remedy that leaves hazardous substances, pollutants or contaminants above levels that allow for unlimited use and unrestricted exposure. Pursuant to CERCLA Section 121 (c), EPA shall review such remedies no less often than every five years to assure that human health and the environment are protected. This ESD, which involved a review of the 1999 remedy as described earlier, constitutes the basis of the first five-year review of OUs 1 and 2 for this site. A five-year review report will be prepared separately. As indicated elsewhere in this document, the remedy selected for OUs 1 and 2 will protect human health and the environment when they are completed and/or put into place. A second five-year review will be completed before March, 2010, five years from the date of this ESD.

Considering the new information that has been developed, EPA and NYSDEC have both determined that the selected remedy, with the modifications described in this ESD, remains protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. In addition, the remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site.

PUBLIC PARTICIPATION ACTIVITIES

In accordance with the NCP, a formal public comment period is not required when issuing an ESD. However, EPA is announcing the availability of this ESD in the Glen Cove Record Pilot, and there will be a public availability session relating to this ESD on Wednesday, May 18, 2005 at 7 PM in the City Council chamber, City Hall, 9 Glen Street, Glen Cove. In addition, as noted above, questions regarding this ESD may be directed to Edward Als of EPA, whose mailing address, e-mail address, and phone number are set forth above, under INTRODUCTION.

Appendix C: NYSDEC EE Template

**ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36
OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW**

THIS INDENTURE made this _____ day of _____, 20___, between Owner(s) Enter property owner(s) name, having an office at Enter property owner's address, County of Enter owner's county, State of Enter owner's state (the AGrantor@, and The People of the State of New York (the AGrantee.@, acting through their Commissioner of the Department of Environmental Conservation (the ACommissioner@ or ANYSDEC@ or ADepartment@ as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties (ASites@ that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law (AECL@ which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of Enter street address of property in the Choose municipality type of Enter property municipality, County of Enter property county and State of New York, known and designated on the tax map of the County Clerk of Enter clerk county as tax map parcel numbers: Section Enter Tax ID Section #. Block Enter Tax ID Block # Lot Enter Tax ID Lot #, being the same as that property conveyed to Grantor by deed dated Enter Deed Date and recorded in the Enter county name County Clerk=s Office in Instrument No. Enter Instrument #, comprising of approximately Enter Acreage √ acres, and hereinafter more fully described in the Land Title Survey dated Enter original survey date and, if applicable, "and revised on" and revised survey date prepared by Enter revised surveyor's name or original surveyor's name if not revised, which will be attached to the Site Management Plan. The property description (the AControlled Property@ is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of human health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is

extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Choose an Oversight Document TypeNumber: Enter SAC# or BCA/Consent Order Index #, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein (AEnvironmental Easement@

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor=s successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

- A. (1) The Controlled Property may be used for:
- Choose the allowable land use
- (2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);
- (3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP.
- (4) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;
- (5) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;
- (6) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- (7) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.
- (8) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

(9) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Choose the correct list of inapplicable uses. Where the allowable use is residential, choose "raising livestock...", and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor=s assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department=s determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Regional Remediation Engineer
NYSDEC – Region Choose the DEC region #
Division of Environmental Remediation
Enter the DEC regional address
Enter DEC regional locality,
Phone: Enter regional phone #

or

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the

Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

- (i) are in-place;
- (ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by

Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to: Site Number: Enter DEC Site #
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to: Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Enter Grantor's Name:

By: _____

Title: _____ Date: _____

Grantor=s Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the _____ day of _____, in the year 20 __, before me, the undersigned, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Dale A. Desnoyers, Director
Division of Remediation

Grantee=s Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the _____ day of _____, in the year 20__, before me, the undersigned, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public - State of New York

SCHEDULE AA@PROPERTY DESCRIPTION

Enter Property Description

**Appendix D: Estimated Date and Sequence To Receive Agency Approval for Residential Use;
and Data Gap Details and Environmental Due Diligence Activities**

**Estimated Date and Sequence To Receive Agency Approval for Residential Use;
and Data Gap Details and Environmental Due Diligence Activities**

ACTIVITIES NEEDED TO OBTAIN AGENCY APPROVAL FOR RESIDENTIAL USE			SUPPLEMENTAL SAMPLING AND ENVIRONMENTAL DUE DILIGENCE PRE-CLOSING/PRE-CONSTRUCTION ACTIVITIES				
Properties Involved	Development Block	Specific Actions To Achieve Regulatory Approval To Construct, File/Publish Administrative Documents, and Expected Date Process Will Be Completed (DEV=developer, IDA= Glen Cove Industrial Development Agency, DEC= New York State Department of Environmental Conservation, EPA= US Environmental Protection Agency)	Data gaps (From Environmental Conditions Report, Table 3)	Contaminant	Media	Potential Environmental Issue	Expected Environmental Activities
Captain's Cove	A, B-1, B-2, C	1. DEV prepares info for EE; 2. IDA reviews info and prepares EE application; 3. DEV reviews application; 4. IDA submits application to DEC; 5. DEC reviews and signs EE; 6. IDA records EE; 7. DEC issues ESD changing use to restricted residential. Estimated completion date 2/1/2012**	Quality of backfill material not known	SVOCs, metals	Soil	Residual levels may exceed fish and wildlife standards	Perform sampling in proposed areas of development
			Baseline soil vapor characterization*	VOCs	Soil vapor	Soil vapor may contain VOCs that could invade buildings through foundation slabs	Perform soil gas and groundwater sampling to comply with the NYSDOH Soil Vapor Guidance (October 2006) needed to design, monitor, and terminate a sub-slab soil vapor mitigation system*
Angler's Club	GLADSKY'S CLUB AND MARINA	1. IDA submits remedial action completion report (RACR) to DEC; 2. IDA provides documentation to DEC for Pumping Station inclusion in ERP; 3. DEC recognizes Angler's and Pumping Station in ERP; 4. DEV prepares outline of SMP for IDA; 5. IDA prepares SMP; 6. DEC reviews and accepts SMP; 7. DEV prepares info for EE; 8. IDA reviews info and prepares EE application; 9. DEV reviews EE application; 10. IDA submits EE application to DEC; 11. DEC reviews and signs EE; 12. IDA records EE. Expected date of completion is 2/28/2012	Potential for asbestos and lead based paints based on age of building	Asbestos, lead	Siding, wallboard, caulking, roofing	Building materials may need special handling	Perform survey to identify materials/handle demolition in accordance with regulations
Gladsky			Baseline soil vapor characterization	VOCs	Soil vapor	Soil vapor may contain VOCs that could invade buildings through foundation slabs	Perform soil gas and groundwater sampling to comply with the NYSDOH Soil Vapor Guidance (October 2006) needed to design, monitor, and terminate a sub-slab soil vapor mitigation system
Pumping Station			Potential for sanitary wastes beneath system piping	Nitrate and other sewage components, TAL/TCL	Soil, groundwater	Leak may need repair and removal of excessive constituents	Soil and groundwater sampling
			Potential for asbestos and lead based paints based on age of building	Asbestos, lead	Siding, wallboard, caulking, roofing	Building materials may need special handling	Perform survey to identify materials/handle demolition in accordance with regulations
Li Tungsten Parcel A	D, E, F, G, H, I	1. Dev prepares outline for SMP; 2. IDA prepares SMP; 3. DEC reviews and approves SMP. 4. DEV prepares info for EE. 5. IDA reviews info and prepares EE application; 6. DEV reviews EE application; 7. IDA submits EE application to DEC; 8. DEC reviews and approves; 9. EPA reviews and approves EE; 10. DEC signs EE; 9. IDA records EE; 10. EPA publishes ESD. Estimated completion date 4/30/2012	Soil quality beneath dredge spoil stockpiles	SVOCs, metals, radioactivity	Soil	Residuals from dredge spoils may have infiltrated the underlying soil	Perform soil sampling to determine soil quality after removal of stockpiles
Li Tungsten Parcel B			Opened NYSDEC Spill File 01-00419	Petroleum hydrocarbons	Soil	Hydrocarbons may exceed the SCOs.	Investigate and address to gain closure of spill file
			Radioactive slag adjacent to bulkhead	Radioactivity	Creek sediment	Residual levels exceeding cleanup levels at depths greater than 11-ft below MLW	Test dredge spoils for radioactivity and separate any nodules for disposal. Ensure that no excess radioactivity occurs less than 2-ft below the final creek bottom elevation next to any new bulkheads
Li Tungsten Upper Parcel C			Potential for isolated metals and PCB "hot spots" in soils not removed as part of EPA remedial effort	Arsenic, lead and PCBs	Soil	Unexcavated residual levels may exceed SCOs	Perform soil sampling to determine soil quality
Li Tungsten Lower Parcel C			Potential for isolated metals "hot spots" in soils not removed as part of EPA remedial effort	Arsenic and lead	Soil	Unexcavated residual levels may exceed SCOs	Perform soil sampling to determine soil quality
			Potential for radiological/metals impacts in and beneath Benbow Building	Arsenic, lead and radioactivity	Soil	Unexcavated residual levels may exceed SCOs	Perform soil sampling and radiological survey of building
Li Tungsten All Parcels			Potential for impacts under Dickson warehouse slab	Arsenic, lead and radioactivity	Soil	Unexcavated residual levels may exceed SCOs	Perform soil sampling under the slab
			Quality of soil used as back fill	Target analyte list (TAL), Target Compound List (TCL)	Groundwater	Residual groundwater concentrations in excess of Maximum Contaminant Levels (MCLs) from upgradient sources	Sample groundwater to determine quality
			Trace metal content of soil	Arsenic and lead	Soil	Residual levels may exceed NYSDEC cleanup levels	Sample soil to determine quality
			Baseline soil vapor characterization	VOCs	Soil vapor	Soil vapor may contain VOCs that could invade buildings through foundation slabs	Perform soil gas and groundwater sampling to comply with the NYSDOH Soil Vapor Guidance (October 2006) needed to design, monitor, and terminate a sub-slab soil vapor mitigation system
	Quality of soil under tank pads and foundation slabs	TAL, TCL	Soil	Unexcavated residual levels may exceed SCOs	Perform soil sampling to determine soil quality		
Doxey	ANGLER'S CLUB AND MARINA	1. IDA submits Remedial Action Work Plan to DEC; 2. DEC reviews and comments; 3. IDA revises RACR; 4. DEV reviews RACR; 5. IDA submits RACR to DEC; 6. DEC approves RACR; 7. IDA implements RACR; 8. IDA prepares RACR; 9. DEC reviews RACR; 10. DEV prepares SMP outline; 11. IDA prepares SMP; 12. DEC reviews and approves SMP; 13. DEV prepares info for EE; 14. IDA prepares EE application; 15. DEV reviews EE application; 16. IDA submits EE application to DEC; 17. DEC reviews and signs EE; 18. IDA records EE. Estimated completion date 12/31/2012	Potential for asbestos and lead based paints based on age of building. Potential SVOC/VOC/metals contamination of soil.	Asbestos, lead, TAL/TCL, free product	Siding, wallboard, caulking, roofing, soil and groundwater	Building materials may need special handling, soil and groundwater remediation may be needed	Sample and remediate prior to closing.
			Opened NYSDEC Spill File 92-09888	Petroleum hydrocarbons	Soil and groundwater	Excessive chemicals may occur in soil and dissolved in groundwater. Free product may be present	Investigate and address to gain closure of spill file
			Baseline soil vapor characterization	VOCs	Soil vapor	Soil vapor may contain VOCs that could invade buildings through foundation slabs	Perform soil gas and groundwater sampling to comply with the NYSDOH Soil Vapor Guidance (October 2006) needed to design, monitor, and terminate a sub-slab soil vapor mitigation system
Gateway Properties	J	1. DEV performs Phase 2 to quantify environmental liabilities; 2. DEV closes on properties; 3. DEV prepares RAWP for DEC review (if contaminated); 4. DEC comments on RAWP; 5. DEV revises RAWP and resubmits to DEC; 6. DEC reviews and approves RAWP; 7. DEV implements RAWP. 8. DEV prepares RACR and submits to DEC; 9. DEC reviews and approves RACR; 10. DEV prepares SMP for DEC review; 11. DEC comments on SMP; 12. DEV revises SMP; 13. DEC approves SMP; 14. DEV prepares EE application; 15. DEV reviews and signs EE; DEV records EE. Estimated completion date 12/31/2013.	Potential for impacts from property usage	TAL, TCL	Soil, groundwater	Residuals from existing and past industrial operations may have contaminated the soil and groundwater	Perform a Phase II ESA
			Baseline soil vapor characterization	VOCs	Soil vapor	Soil vapor may contain VOCs that could invade buildings through foundation slabs	Perform soil gas and groundwater sampling to comply with the NYSDOH Soil Vapor Guidance (October 2006) needed to design, monitor, and terminate a sub-slab soil vapor mitigation system

* The ECR listed soil vapor as a data gap that needed further investigation. However, the ECs for Captain's Cove and the ICs for Li Tungsten require sub slab soil vapor mitigation (SSVMS) systems be installed. The DEC requires the SSVMS to be installed and operated according to the NYSDOH "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" October 2006. Therefore, the Soil Vapor Data Gap in the ECR has been replaced by the SMP and EPA IC. The initial data gap is establishing the baseline conditions from which future changes in soil vapor quality can be compared.

** Estimated completion dates depend on all parties performing without any delays or lapses in schedule.