

CIVILIAN FEDERAL AGENCY TASK FORCE

**GUIDE ON EVALUATING ENVIRONMENTAL LIABILITY FOR PROPERTY
TRANSFERS**

AUGUST 1998

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PREFACE

This document summarizes the requirements and process for evaluating potential liability from environmental contamination, and will introduce readers to the larger context of environmental issues associated with real property transfers. The general guidelines set out in this document for conducting an Environmental Due Diligence Audit (EDDA) are intended for use as *baseline* guidance when acquiring, leasing, transferring, or terminating interest in any real property. Additional agency-specific policies and guidelines may apply for particular sites and situations, along with the federal, state, and local regulations.

This document was developed for the Civilian Federal Agency Task Force, Facility Closure Workgroup, under the direction of Maryalice Locke (FAA) and with the assistance of Booz•Allen & Hamilton, Incorporated. The Civilian Federal Agency Task Force provides a forum and resource leveraging opportunities for members to address the unique environmental issues of concern to civilian federal facilities. These concerns and responsibilities are particularly significant for real property transfers given that, as a group, civilian federal agencies control more land than the Department of Defense and Department of Energy combined.

It is a pleasure to acknowledge the assistance of the following Facility Closure Workgroup members who kindly participated in the technical review phases of this effort: Bob Wilson, DOI; Pat Weggel and Jack Stanton, EPA; Sam Higuchi, NOAA; Juan Boston, NSA; Bill McGovern, Treasury; George Sundstrom, USDA; and Jack Staudt, VA. In addition, sincere appreciation goes to the Federal Aviation Administration staff and contractors who initiated and proved the EDDA process, in particular: William Echols, Alan Falk, Cindy Felis, Daphne Fueller, Brad Holway, Georgia Phillips, Nancy Shalloway, and Steph Smith. Finally, special thanks go to Pat Weggel and the Environmental Protection Agency's Safety, Health and Environmental Management Division who graciously provided the "*Guidelines for Acquiring and Transferring EPA Real Property and Complying with CERFA*" as a model for this document.

CHAPTER 1 ENVIRONMENTAL LIABILITY

INTRODUCTION

Federal agencies routinely lease and transfer real property in the course of carrying out their missions. One of the essential steps in modern real property transactions is evaluating candidate properties for potential environmental contamination and liability. This document summarizes the requirements and process for evaluating potential liability from environmental contamination, and will introduce readers to the larger context of environmental issues associated with real property transfers.

The process of evaluating proposed transfer properties for potential environmental contamination and liability is referred to in this document as the Environmental Due Diligence Audit (EDDA) process. Depending on the agency, however, this process may be called a Property Transfer Assessment, Environmental Site Assessment, Environmental Baseline Assessment, Transaction Screen Questionnaire, Preliminary Hazardous Waste Site Survey, and Environmental Due Diligence Process. A list of acronyms relating to property transfer and the EDDA process used in this document is presented in Appendix A.

The general guidelines set out in this document should be used as baseline guidance when acquiring, leasing, transferring, or terminating agency interest in any real property. For specific sites and situations, additional agency policies and guidelines may apply, along with the federal, state, and local regulations. Implementation of agency policies and the EDDA process delineated in this document will help to reduce the agency's environmental risk and liabilities associated with real property transfer.

Ultimately, the purpose of an EDDA and this guidance is to help federal managers understand site liabilities and manage—rather than react to—any associated costs and activities for site cleanup. With the EDDA process, agencies can also go beyond the site contamination aspects and comprehensively look at the proposed property to help identify other environmental concerns. The material result of this process is documentation of the environmental conditions at a site prior to property transfer. This will help to “baseline” the environmental condition of the property at the time of the transaction and serve as a source document if subsequent contamination occurs and questions about site responsibility are raised. The complete EDDA process is described in detail in the following sections and chapters.

BACKGROUND

Environmental liability may result from a wide range of regulatory requirements affecting federal agencies. Like the private sector, agencies may be held liable for cleanup of site contamination as an owner or operator at a site. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or “Superfund Law” is the primary regulatory driver of the EDDA process and defines what parties must do to exercise “due diligence” in assessing and acting on potential site contamination.

CERCLA Section 120 holds federal agencies strictly liable for cleaning up contamination at sites they either own or operate, or where they have been found to have contributed to site contamination. In many cases, the federal government may be the most viable Potentially Responsible Party (PRP), and therefore, becomes the most accessible “deep pocket” to pay for site cleanups even if its overall contribution has been small.¹ The Community Environmental Response Facilitation Act (CERFA) and CERCLA 120(h) require that—prior to disposing of real property to organizations outside of the federal government—agencies identify hazardous waste used on the property and clean up any site contamination. In accordance with Environmental Protection Agency (EPA) guidance issued June 16, 1998, landholding federal agencies may petition for transactions to occur before a cleanup is completed; however, in all instances the agency remains responsible for the cleanup. (See Appendix B for relevant procedures and guidance.)

For agencies acquiring property, the need to “determine the environmental condition of proposed sites prior to purchase” has been delineated in a General Services Administration (GSA) proposed rule² that describes “current real property policies.” The language further states that, “sites must be free from contamination, unless it is otherwise determined to be in the best interests of the Government to purchase a contaminated site.” The EDDA process can help satisfy these determination requirements.

The need for an EDDA process also arises for agencies that loan money to private parties. If a loan is based on the apparent value of a property without consideration to its environmental condition and contamination is subsequently discovered or occurs, the security value of the property may be greatly reduced, or even eliminated.

Federal agencies are likewise governed by other environmental statutes that impact, and may potentially limit, agency use of a property. Regulations involving wetlands, endangered species, and cultural or historic assets are examples of some statutes that may affect agency use of a property. These regulations and other environmental issues may also affect property transactions. Chapter 2 discusses these issues, including hazardous material and waste management issues, decontamination and disposal of contaminated equipment, and transferring environmental permits and licenses. While all of these issues require consideration and management, site contamination represents the most significant aspect of liability³ and potential costs, and is the principle focus of the remainder of the document.

The primary focus of the EDDA process is on the risk and associated liabilities from past site use and potential contamination under CERCLA. Prior site contamination results in extremely expensive cleanup actions. For a current or former owner or operator, the extent of liability is determined by the following:

- Their ability to use the “innocent landowner” defense
- The type and magnitude of site contamination
- The number of other PRPs
- Each PRP’s ability to pay for site cleanup.

Cleanup work may range from identifying, removing, and cleaning up limited leaking Underground Storage Tank (UST) soil contamination, to engaging in a full-scope site cleanup of

multiple hazardous waste sources, adjacent soils, underlying groundwater, and contaminated surface waters and sediments. In some cases, the contamination and associated liability may extend far beyond the site boundaries affecting neighboring properties and nearby natural resources. In the first instance, the liability for addressing the leaking UST may be limited to tens of thousands of dollars, while the extensive site cleanup can cost tens of millions of dollars. Currently, the average cost at a CERCLA cleanup site is estimated at \$30 million dollars. Consequently, it is extremely important that agencies avoid, or fully understand and plan for, the potentially significant cost of site cleanup activities.

The response to potential and existing liabilities will depend on numerous factors, including ownership of the property, type of property transaction, extent of contamination, cost to address site contamination, and the strategic value of the property to the agency. An overriding factor will be the agency's ownership or operation at the property. When the agency is the current owner or is found to have caused site contamination through their use of the property, it will likely bear the responsibility for addressing site contamination. When the agency is not the owner or has not had a previous interest in the property, there are more options and decision points for federal managers. In these cases, managers can assess the value of the liability against the agency's interest in the property and engage in negotiations with landowners for cleanup, or require tenants on agency property to clean up contamination that has resulted from tenant activities. The specific property transaction types and other factors affecting agency liability are discussed later in this chapter and throughout the document.

OVERVIEW OF THE DUE DILIGENCE PROCESS

EDDA is a systematic procedure to evaluate subject properties for potential environmental contamination and liability. This process is divided into three phases that relate to varying depths of evaluation; they are:

- Phase I—Liability Assessment
- Phase II—Confirmation Sampling
- Phase III—Site Characterization.

The EDDA process was originally developed by private lenders to evaluate potential liability associated with proposed property acquisitions. Private lenders first used the due diligence process as a mechanism to head off CERCLA liabilities for properties in their loan portfolios. As such, the phases were developed in relation to this practical acquisition focus, rather than originating from regulation. Due diligence reviews have subsequently become an industry standard, required by lending institutions, for all loans and investments in real property. With the onset of regulations (i.e., CERFA) that govern federal agency real property disposal, the due diligence process has been expanded to address all types of property transactions.

The primary purpose for each phase of the EDDA process is summarized below and described in more detail in the individual chapters dedicated to each phase of the process.

Phase I—Liability Assessment is performed to determine whether environmental contamination is likely to be present at a property which may result in future environmental liability. Phase I

comprises pre-audit activities, site visit, records review, regulatory review, geologic and hydrogeologic review, report preparation, and report review. When an agency is disposing of a property outside of the federal government, the Phase I Liability Assessment may also be performed to satisfy CERFA requirements.

Phase II—Confirmation Sampling is performed when Phase I identifies potential areas of contamination. However, unlike the Phase I EDDA that concentrates on a broad range of concerns, the Phase II EDDA is conducted to verify whether a specific on-site environmental issue exists or if a release has occurred. Phase II involves the use of limited site sampling to confirm, or deny, suspected contamination identified in Phase I.

Phase III—Site Characterization is a comprehensive study to fully characterize the nature and extent of contamination at a property and any affected populations or environmental receptors. This should only be conducted after the limited Phase II sampling has confirmed contamination at the site and the agency has a continuing interest in the property. (As stated above, if the agency is the owner or operator of the site, parallel regulatory procedures may govern the process.) The elements of Phase III typically include plan development, site characterization, risk assessment, remedial technology recommendations, cost estimation, report preparation, and report review. This phase builds on the information developed in the previous EDDA phases to develop a complete understanding of site contamination issues, a recommended site cleanup plan, and a cost estimate. Thus, the Phase III EDDA serves as a management tool to help agency decision makers determine if the cost of remediation exceeds the benefit for a given property.

The intent of this guidance document is to familiarize the reader with the EDDA process, specifically in addressing potential contamination and managing liability. EDDAs are a necessary component to the agency's real estate and environmental programs; and, by performing them, the agency is protecting itself from costly environmental liabilities in the future.

PROPERTY TRANSACTIONS

Within the federal government, real property transactions occur between federal agencies, between federal and state or local entities, and between federal and a private entities. There may also be property transfers within an agency which, due to agency policy, are given much of the formality of out-of-agency transfers. Understanding the types of real property transactions is key for the EDDA process since the process and focus of the EDDA can vary with the type of transfer. Types of real property transactions include acquisition, disposal, outgrant or outlease, lease transactions (lease execution or lease termination), right-of-way, easements, land swaps, and special use permits. The type of transaction will greatly influence the agency's exposure to liability or its responsibility for addressing potential site concerns. Decision makers will need to have a thorough understanding of both the implications of the transaction type and the agency's specific requirements to focus the extent of the EDDA process and to evaluate the results and recommendations. The relationship between the major types of property transfer and the implementation of the EDDA process is developed in discussion below on each type of real property transfers and in later chapters. These terms and others related to the EDDA process are defined in the glossary in Appendix C.

Acquisition

An acquisition is defined as the act of becoming the owner or holder of an interest in certain real property. In the EDDA process, the acquisition of real property is the most challenging category of real property transfers because the federal agency must rely solely on external sources to obtain past and current information on the site. Additionally, new acquisitions present the highest potential for agencies to assume new liabilities associated with previous property use and contamination that occurred before the agency took title to the property. Therefore, it is extremely important to conduct a thorough and detailed liability evaluation to identify and understand the potential for past contamination at the site. Appendix D contains two memoranda governing federal property acquisition, one from the Office of the Under Secretary of Defense and the other from the EPA.

During the acquisition process, Phase II EDDA activities may be required to confirm the presence of environmental contamination. Phase III activities are rare because agencies generally avoid acquiring property known to be contaminated due to cost considerations. In some cases, however, agencies have been obliged to acquire contaminated properties by administration or Congressional decisions. Nonetheless, decisions to proceed to a Phase II or Phase III will be driven by how important the property is to the agency's mission or mandate. Note that even when the agency is mandated to acquire a property, completion of the EDDA process should occur prior to final property transfer so that the full extent of any environmental liability can be factored into the transfer documents and budgeting. (If the EDDA process is not completed before mandated transfer schedules, partial transfers or authorization to operate prior to transfer can be executed.)

An EDDA should also be performed when acquiring property where there is no record of prior occupation or activities performed on the property. In this case, the primary purpose for conducting an EDDA is to document the environmental baseline of the property at the time of acquisition. This can then be used for future reference in the event of an environmental incident or at property disposal. Seemingly pristine and undeveloped properties may be found to have had prior uses or undocumented hazardous waste releases that may be uncovered under the scrutiny of a formal Phase I Liability Assessment.

For property acquisitions, the natural timing of the Phase I EDDA is to conduct it concurrently with the National Environmental Policy Act (NEPA) process. It is particularly important that Phase I Liability Assessment information be provided to decision-makers before formal negotiations for a site occur.

Lease Transactions

The environmental liability issues associated with lease transactions vary depending both on whether the agency is either executing or terminating the lease, and whether the agency is in the position of the landlord or the tenant. Legally, lease execution is defined as initializing an action to rent real property from another party.⁴ Lease termination is defined as the act of ending a lease rental from another party.⁵ For this document, the terms lease execution and lease termination

indicate that the agency is the tenant. Situations in which the agency is the landlord are defined below in the “Outlease and Outgrant” section.

Lease Execution

An EDDA should be performed before the agency enters into a new lease to conduct operations or otherwise use property owned by another entity. As with the acquisition process, without an EDDA the agency has no knowledge of prior uses and activities conducted on the property and may be liable for environmental costs if contamination is identified after the agency begins operations. The EDDA performed prior to lease execution will serve as the baseline for comparing environmental conditions of the property prior to agency operations and subsequent to agency operations when the lease is terminated or when contamination is otherwise identified. A Phase I Liability Assessment should be initiated before a final site has been selected and while the NEPA process is being implemented.

Lease Termination

In a lease termination the agency is a tenant seeking to end occupancy or use of a property. In this instance, the agency is performing the EDDA to determine the environmental condition of the property at the time the agency vacates it. By leasing property the agency is considered an operator, and can be held liable under the CERCLA for contamination on the property. Without EDDA documentation stating the environmental condition of the property at the time the agency vacated, the agency may be held liable for contamination caused by future owners or operators. Prior to terminating the lease, a Phase I Liability Assessment should be completed and presented to the property owner for acceptance. This documents that the agency tenancy has not contributed to site contamination –or, in the event of suspected site contamination, identifies potential environmental liabilities. Suspected contamination should then be addressed through EDDA Phase II and III activities or equivalent regulatory requirements.

Outlease and Outgrant

Outleases and outgrants pose considerable risk to federal agencies. In both scenarios, the federal agency is the property owner or landlord, leasing or granting the use of federally owned property to public or private tenants. In these situations, even if the agency is not otherwise operating on the property, under CERCLA and CERFA the agency retains liability for any contamination. Thus, it is in the agency’s interest to conduct an EDDA and baseline the environmental condition of a property prior to tenant occupancy. Further, when a tenant terminates the lease the agency should require that another EDDA be performed to properly document the environmental condition of the property at the time of the tenant's departure, address any environmental issues, and minimize future liability. It is strongly recommended that the EDDA be completed prior to executing or terminating outlease or outgrant agreements.

Disposal

Disposal is the transfer of title and ownership of real property to another party. During the disposal process, the scope and depth of the EDDA depends on the past and current operations at

the site. Similar to lease termination, a Phase I EDDA is used to document the baseline condition at the time of disposal. Where no contamination is present, the Phase I document will help to protect the agency from future liability. In situations where contamination is possible, the EDDA process is performed to address any site contamination before the property is disposed. A Phase I Liability Assessment that indicates contamination is likely will serve to focus subsequent site investigation activities; and Phase II and III EDDA activities or their regulatory mandated equivalents may be required to address the environmental liabilities associated with the real property.

Federal agencies entering into contracts for the sale or other transfer of real property are required by CERCLA (42 U.S.C. 9620(h); 40 CFR 373) and by the Federal Property Management Regulations (41 CFR 101) to include notice of certain hazardous substance activities on the property. Specifically, notification that triggering levels of hazardous substances were stored for one year or more—or known to have been disposed of or released on the property. These requirements apply to the entire period of time the property was owned by the United States. Thus, by their nature, these requirements trigger an investigation of past activities on the property, which a Phase I Liability Assessment can help satisfy.

Other Property Transactions

While the preceding sections discuss the most typical types of property transactions, there are many more types of property transactions that can occur. These transactions can include:

- Land swaps
- Right-of-ways
- Easements
- Special use permits (mining, public recreation, grazing).

An EDDA may be recommended for these transactions, particularly in the case of land swaps and special use permits. Land swaps are comparable to property acquisition since there could be liabilities associated with previous property use and contamination that occurred before the agency took title. Special use permits present the potential for current or future site activities to result in agency liability. The decision to perform an EDDA in these cases is largely based on agency-specific policies or review process.

OTHER RELATED ISSUES

Assessing potential environmental contamination in the EDDA process is only one component of managing environmental liability. Other environmental issues that are associated with property transfer include assessment of cultural or historical importance and identification of endangered or threatened species. Further, there are property transfer issues that bridge the environmental and occupational safety areas, including lead-based paint, radon, indoor air quality and asbestos. Although the EDDA process is focused on potential environmental contamination and related liability, it can also aid in identifying other environmental issues that need to be considered and addressed. Chapter 2 discusses both property-related and other environmental issues that are not specifically addressed in the EDDA process.

¹ In general, any person owning property on which hazardous substances have come to be located faces potential uncertainty with respect to liability as an “owner” under Section 107(a)(1) of CERCLA, 42 U.S.C. §9607(a)(1), even where such owner has had no participation in the handling of hazardous substances, and has taken no action to exacerbate the release. However, EPA’s June 13, 1997, *Policy Toward Landowners and Transferees of Federal Facilities* clarifies EPA’s intent “to reduce the effect of potential CERCLA liability on the marketability of (federal) property....” See Appendix E.

² August 7, 1997, Federal Register: Volume 62, Number 152; Pages 42444-42456.

³ The “Government Management Reform Act of 1994” and the “Statement of Federal Financial Accounting Standards (SFFAS) #6” require federal agencies to report cleanup liabilities in their annual financial statements, including a listing of the sites and estimated total cleanup cost for each site.

⁴ Black’s Law Dictionary, 5th Edition.

⁵ Ibid.

CHAPTER 2
OTHER ENVIRONMENTAL ISSUES ASSOCIATED
WITH PROPERTY TRANSFER

BACKGROUND

There are both property-related activities and environmental features that should be addressed to effectively manage liabilities associated with real property transfer. As discussed previously, the Environmental Due Diligence Audit (EDDA) process focuses on identifying liabilities related to site contamination. The EDDA process does not directly address property-related activities or environmental responsibilities that are not contaminant-related; however, these activities and responsibilities may be required by environmental regulations or agency property transfer protocols.

Property transfer-related activities can include, but are not limited to,

- Equipment deactivation and decommissioning
- Chemical and hazardous materials removal
- Permit and license transfers and terminations
- Site restoration and improvements
- Building demolition and disposal.

These activities are important regardless of the type of property transaction, and differ mainly in addressing who (i.e., buyer or seller) assumes the responsibility or liability for improperly completed activities.

Environmental regulatory concerns cover a broad range of fields, including:

- Sites or buildings of historical and cultural significance
- Sensitive environments
- Endangered species
- National Environmental Policy Act (NEPA) compliance.

These environmental areas may affect the agency's ability to use a property for its intended purpose or may require specific activities to evaluate or protect a natural resource.

There are a variety of information sources and agency documentation that provide guidance for addressing these other environmental concerns for property transaction. For example, the General Services Administration (GSA) Public Buildings Service, Office of Property Disposal has produced two guidance documents intended to provide a framework for GSA Realty Specialists to achieve "compliance with the environmental laws and regulations that are applicable to the acceptance and disposal of interests in real property." These documents are known as the *Environmental Guidebook* (Appendix F in this document) and the *Environmental Resource Book*. Both provide useful information on the types of activities and assessments that GSA uses to evaluate and document environmental issues during property transfer. For a broader resource, GSA's Office of Governmentwide Policy has published a *General Reference Guide for Real Property Policy* (Appendix G in this document). This document provides a "map" to the full

scope of legal authorities relating to real property policies Included in the document are sections on Real Property Disposal, Historic Preservation, and Safety and Environmental Management, as well as an Index of Laws, Federal Property Management Regulations and Executive Orders. Finally, a good source for information on the internet is the *Real Property Clearinghouse*, sponsored by GSA; as of July 1998, the policies page can be found at: <http://policyworks.gov/org/main/mp/library/policydocs/agpolicy.htm>.

As noted earlier, the EDDA process can help to identify a range of potential environmental issues; however, federal managers should be aware that the EDDA process does not satisfy all assessment and documentation requirements surrounding potential environmental concerns. Managers can use information generated in the EDDA process to address these other environmental and property management issues. Managers should coordinate the EDDA process with other property-related activities to ensure that assessments and data gathering are conducted efficiently.

EDDA INTERACTION WITH OTHER ENVIRONMENTAL ISSUES

Information gathered during the EDDA process can be used to identify other environmental issues associated with a property. A summary of environmental areas that may affect real property transactions, and the regulatory drivers behind them, are described in this section. A more detailed description of the major environmental statutes and directives is provided in Appendix H.

National Environmental Policy Act (NEPA)

When executing any major federal action, such as property transfers, NEPA requires that agencies consider a host of potential environmental and socioeconomic issues, including but not limited to wetland preservation, effects of construction, local jobs and traffic concerns, and long- and short-term environmental impacts. NEPA consideration is particularly important when acquiring a property that was previously undeveloped, or when modifying or expanding facilities on developed property. In such cases, an EDDA makes note of the presence of sensitive environments, such as wetlands, and gathers basic site information that can be used in evaluating potential impacts. A separate analysis, however, is needed to meet the NEPA requirements, which can be found at 40 CFR Parts 1500–1508. Agency-specific directives should be consulted for additional information; for example implementation guidance is included as a chapter in the Environmental Protection Agency (EPA) Safety, Health, and Environmental Management (SHEM) Guidelines.

Environmental Justice

Executive Order (EO) 12892, *Federal Actions to Address Environmental Justice in Minority populations and Low-Income Populations*, requires that agencies consider the effect of disproportionately high and adverse human health and environmental effects to minority and low-income groups along with other social, economic, legal, and technical issues. This requirement mandates that agencies implement environmental justice strategies and policies and assess the

specific impacts of federal actions against the objectives of the strategy. The directive was amended by EO 12948 (February 1, 1995, Federal Register (Volume 60, Page 6381)).

Special Hazard Areas

Special hazard areas include flood-, mud slide-, and erosion-related hazards. Although indications of these special hazards may appear during the EDDA information gathering process, the EDDA process does not specifically address these hazards since they are not directly related to site contamination. Site suitability and other property transfer requirements are separate from the EDDA. Information about identifying and mapping special hazard areas can be found in 44 CFR Part 65. Deed restrictions may apply for both property acquisition and disposal with special hazard areas, and as a result, intended and future use must be considered.

Endangered Species Act (ESA)

Information on endangered species may be recorded during the sensitive-environment research component of the EDDA. However, this information typically is superficial and will not include the full species and habitat review that may be required. In the case of an acquisition, the presence of an endangered species could limit the intended agency activities or property use. If an agency is disposing of real property that has endangered species, deed restrictions may be required. The Act requires federal agencies to institute programs that preserve endangered and threatened species; and requires that federally authorized, funded, or executed actions not jeopardize any endangered or threatened species. A consultation with the U.S. Fish and Wildlife Service under Section 7 of ESA is generally required. Additional information on the ESA can be found in 50 CFR Part 17.

National Historic Preservation Act (NHPA)

The NHPA requires federal agencies to consider the impact of their actions on historic properties. The EDDA process includes a review of all available records regarding a property. Important information, such as documented archaeological finds or sites of historical significance are included as part of the report, although detailed review is beyond the scope of the EDDA. Before acquiring or leasing a site believed to be historically significant, further investigation may be required. Additional information on the NHPA can be obtained in 36 CFR Parts 600 and 800.

Removal of Chemicals and Hazardous Materials

Identifying the presence of chemicals and hazardous materials is central to the EDDA process; however, depending on the type of property transfer, the purpose for identification and the follow-up actions required will vary. For acquisitions or lease arrangements, it is critical for decision makers to know in advance whether materials are (or are not) present that may increase environmental liability. For disposals, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Community Environmental Response Facilitation Act (CERFA) require identifying and documenting the presence or absence of hazardous materials. For outgrants and outleases, the owner-agency is establishing a baseline prior to tenant activities. To facilitate any property transaction, prior to an EDDA, hazardous materials may be

removed and properly disposed of in accordance with Resource Conservation and Recovery Act (RCRA) regulations (40 CFR Part 265).

Licenses and Permits

Many site operations require operating licenses and permits that must be reviewed to determine whether they may transfer with the property or require special renewal, or whether they should be terminated based on intended future use of the property. Examples of these include environmental licenses and permits for:

- Air emissions (e.g., from boilers or furnaces)
- Water discharges to Publicly Owned Treatment Works (POTW)
- Water discharges to National Pollution Discharge Elimination Systems (NPDES)
- Radioactive material sources and operations
- Underground Storage Tank (UST) and Aboveground Storage Tank (AST) operations.

In addition, approved UST and AST spill and containment plans should be considered. The EDDA should note and document the environmental activities associated with licenses and permits. The EDDA report would not include other non-environmental permits that might also be associated with the property, such as those for:

- General facility operations
- Confined space
- On-site concessions
- Zoning variances and waivers.

Further, the disposition and transfer of any licenses or permits, regardless of the activity, are beyond the scope of the EDDA process. Federal managers will need to negotiate these issues separately to ensure appropriate resolution and closure.

EDDA INTERACTION WITH OTHER PROPERTY TRANSFER ISSUES

The EDDA process also considers other property transfer issues that may affect real property transactions. These issues are discussed in the next sections.

Personal Property

Whether initiating or terminating an occupancy, another component associated with property transfer is the management of personal property, including equipment, office materials, furniture, and movable or reusable materials. Managers will need to assess the status, disposition and ownership of personal property and make appropriate arrangements to relocate, dispose or transfer ownership as part of the property transaction. An inventory of personal property is not a component of the EDDA process, nor is the disposition of it. Early coordination of personal property management activities with the EDDA, particularly the on-site investigation, may help facilitate the overall property transfer process.

Equipment Decommissioning

Many transactions also involve equipment that will require decommissioning, disposal, or relocation consistent with the intended future use of the property. For instance, equipment may include transformers and capacitors that contain Polychlorinated Biphenyls (PCBs); and, if used to support activities that will no longer be conducted at the site, such equipment will need to be formally decommissioned and deactivated in accordance with federal, state and local requirements. The EDDA process should note the presence of the equipment associated with environmental activities, the need for formal decommissioning, and will indicate if contamination from the equipment is suspected or confirmed. The EDDA process, however, does not include equipment decommissioning requirements or the UST closure process. Federal managers, nonetheless, will need to consider the requirements and responsibility for equipment decommissioning as part of the overall property transfer and provide the necessary documentation to demonstrate that the equipment has been appropriately closed. General guidance on issues relating to equipment deactivation and decommissioning is provided in Appendix I. Examples of activities and processes for equipment decommissioning from EPA laboratories are included in Appendix J.

Property Suitability

The condition and suitability of the property for its intended uses is an important consideration for any property transaction. Prior to transfer, an agency will likely undertake a property or building inspection to assess the condition of the structures and working infrastructure (e.g., heating and cooling, water and wastewater systems) to assess what upgrades, modifications, or rehabilitation will be necessary for the future owner or occupant. Where an agency is intending to occupy a site, the property inspection will assist in identifying the suitability of the property and outline needed improvements to be undertaken by the agency or the owner. In instances where an agency is vacating a property, the new occupant will typically conduct the property inspection. Based on lease agreements and conditions for returning the property to the owner, agencies may also need to review agency-occupied facilities to assess the need to rehabilitate properties. Information from a property assessment can be relevant to the EDDA in identifying property conditions that may potentially result in environmental liabilities (e.g., degraded wastewater treatment systems may have contributed to local soil and groundwater contamination).

USE OF GENERAL EDDA INFORMATION

The EDDA process provides a significant amount of valuable information on many aspects of property transfer liability. The information can be an indicator that other investigations are required, such as historic site or endangered species searches. However, it is important to realize that the EDDA is one of several tools that identify and manage the full range of liabilities and issues involved in property transfer. Besides managing contaminant liability, the EDDA process provides basic information that can be used as part of related investigations or as indicators to identify other facility or environmental considerations when preparing for property transfer.

CHAPTER 3 THE ENVIRONMENTAL DUE DILIGENCE AUDIT PROCESS

OBJECTIVES

The focus of the Environmental Due Diligence Audit (EDDA) process is to identify and document proposed transfer properties for potential environmental contamination. The agency's objectives in executing the EDDA process include:

- Ensuring that all environmental due diligence requirements are addressed and potential environmental contamination is identified
- Establishing a consistent and defensible approach for addressing necessary environmental actions
- Providing the environmental baseline and assessment of properties to assist in property transaction decision-making
- Avoiding costly litigation and environmental remediation liability under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), or other relevant regulatory statutes.

PHASES OF THE EDDA

The EDDA process contains three distinct and cumulative phases that are designed to support key decision points. Progress from one EDDA phase to the next is based on the need to further assess property contamination. Thus, the EDDA process ends at any point where the agency deems it has sufficient property contamination and liability information to make a decision regarding the property. If all three phases are necessary, they are as follows:

- Phase I—Liability Assessment
- Phase II—Confirmation Sampling
- Phase III—Site Characterization.

The intent of the Phase I is to evaluate the *potential* for environmental liability at the site. This is done through interviews, a site visit, and by gathering and analyzing information on current and past site uses and activities. If the Phase I report indicates a *potential* for environmental liability from contamination, the Phase II assessment is performed using focused field sampling to confirm or deny the suspected contaminants. Once contamination is confirmed, a Phase III EDDA may be initiated to fully characterize the nature and extent of the contamination and develop cleanup options and recommendations.

The EDDA decision-making process and the integration between the three phases is discussed in Chapters 4 through 6 of this document (also see Figures 3-3 and 3-4). Throughout the process it is important to remember that the EDDA has two overriding objectives: 1) to identify liability from past site uses, and 2) to provide technical information to assist in agency decision making.

Phase I—Liability Assessment

Phase I identifies potential areas of contamination and environmental concern, which may result in environmental liability. It consists of:

- Preliminary activities
- Site visit
- Records review
- Regulatory review
- Geologic and hydrogeologic review
- Report development.

All data gathered during this phase are documented in a Phase I report. The activities and process for the Phase I Liability Assessment are discussed in more detail in Chapter 4.

Phase II—Confirmation Sampling

If the Phase I Liability Assessment indicates possible contamination and the agency owns, occupies, or has sufficient interest in the property, Phase II (or the regulatory-mandated equivalent) will be conducted. (Note: For agency property designated for disposal, confirmation sampling is also required by the Community Environmental Response Facilitation Act (CERFA).) The Phase II EDDA involves targeted sampling to confirm or deny the presence of suspected contamination identified during liability assessment. The information contained in the Phase I Liability Assessment report is used to develop a strategy for carrying out Phase II. Depending on the findings and recommendations described in the Phase I report, several activities may be performed under Phase II. Typically, these activities consist of:

- Reviewing and evaluating the findings in the Phase I report
- Developing a confirmation Sampling and Analysis Plan (SAP)
- Performing sample collection and analysis
- Evaluating the sampling results against environmental or hazardous waste standards
- Developing the Phase II report.

The activities and process for the Phase II EDDA are discussed in more detail in Chapter 5.

Phase III—Site Characterization

A Phase III EDDA may be necessary when contamination has been confirmed by the Phase II EDDA. The purpose of Phase III is to fully characterize and assess the nature (i.e., types) and extent (i.e., magnitude or distribution) of site contamination. In addition, site characterization involves identifying appropriate cleanup technologies based on the nature and extent of contamination, potential cleanup goals, technology applications, and cost. Typically, Phase III activities include:

- Evaluating of prior EDDA reports to develop a site characterization-sampling strategy
- Performing more extensive sampling to assess the full extent of contamination
- Evaluating the contamination risk in relation to future land use
- Evaluating the technological viability and cost of cleanup alternatives
- Developing the Phase III report.

The activities and process for Phase III are discussed in more detail in Chapter 6.

EDDA SCHEDULE

Depending on the type of property transfer, organizations involved, location importance, environmental condition of the property, and other agency-specific issues, the EDDA process may include one or more phases. Likewise, the schedule for the EDDA may vary. For example, an assessor budgets 60 to 80 working hours to complete a Phase I; however, issues regarding availability and accessibility of information result in delays. Such delays in the schedule are likely to defer the completion date, though they should not unduly increase the overall level of effort. Figure 3-1 provides a conceptual breakout of time allocations and activities for the Phase I Liability Assessment process. Managers should anticipate the complexity of the real property transfer process and the unique nature of the property in determining the time needed to collect information and address site logistics. For all EDDA phases, a flexible schedule is often appropriate.

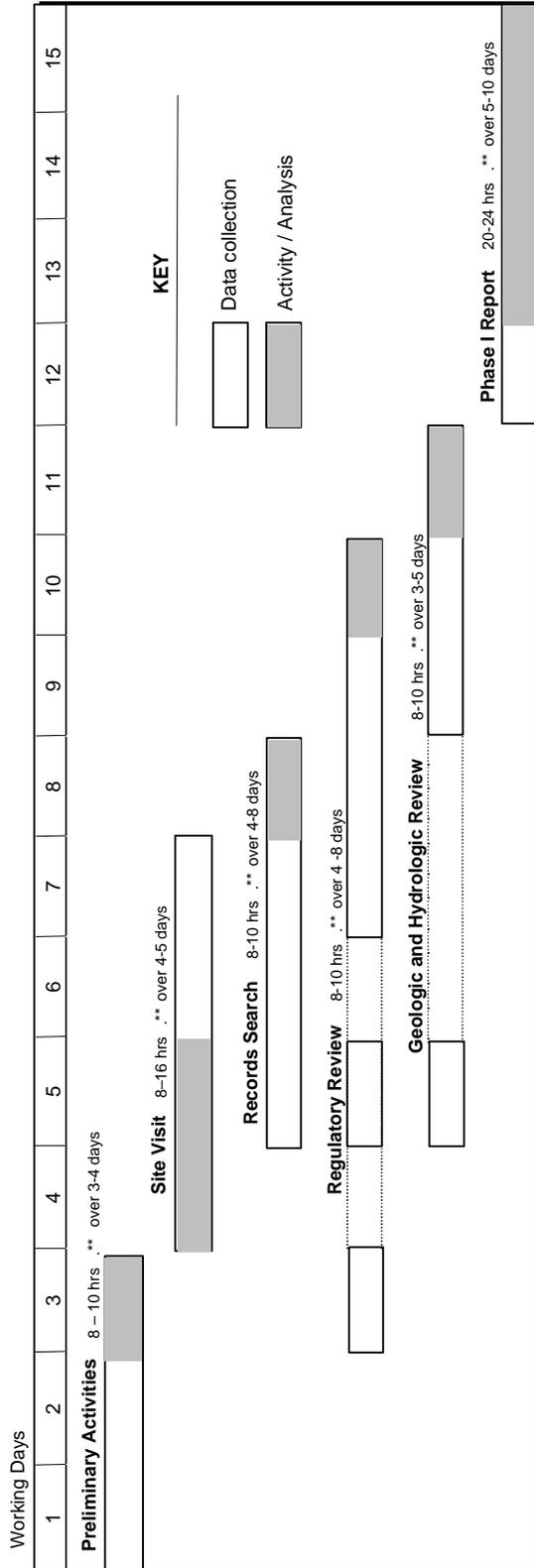
RISK AND FLEXIBILITY IN THE EDDA PROCESS

Identifying potential risk and liability involved in property transactions is the heart of the EDDA process. As discussed previously, these risks will vary greatly depending on the type of property transaction and the type of property to be transferred. For instance, industrial properties typically have a higher probability for potential contamination than property that is solely used for office space.

Figure 3-2 provides a general risk framework for different transaction and property types. When approaching an EDDA project, it is useful to consider this model—and to plan the EDDA with consideration for the appropriate risk level.

Even though all EDDAs cover a standard set of investigative areas, they are not all equal; and, inherently the EDDA process needs to be flexible to reflect the varying degree of risk associated with the different types of property transactions and property-types. For example, the assessment of a former industrial site will likely require deeper investigation and evaluation than an EDDA for previously undeveloped woodlands in a remote location.

**Figure 3-1
Time Line for Phase I Liability Assessment Activities***

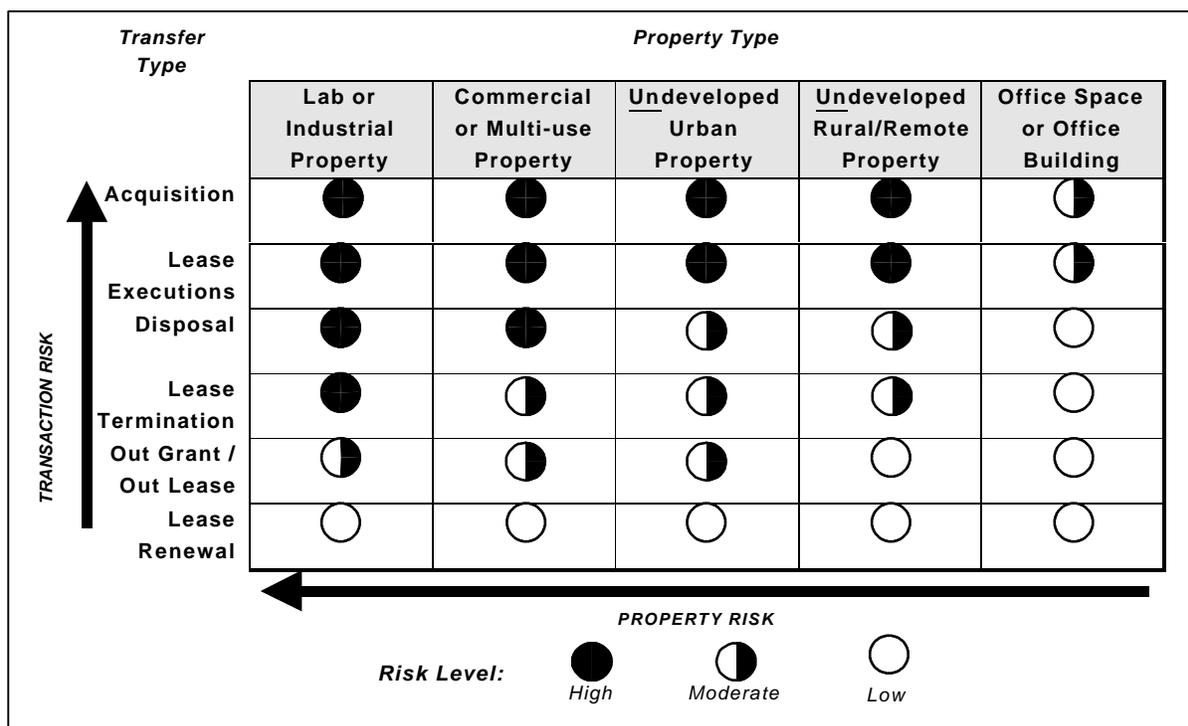


* Minimum times will vary based on property and transaction types.

** Displayed time estimate based on requirement of approximately 60 to 80 hours for a basic Phase I EDDA

Principal Activities	Preliminary Activities	Site Visit	Records Search	Regulatory Review	Geologic/Hydrologic Review	Phase I Report
<ul style="list-style-type: none"> Obtain basic property use/activities information Property map Contact Owner and establish logistics for site visit Develop and distribute questionnaire 	<ul style="list-style-type: none"> Visual survey of the site and neighboring properties Interview property owners, on-site employees and neighboring owners Review on-site documentation 	<ul style="list-style-type: none"> Site ownership and use history (title search, facility records) Aerial photos, site photos, permits, previous environmental surveys Fuel storage tanks, hazardous material and waste management, sensitive environments 	<ul style="list-style-type: none"> Review permit and compliance history for subject and neighboring properties Access the regulatory databases (IDEA, RCRIIS, and CERCLIS) 	<ul style="list-style-type: none"> Obtain basic information on: <ul style="list-style-type: none"> Direction of groundwater flow Depth to groundwater Water Quality Soil characteristics Site topography Site hydrology Availability of documents 	<ul style="list-style-type: none"> Draft report Technical and quality revisions Publication and delivery 	<ul style="list-style-type: none"> Revisions and response to comments
<ul style="list-style-type: none"> Receipt of pre-audit questionnaire and materials 	<ul style="list-style-type: none"> Site access and security issues Availability of site personnel Site size and complexity Travel time to site 	<ul style="list-style-type: none"> Availability of records Proximity to source of records (e.g. county seat) 	<ul style="list-style-type: none"> Access and responsiveness to local regulators Document requests (e.g. FOIA) 			

**Figure 3-2
General Risk Framework**



Flexibility is built into the EDDA process to allow the assessors to target high-risk areas and allocate resources (and time) appropriately. Particularly in the Phase I Liability Assessment, the EDDA process requires that the assessor investigate a broad range of areas and exercise professional judgement in order to focus on those issues that present the highest likelihood for risk. The assessor’s understanding of risk is continuously refined as additional information is gathered and assessed during the EDDA process. Based on this emerging understanding of potential risk, the assessor continues to make adjustments with each step in the process.

Inevitably there will be exceptions to the general risk framework provided in Figure 3-2, and it is the role of assessor to recognize these exceptions and modify the EDDA process accordingly. For instance, the model shows a low risk associated with the disposal of an office building property; however, if an industrial operation located on the site prior to environmental regulation was forgotten, soil contamination may remain. An experienced assessor should see clues when reviewing the title search results and other Phase I material. The example also emphasizes how prior site history and use provide a baseline for evaluating the nature of risk at the site, whether or not the agency owns the property.

Overall, the strength of the EDDA process is in its flexible approach to balancing the agency’s need to uncover and define risk areas, to manage liabilities associated with property transactions, and to accomplish due diligence. Readers should keep in mind that the materials, techniques, and information sources presented are to be used as a “guide” in how the process should be applied. The background and experience the assessor and EDDA team bring to the process play a significant roll in successfully managing the flexibility provided by the EDDA process.

REGULATION OF CONTAMINATED SITES

CERCLA, RCRA, the Toxic Substance Control Act (TSCA), the Clean Water Act (CWA), the Oil Pollution Act (OPA), and state regulations prescribe for responsible parties the procedures to investigate and remediate environmental contamination. Alternately, evaluating for potential environmental contamination and liability was a process originally developed by lenders in reaction to CERCLA. Thus, the EDDA “phases” were developed to provide a practical acquisition focus to property transfer, rather than providing a framework for environmental cleanup. Addressing the CERCLA considerations of “due diligence” and “all appropriate inquiry” for environmental risks are the basis for Phase I Liability Assessment activities. When activities beyond a Phase I are indicated on agency-held property, the agency may be compelled to follow a regulatory-based process for addressing contamination. In such instances, *compliance with applicable CERCLA, RCRA, TSCA, CWA, OPA, or state requirements takes priority over EDDA in dictating the process to address specific types of liabilities or contamination*. When the property is not held by the agency and the agency is not a potentially responsible party, the Phase II and Phase III EDDA processes exist as guidance to confirm and characterize potential contamination and liability.

The statutes and regulations governing the requirement to investigate and remediate environmental contamination will vary depending on the nature of the contamination and when the release occurred. In such situations the Phase II and III sections of this document (Chapters 5 and 6) provide only a broad reference to the parallel regulatory procedures. For additional information on the CERCLA and RCRA processes, refer to Appendix H, Regulatory Overview.

In addition to the regulations on investigation and remediation of environmental contamination, National Environmental Policy Act (NEPA) may also apply. A facility closure or property transfer disposal action will often typically qualify as a “major federal action” under NEPA. As such, the agency’s NEPA compliance efforts for this action (environmental impact assessment and public participation process) should also consider the EDDA activities. Depending on the timing, the agency’s NEPA documentation may reference the completed EDDA Phase I and II reports, or may mention these as planned activities.

Along this line, NEPA public outreach activities may be sequenced with the evaluation and selection of site cleanup options. Public outreach may involve agency meetings with the community to address their concerns, agency grants to the public for their evaluation of the remedial alternatives, or creating fact sheets for the public on the contamination and remediation at the site.

To determine the applicability of NEPA, CERCLA, RCRA, or state regulations for a given property transaction, refer to the Regulatory Overview in Appendix H, the program offices, and legal counsel before proceeding.

ROLES AND RESPONSIBILITIES

The EDDA process is typically undertaken by a team of technical and management staff responsible for overseeing and managing the process, conducting the EDDA, performing the technical reviews, and developing a decision based on report findings and input from agency real-estate and legal staff. Roles and responsibilities for conducting the EDDA process and decision-making are determined on an agency-by-agency basis. However, in all cases an agency representative should be identified to manage and oversee the execution of the EDDA.

Regardless of the nature of the property transaction, the EDDA should be performed by qualified individuals who have the relevant technical environmental background, training, and experience (refer to Appendix K for sample qualification requirements). Contractors selected to assist or conduct Phase I activities should also satisfy the contractor specification guidelines presented in Appendix L.

The following description of typical EDDA participants and roles provides a generic interpretation of how agencies may structure an “EDDA team.” Depending on internal agency policies, there will be at least three primary team roles carried out during the Phase I: assessors, technical reviewers and agency decision-makers. In addition, there are collaborating roles for real-estate and legal staff. The specific roles of the EDDA team include:

- *Assessors*—Technical environmental staff who conduct the EDDA, develop recommendations, and draft reports. Assessors may be either agency or contractor staff; often Phase II and III EDDAs are performed exclusively by contractor resources.
- *Technical reviewers*—Technically qualified agency personnel who review the EDDA report for technical accuracy in methodology, scope, depth, and findings. A technical reviewer, who concurrently is the project leader, may also work with the assessors up front to determine the scope and work plan—in addition to reviewing and accepting the EDDA report. Technical reviewers should always include, but may not be limited to, agency personnel.
- *Agency decision-makers*. Agency management involved with overseeing the full scope of the property transfer activities and vested with authority to determine the agency’s ongoing interest and responsibility for a given property. Agency executive decision-makers are typically briefed throughout the EDDA process to maintain an understanding of site issues, parameters, and implications of the EDDA process. This central role on the EDDA team should be fulfilled by one or more individuals who are collectively vested with the authority for determining the agency’s position on the property transaction and committing necessary resources.
- *Real-estate personnel*. Professionals responsible for executing the property transaction on behalf of the agency. In acquisition lease execution situations, real-estate personnel will screen and identify possible candidate sites. During the EDDA process, real-estate staff remain involved facilitating the EDDA process by providing basic site information, executing the title search, and coordinating with property owner and operator.

- *Legal representatives.* Agency staff who participate in property transactions to ensure that the EDDA process is conducted appropriately and the report findings demonstrate due diligence. This offers legal protection to both the agency and the transacting entity. Lawyers typically provide advice on the EDDA process and are involved in the document reviews to ensure that the final report meets legal objectives. In some cases, the EDDA document may be conducted as attorney-directed work to ensure future protection of the documents for future landowners.
- *Site owner and operator.* Whether initiating occupancy (acquisition, lease executions) or vacating a site (disposal, lease termination) it is important to involve the current landowner or operator early in the EDDA process planning. Site owners and operators need to be fully apprised of the scope, intent and specific activities of the EDDA process and understand the implications of assessing and determining environmental liabilities. Owners and operators are typically included in a review capacity for preliminary EDDA report findings and are often a recipient of the final EDDA documents. When the subject property is owned or operated by the agency, there is also a critical role for the facility manager and staff. In such cases, the facility manager needs to identify the relevant personnel to facilitate the interview process, and all must provide accurate information to the EDDA team. Likewise, out-of-agency landowners and operators are excellent sources of basic site information and are an important source of both interview information and current site documentation.

USE OF EDDA IN DECISION MAKING

The EDDA process is used to document the results of the investigation, document that due diligence has been exercised, and provide a basis to evaluate potential and actual environmental liabilities to aid in property transaction decisions. Professional judgement decisions are an integral part of the EDDA process, from deciding whether a full or partial Phase I Liability Assessment should be conducted, to deciding whether or not to proceed with the property transaction based on EDDA investigation results.

The EDDA process differs significantly from CERCLA in this decision-making aspect. While CERCLA directs a structured process from identifying contamination through site cleanup, the focus of the EDDA process is to manage liability. This is particularly important for property acquisition and lease execution. Figures 3-3 and 3-4 are decision making flowcharts for acquisition and disposal transactions.

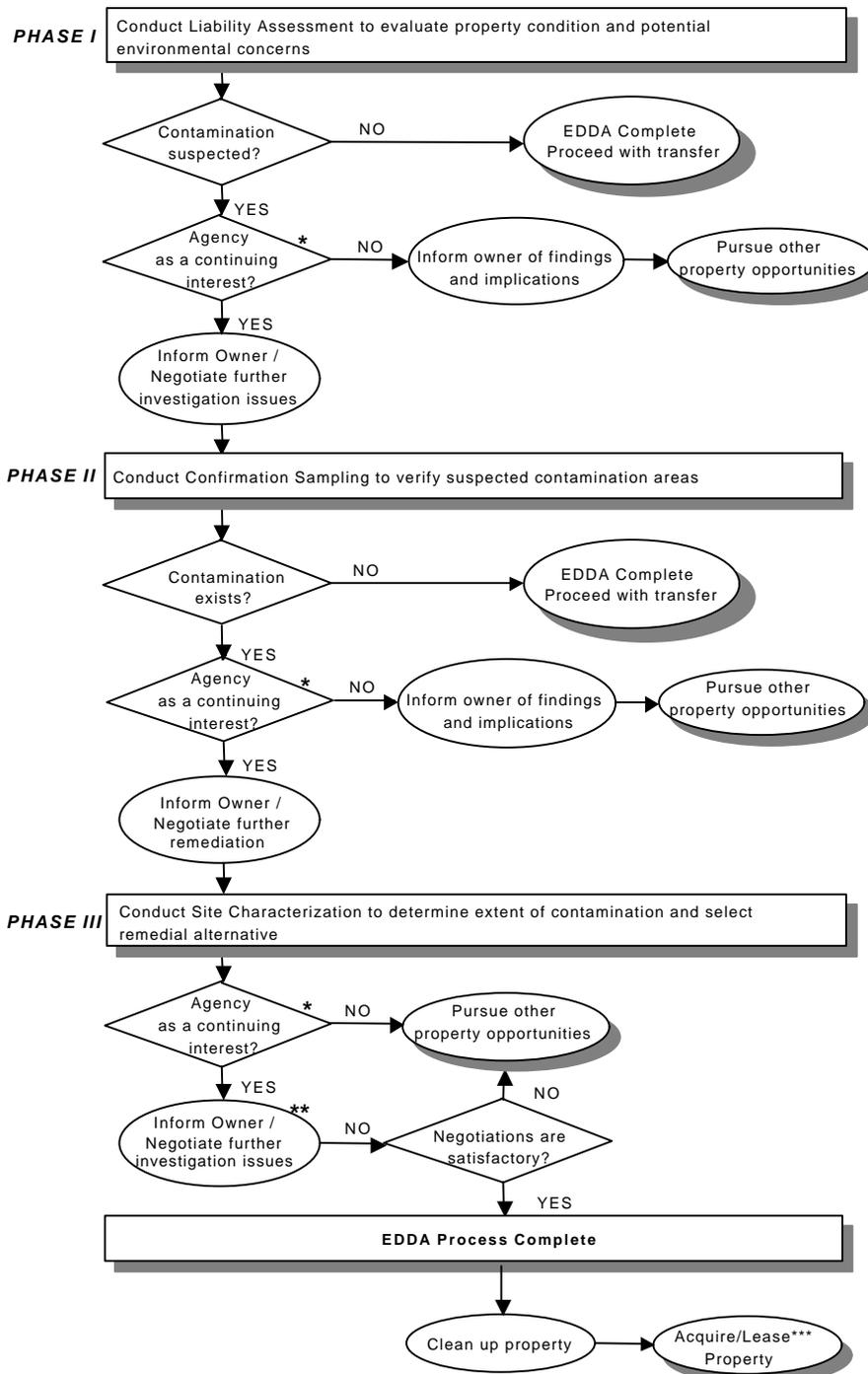
To further illustrate the decision making process, consider that the EDDA Phase I Liability Assessment is conducted for most property transactions. The need for additional EDDA phases for acquisition or lease transactions, however, will depend on the importance or strategic nature of the property. If the location of the property to be acquired or leased is relatively unimportant, then the agency decision-maker choosing to minimize agency liability would pursue a property without suspected contamination. Conversely, if the location of the property to be acquired or leased is important, then the agency may decide to gather additional information from a Phase II EDDA to further assess the likelihood of liabilities before making a decision about acquiring or leasing the property. In some situations, if an EDDA report documents contamination at a

property of strategic interest, the agency may elect to lease the rather than acquire the property. In such a case, the EDDA has allowed the agency to avoid “acquiring the liability” and to structure a “managed approach” to insulate intended operations from known or suspected contamination.

During a Phase II EDDA if contamination is not confirmed, the property transaction can proceed without adding undue risk for environmental liability. If, however, the presence of contamination is confirmed during the Phase II EDDA, decision makers must determine whether the importance of the site outweighs the potential liability that would accompany acquisition of the property. At this point, the agency may enter into negotiations with the owner to address the contamination, or the agency may choose to pursue further assessment of the extent of the contamination on property with a Phase III EDDA. The Phase III EDDA information will allow the agency to make a decision by weighing the potential liability costs against the value of the property. The agency could decide to take on these costs—possibly even using the information to lower the purchase price of the property. If the findings of the Phase II or Phase III EDDA appear significantly adverse, then other acquisition or lease opportunities may become more acceptable. There is no requirement to continue to a Phase II or Phase III for acquisition or lease transactions.

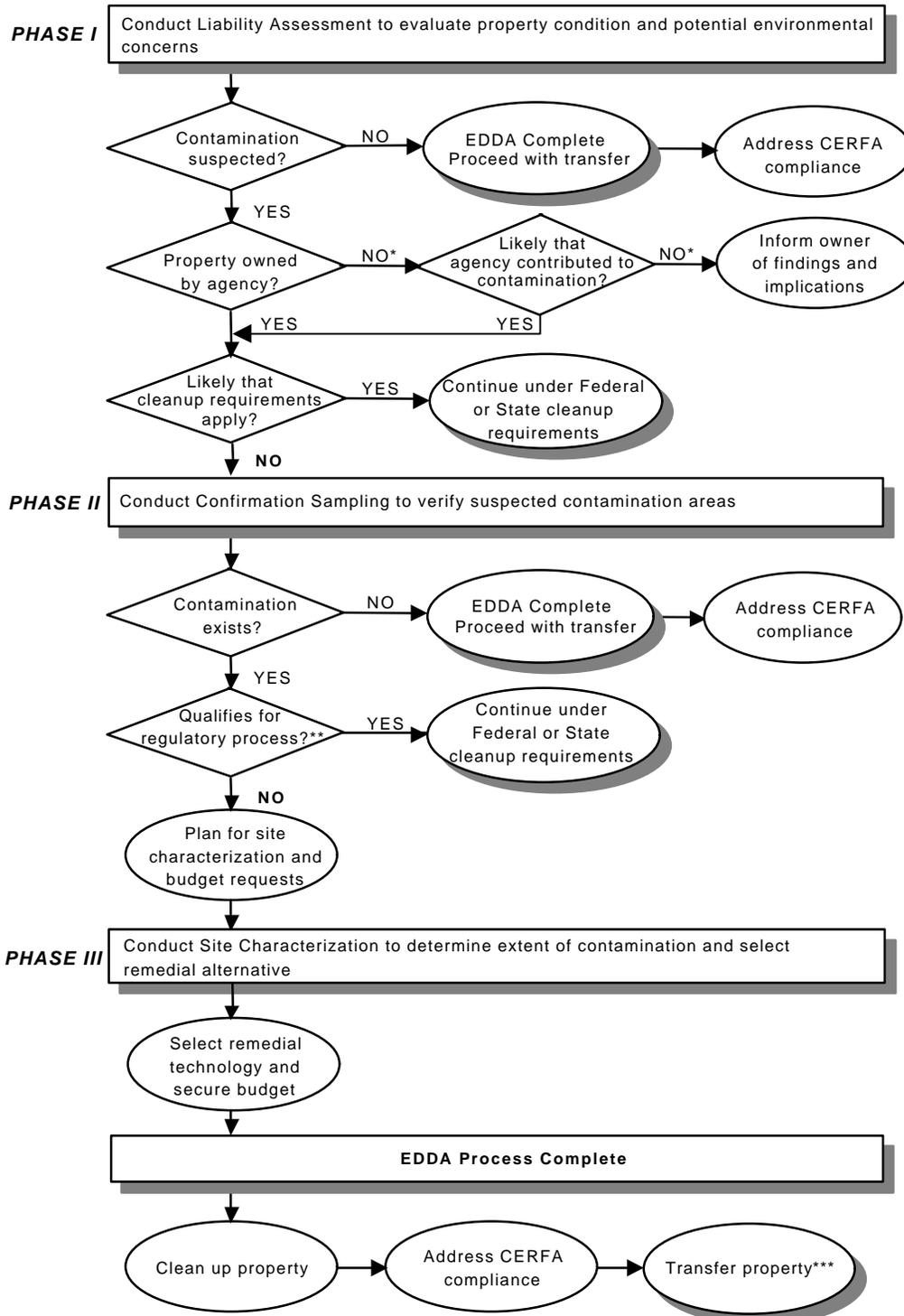
For disposal of federally owned or operated properties the decision-making process is fairly direct. Those properties that the agency releases to organizations outside the federal government are required to be free of contamination or have an authorized remediation in process before the transfer process can be completed. Where the Phase I Liability Assessment indicates a potential for contamination, federal agencies must confirm and, as necessary, characterize and cleanup contaminated property.

Figure 3-3
Decision Process for Acquisition and Lease Execution Actions



* Value of property to the agency outweighs the scope of potential liability or is of strategic interest.
 ** Property owners or agency may complete EDDA at their cost, provide for cost offsets against property value, or agree on other cost allocation position as part of negotiated settlement.
 *** Acquisition / lease may proceed before cleanup activities are completed.

Figure 3-4
Decision Process for Disposal and Lease Termination Actions



* Lease termination only

** Consult experts for guidance on regulatory contamination and cleanup requirements

*** Properties may—with regulatory approval—be transferred before cleanup is complete

CHAPTER 4
PHASE I—LIABILITY ASSESSMENT

DESCRIPTION

The purpose of the Phase I Environmental Due Diligence Audit (EDDA) is to identify potential areas of hazardous waste contamination or environmental liability associated with a property to be transferred. This chapter describes in greater detail the EDDA Phase I Liability Assessment, which consists of the following elements.

- *Preliminary activities.* Coordinating site visit logistics, gathering basic information regarding the subject property, and building a rapport with the site owner and site contact.
- *Site visit.* Observing visual signs of contamination and uncovering evidence of potential liabilities and contamination from past and current operations, or from off-site activities.
- *Records review.* Examining applicable documents, records, and aerial photography to supplement site visit findings and to gain additional information regarding prior uses of the property that may indicate a release of hazardous substances has occurred.
- *Regulatory review.* Examining applicable enforcement records to supplement site visit findings and to gain additional information regarding past environmental compliance violations, fines, or outstanding liens.
- *Geologic and hydrogeologic review.* Evaluating potential contaminant migration pathways and exposure routes.
- *Report.* Documenting the results of the EDDA Phase I Liability Assessment; documenting that due diligence has been exercised; and, as necessary, documenting information to initiate Phase II, confirmation sampling.

Sampling is not performed during the liability assessment, all of the information included in the Phase I report is gleaned from existing documents or inferred from observation made during the site visit. The environmental areas that are examined during this process include the following:

- Hazardous substance release on the subject or adjacent property
- Hazardous material and waste handling practices
- Underground and aboveground storage tanks
- Polychlorinated biphenyls (PCBs)
- Pesticides and herbicides
- Sensitive environments (including wetlands) on the subject or adjacent property
- Historic or cultural significance of the subject or adjacent property
- Asbestos
- Lead
- Radon and indoor air
- Ionizing and non-ionizing radiation
- Topographical and natural resource factors.

These elements and areas are covered in further detail in the following discussion of EDDA Phase I Liability Assessment process.

PRELIMINARY ACTIVITIES

Prior to conducting the site visit, some preliminary activities are necessary, including logistics for the site visit, obtaining basic property information, and contacting the site owner or operator to brief them on the purpose, scope, and process of the EDDA Phase I Liability Assessment.

Logistics

Identifying a primary point of contact for the subject property will facilitate the entire EDDA process. Negotiate an exact date and time for the site visit with this person, then inform: the property owner and operator; environment, health, and safety manager; other site representatives; and relevant agency officials. As appropriate, invitations to attend the briefing and walk-through should be extended. During this preliminary step it is also necessary to discuss and resolve escort issues, including: access, site security, safety briefings and the need for specialized equipment, such as Personal Protective Equipment (PPE).

Contact

Preliminary telephone interviews may include the property owner or operator, adjacent property owners, and state and local authorities.

Questionnaire

A questionnaire can be used as a tool to gather fundamental information from the site owner and operator or lead point of contact. It may be administered by the assessor during the initial phone contact, or it may even be electronically mailed to the property manager when the property is agency-held. In either case, the name, phone number, position, and responsibility of the person answering the questions must be documented to allow for later verification as necessary. In addition to gathering basic information about the property, a questionnaire may help focus the site visit and document search to issues of relevance to the particular property. A sample questionnaire is provided in Appendix M.

Gather and Review

The assessors should prepare for the site visit by reviewing available site maps and documentation relevant to site activities and environmental issues. Information gathered during this step will give the assessors a general understanding of the property and site activities, in particular:

- The exact location and size of the property
- Identity of current property owners
- A site contact, to provide access to the property during the site visit
- The number of buildings and structures located on the property
- Presence of Aboveground Storage Tank (AST) or Underground Storage Tank (UST)

- Current site activities or operational issues that could have an impact on the site visit.

All of the preliminary activities provide a foundation for conducting the site visit.

SITE VISIT

The site visit is an essential element of the EDDA Phase I Liability Assessment that allows the assessors to make first hand observations. In general, it consists of the following activities:

- Visual survey of the subject property and neighboring properties
- Interviews with property owners, on-site employees and neighboring property owners
- Review of on-site documentation.

The visual survey portion is intended to identify visible signs of environmental contamination or evidence of suspected contamination from current or past operations, both on and off the property.

The interviews should include discussion of site management and operations with the property owner, manager, or a designated representative. As warranted and reasonably possible, former facility personnel may also be identified and interviewed. They may have information regarding suspected contamination from past activities conducted at the facility. The input and inquiry of as many personnel as possible will help produce valid and defensible information.

The site visit further includes review of on-site records relevant to the environmental management and history of the property. All three aspects of the site visit are discussed in greater detail in the following sections. Appendix N also provides sample questions to consider when performing a site visit.

Focus

Basic environmental considerations, including the items listed below, should be reviewed as part of the site visit. In addition, an assessor should walk the *entire* perimeter of the property to look for potential site contamination issues, and to note the presence and condition of any sensitive environments. *Any potential or actual hazardous conditions encountered during the site visit should be reported to the owner and operator or facility manager.*

The following is summary of issues to be addressed during the walk-through.

- Former and current uses of the subject and adjacent properties
- Adjacent property characteristics such as zoning, future land use, UST, and past uses
- Sensitive environmental areas
- Surveys or inspections, past and present, including radiological, asbestos, radon, and UST
- National Priorities List (NPL) status of the subject property and properties in the vicinity
- Permits, past and present, including: air; Nuclear Regulatory Commission (NRC); National Pollution Discharge Elimination Systems (NPDES); Publicly Owned Treatment Works (POTW); UST; and hazardous waste Treatment, Storage, or Disposal Facility (TSDF)

- Hazardous releases, including disposal, injection, and discharging
- Hazardous waste handling and storage practices
- Other waste handling practices—solid, sewage, septic, drains, sumps, lagoons, and pits
- USTs or ASTs—operating, closed, leaking, or inactive
- Fuel leaks or releases on both subject and adjacent properties
- Radon
- Potentially hazardous dusts and indoor air quality
- Asbestos-containing materials—use, storage, and research
- Lead-based paints and other lead sources—use, storage, and research
- Ionizing and non-ionizing sources, such as radiological materials and equipment—use, storage, and research
- PCB-containing materials—use, storage, and research
- Pesticides—use, storage, and research

Observations

Observations made during the site visit will include obvious signs of current or potential contamination. Many hazardous substances will stain soils or other surfaces and may destroy vegetation, such as grass or plants. The presence of drums may be an indication of hazardous waste contamination. The site owner and operator or representative should be consulted to identify the contents of unlabeled drums. Material Safety Data Sheets (MSDS) on file at the facility site may also be helpful in determining hazardous materials present. Additionally, to determine the potential for contamination, inquiries should be made about past practices, such as the disposal of chemicals in sinks.

In conducting a walk-through, EDDA team members should not engage in any activities that could put themselves or others in jeopardy. Certain activities may require specialized training, procedures, or permits in order to conduct them safely and in compliance with regulatory requirements. Such activities include opening drums of known or suspected hazardous materials, and entering hazardous areas, such as confined spaces, trenches or pits five feet or deeper.

Hazardous Material and Waste Handling Practices

The terms “hazardous material,” “hazardous waste,” and “hazardous substance” refer to a wide range of chemical, radioactive, and biological substances or materials.

- *Hazardous material*—Any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce (49 CFR Part 172, Table 172.101). This includes hazardous substances and hazardous wastes.

- *Hazardous waste*—Under the Resource Conservation and Recovery Act (RCRA), a waste is considered hazardous if it is listed in, or meets the characteristics described in 40 CFR Part 261, including ignitability, corrosivity, reactivity, or extraction procedure toxicity.
- *Hazardous substance*—Any element, compound, mixture, solution, or substance defined as a hazardous substance the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and listed in 40 CFR Part 302. If released into the environment, hazardous substances may pose substantial harm to human health or the environment.

Hazardous wastes and the potential for past release or mismanagement presents the greatest single area for environmental concern and potential for liability. Details about correct waste handling, storage, and disposal practices should be available from either the owner and operator or from the facility environment, health, and safety manager. If the subject property is owned or operated by the agency and is under review for disposal or lease termination, the review team should be extra vigilant to account for all hazardous materials and wastes and when they will be transferred. Any facility which disposes regulated quantities of hazardous materials will have an Environmental Protection Agency (EPA) waste generation identification number on record.

Underground Storage Tanks and Aboveground Storage Tanks

Petroleum products or hazardous substances may be present on-site in USTs or ASTs, as well as associated underground pipelines. A leaking UST or AST system presents a potential risk of contaminating surface soils, surface waters, or groundwater. There may also be a potential fire or explosion hazard from a poorly maintained or leaking UST or AST system containing ignitable or reactive materials. The entire system, including sumps and pits, should be visually inspected where possible to identify potential sources of contamination. The questionnaire in Appendix O may be used as a protocol or guide for obtaining additional information on UST and AST. Federal regulatory requirements for managing USTs are found in 40 CFR Part 280.

Polychlorinated Biphenyls

PCBs are organic chemicals that have been determined to be a public health concern. In the United States PCBs have not been manufactured since 1979; however, they remain prevalent in many types of electronic equipment and hydraulic fluids. Examples of equipment that may contain PCBs include transformers, capacitors, and light ballasts. In addition, fluids associated with heat transfer systems, hydraulics and waste oils may also contain PCBs. The regulations under Toxic Substance Control Act (TSCA) cover PCBs and require prominent labeling and management activities. Once introduced into the environment, PCBs are extremely persistent and do not breakdown. The assessor should establish whether PCBs are associated with the property and pose a potential liability. Assessors should also document all equipment that may be PCB-containing. Any suspect equipment that is not marked as “non-PCB equipment” should be considered a potential source. TSCA regulations for PCB management are codified in 40 CFR Part 781.

Pesticides

Pesticides are chemical products developed to control plant or animal life. The term “pesticide” includes insecticides, herbicides, rodenticides, fungicides, disinfectants, and plant growth regulators. The most widely used pesticides share some common traits:

- They tend to be chlorinated hydrocarbons
- At sufficient levels, they tend to produce a wide range of adverse effects in humans, such as nerve damage, liver damage, and kidney failure
- They tend to bioaccumulate, meaning that as plants and animals ingest these chemicals and are in turn ingested by other animals, the poisons accumulate up the food chain. Therefore, what starts out as a small, non-harmful release may accumulate into harmful doses for other organisms.

Assessors should document both the use and the management of pesticides at the site.

Sensitive Environmental Areas

Sensitive environments encompass a broad spectrum of site characteristics (e.g. wetlands, coastal zone, parks and recreational areas). Certain ecosystems are considered critical when endangered or threatened species are sustained within that ecosystem. As a result, evaluation of a property requires an awareness of floral and faunal environments, wetlands, and endangered species. Though some issues related to the presence of sensitive environments are outside the scope of EDDA, during the site visit the assessor should walk the entire perimeter of the site to identify sensitive environments and note any potential for contamination, either on- or off-site.

In addition to wetlands, all surface water retention ponds, stormwater management units, surface impoundments or pits should be identified. To the most reasonable extent possible, the use, contents, and characterization reports of these ponds, pits, or impoundments should be analyzed to determine if suspected contamination exists.

Other sensitive environments, such as coastal areas, parks and natural preserve areas, or surface waters (e.g. rivers, streams, ponds) may also present future limitations to property use or constitute difficult-to-address receptors for contamination issues. These resources should also be noted and specifically observed during the site visit.

Historic and Cultural Significance

The Phase I provides an opportunity to consider historic significance in the property transfer. Districts, sites, buildings, structures and objects that are significant in American history, architecture, archaeology, engineering and culture are to be preserved for present and future generations. Assessors should specifically inquire into the historical and cultural significance of the site and adjacent properties. The EDDA Phase I Liability Assessment should note any potential restrictions to property use or development.

Asbestos

Asbestos is a naturally occurring mineral which is a very effective heat and sound insulator. As a consequence, it was used in many buildings as a fire and noise retardant. However, it has been linked to several diseases, including lung cancer; and since 1987 it has not been used in construction materials. Nonetheless, most structures constructed before 1987 have Asbestos-Containing Materials (ACM) in insulation, floor tiles, mastic, pipe-wrap, roofing, and other materials. Sites which manage friable ACMs should have an asbestos operations and management plan on-site that contains a survey of the site ACMs. Assessors should review any site-specific asbestos documentation, assess construction dates, and visually examine building materials to judge whether ACM may be present at the site. Keep in mind that assessors should *never disturb any objects suspected of containing ACM*; doing so requires specialized training and certification, and if done improperly may cause a hazardous situation.

Lead-Based Paint and Other Lead Sources

Many buildings and structures contain significant amounts of lead-based paints and other lead sources that may pose an environmental health condition at subject property. Other sources include lead piping and solder that may contribute to high lead content in the drinking water. Lead has been associated with central nervous systems disorders, particularly among children and other sensitive populations. Exposure to lead is usually through *inhalation* during renovations and demolition activities or through *ingestion* of paint chips or lead-contaminated drinking water. Assessors should evaluate the potential for site structures to have lead-based paints and inspect building features and documentation to determine whether lead piping has been used.

Indoor Air Quality, Radon and Potentially Hazardous Dusts

Radon, potentially hazardous dusts, and other indoor air issues are not readily observable. Radon is a naturally occurring, invisible, odorless, tasteless, and radioactive gas. Inside enclosed spaces radon and other indoor air quality concerns can accumulate to levels that may pose risks to human health. Assessors should inquire about tests conducted at the subject property, and should review area documentation for the presence of radon in and around the subject property.

Facility Documentation

Clues to past and present hazardous material and waste management practices can also be ascertained from facility records and their review is an important aspect of the site visit. Facility records provide an excellent document trail of the environmental history and current management practices at the site. Records on hazardous waste accumulation, storage, treatment, or disposal (e.g., satellite waste accumulation records and manifests) should be reviewed. Other environmental management plans and reports may also provide information on the use and management of hazardous materials and wastes. These include, but are not limited to, Spill Prevention, Control, and Countermeasures (SPCC) plans; Pollution Prevention (P2) plans; and Emergency Planning and Community Right-to-Know Act (EPCRA) plans and reports. Quantities of hazardous materials used and stored, as well as reportable hazardous substance releases, must be accurately identified for compliance with federal and state requirements (e.g., 40 CFR Part

373). Refer to Appendix H for more information on the regulatory requirements and notifications for disposal or lease termination transactions. Finally, assessors should review any previous environmental inspection or audit reports, management plans, National Environmental Policy Act (NEPA) documentation, and any other relevant information to gain a comprehensive understanding of the environmental history of the site.

RECORDS SEARCH AND REVIEW

A significant element of a Phase I Liability Assessment is the record search and document analysis. EDDA assessors must analyze documents obtained during the site visit, as well as records from federal, state and local regulatory entities. In conjunction with the site visit, an assessor should visit local regulatory and county offices to obtain and review additional records that may shed light on the environmental history of the property, and, to the extent practicable, on contiguous and adjacent properties. For example, chain-of-title documents, aerial photographs, incident reports, and other key documents that might provide information on past site uses and hazardous materials management and disposal activities. Many records can also be obtained without traveling to the site. The following table summarizes target records and their potential sources.

**Table 4-1
Target Information/Records and Potential Sources**

TARGET INFORMATION/RECORDS	POTENTIAL SOURCES
Site Ownership History	Title search - local courthouse Agency real estate office Agency historian National Archives and Records Administration (NARA), related regional archives, and state archives
Site Use History	Current owner and operator Facility records Previous owner and operator Sanborne Fire Insurance Maps Agency historian Agency facility, architecture, or engineering office Agency reports (budget, A-106, FedPlan, annual, ...) NARA, related regional archives, and state archives Title search
Aerial Photographs	Facility records Current owner and operator Previous owner and operator Agency historian Agency regional or area office Agency facility, architecture, or engineering office Agency reports (budget, A-106, FedPlan, annual reports) Local collections, universities or museums Local highway or transportation department United States Geological Survey (USGS)

**Table 4-1
Target Information/Records and Potential Sources (Continued)**

TARGET INFORMATION/RECORDS	POTENTIAL SOURCES
Environmental Permits	Current owner and operator Facility records Agency regional or area office Previous owner and operator State and local regulatory authorities
Environmental Surveys	Current owner and operator Facility records Agency regional or area office Previous owner and operator
Hazardous Materials and Waste	Facility records Material safety data sheets Facility environmental compliance audit reports Facility hazardous materials management plans EPCRA reports State environmental agency Environment, health, and safety manager Facility engineering manager Facility personnel or service contractors Agency regional or area office Agency facility, architecture, or engineering office Agency reports Product manufacturers
Site Contamination per National Priorities List, Federal Facilities Docket, or State Contaminated Site List	LandView (mapped environmental and census data tool) IDEA database (1-888-EPA-IDEA or http://es.inel.gov/oeca/idea) CERCLA Information System (CERCLIS) Hotline (202-260-0056) RCRA/Superfund industry assistance hotline (1-800-424-9346) EPA Regional Offices (web site: http://www.epa.gov/) State environmental agency
Fuel Leaks	State environmental agency Local fire and health department Facility records
Above and Underground Storage Tanks	State environmental agency Local fire department Facility records Facility environmental compliance audit reports Facility SPCC plans Facility hazardous materials management plans EPCRA reports Material safety data sheets
PCB equipment, use, and incidents	Facility PCB log or records Current owner and operator Facility personnel or service contractors Local fire department Agency regional or area office Agency facility, architecture, or engineering office Equipment manufacturer Utility company (large transformers or utility-owned)

**Table 4-1
Target Information/Records and Potential Sources (Continued)**

TARGET INFORMATION/RECORDS	POTENTIAL SOURCES
Wetlands and Environmentally Sensitive Areas	Facility studies Town/county planning and zoning office County soil survey reports Local soil conservation district National/ State Wetland Inventory Maps (available from EPA Regional Offices) United States Army Corps of Engineers Wetlands Protection Hotline (1-800-832-7828)
Asbestos	Building age (pre-1987) Asbestos survey reports Facility records Facility as-built drawings and specifications Current owner and operator or manager Environment, health, and safety manager Facility engineering manager Facility personnel or service contractors Agency regional or area office Agency facility, architecture, or engineering office Product manufacturers
Lead-Paint and other Lead or Heavy-Metal Sources	Building age Lead survey reports Construction blueprints and specifications Facility Maintenance Records or Procedures Facility personnel or service operators Water utility service
Indoor Air Quality, Radon and Potentially Hazardous Dusts	Facility records and survey reports Environment, health, and safety manager Agency regional or area office County/ local health department State Occupational Safety and Health Administration
Hydrogeology and geology	Facility soil studies and groundwater test results USGS United States Department of Agriculture (USDA) State water resources control County planning office Local soil conservation district Local county planning office Aerial photographs

Adjacent Property

The purpose of the adjacent property records search and review is to identify the issues that may have adversely affected the environmental condition of the subject property. Generally, the adjacent property review effort will be limited and not as extensive as the subject property review. The search radius may be left to the discretion of the environmental professional (i.e., EDDA Phase I Liability Assessment review team). Factors that may be considered when evaluating adjacent properties and determining the search radius include:

- Density of the setting where the facility is located (e.g., rural, urban, or suburban)
- Distance that hazardous substances or petroleum products are likely to migrate based on local geologic or hydrogeologic conditions
- Adjacent NPL or contaminated sites.

Site History - Ownership and Use

Prior site ownership and use is typically documented in local property ownership and tax records. A chain-of-title review should be conducted to list continuous ownership and use of the property to the present time. A title search, Sanborne Fire Insurance (SFI) map and special hazard area map review will reveal the past owners, uses of the property, and properties that are subject to flood hazards. The general site history and property owners for the last 50 years should be identified to determine the past property uses and activities.

Title Search

Chain-of-title records are maintained at the local courthouse and may be researched with the assistance of agency real-estate specialists or court clerks. The purpose of the title search and review is to fully identify past owners and research any information that might affect the current environmental condition of the subject property.

Sanborne Fire Insurance Maps

SFI maps identify past property owners and property uses. Analysis of this information may reveal the types of activities and associated materials that could have been managed at the facility.

Aerial Photographs

Aerial photographs are used to reveal past site uses that raise environmental concerns, or may help in documenting the timetable for site improvements and associated activities. Aerial photographs of the subject and surrounding properties should be reviewed for the last 50 years to verify site activities and the activities at neighboring sites. An individual qualified and trained to interpret aerial photographs (such as personnel meeting the criteria provided in Appendix K) should perform this review.

Environmental Surveys and Audit Reports

All available environmental survey and audit reports (from current or past owners and operators) should be reviewed to determine if contaminants were or are currently present at the site or adjacent properties. This includes surveys and reports for UST, lead-based paint, air quality, radiological, mercury, PCB, and asbestos contaminants. In addition, beneficial information may be obtained from reviewing reports on multimedia environmental compliance status, management practices, NEPA, and P2.

Utility Transformer Records - PCBs

Under 40 CFR Part 761.180, facilities that use or store a total capacity in excess of 45 kilograms of PCBs, one or more PCB transformers, or 50 or more PCB large capacitors are required to maintain an annual PCB log on-site. Records may also be sought from the local utility companies. Note that occasionally more than one utility company will have jurisdiction over a given property.

Special Hazard Area Maps

Special hazard areas denote properties that lie within the floodplains and have flood, mudslide or flood-related erosion hazards. The maps identify properties in terms of 10-, 50-, 100-, and 500-year flood discharges. Such designations may limit the type of activity permitted on a property. In addition, understanding the property's location with respect to floodplain areas will assist in interpreting the potential for on- and off-site contamination impacts.

Nuclear Regulatory Commission (NRC)

For properties where there have been permitted radiological activities (e.g., laboratories, medical facilities, and some commercial research and development applications), the NRC or facility should have information on the facility's radioactive materials license. The NRC license, license conditions, and notices of violation should be obtained and reviewed to determine the nature and type of materials handled, stored, and disposed. The operating procedures applicable to licensed activities should also be reviewed to determine the potential areas of contamination; equipment and laboratory surface exposure; potential air emissions and Heating, Ventilation, and Air Condition (HVAC) duct contamination; and potential contaminated environmental media (e.g., groundwater, surface water, soil). NRC licenses require monitoring and surveys to be maintained by the facility. These surveys should be reviewed to determine the potential levels and locations of radioactive contamination. A list of the four NRC Regional Offices and their phone numbers are provided in Appendix P.

REGULATORY REVIEW

The regulatory review is another essential step in the investigative due diligence process. This activity involves reviewing the permit and compliance history for the subject property, as well as neighboring sites that may have an impact on the property (typically a one-mile radius). Otherwise unknown environmental concerns can be revealed, such as a history of fines for spills on the adjacent property. Of course, the regulatory search can only reveal the known compliance history; unreported spills and other activities that could contribute to contamination are not part of an official regulatory record.

Records and files should be obtained for applicable environmental enforcement agencies such as the EPA, state environmental protection department, water control board, local fire department, and the health inspector. Each entity can be contacted independently for a search of the necessary records, or commercial vendors can be used to provide regulatory database search services. Examples of federal, state and local regulatory data sources are provided in the following sections.

Federal Lists

Federal regulatory data sources include the following:

- *RCRIS*—The RCRA Information System is an EPA list of permitted hazardous waste facilities and generators.
- *CERCLIS*—The CERCLA Information System is an EPA database with information on “Superfund” sites on the NPL. CERCLIS is a component of idea.
- *SETS*—The Site Enforcement Tracking System is an EPA database listing responsible parties at NPL sites.
- *ERNS*—The Emergency Response Notification System for spill and response activity information, which is maintained by the U.S. Coast Guard.
- *IDEA*—The Integrated Data for Enforcement Analysis database contains data from 15 EPA and EPA-related databases, including RCRIS, CERCLIS, SETS, and ERNS. Information on IDEA can be obtained from the hotline (1-888-EPA- IDEA) or the internet (<http://es.inel.gov/oeca/idea>).

State Agency Lists

The appropriate state environmental agencies should be contacted for information on fuel or other regulated releases that may have occurred on the subject or adjacent property. Many states maintain lists similar to CERCLIS and RCRIS on environmental site contamination, response actions, and small fuel releases. State enforcement inspection reports should be reviewed for information on potential sources of contamination. In addition, state environmental permits should be obtained and reviewed for specific closure requirements. Other permit areas to be considered include UST, AST, air quality, hazardous waste, industrial and domestic wastewaters, radioactive materials, and hazardous materials.

Local Authorities

Regulatory records from local authorities should not be overlooked. Local fire and health departments typically conduct enforcement inspections, which could reveal environmental conditions relative to local codes and standards. Fire departments may have information regarding facility hazardous substance use and USTs, as well as past releases or environmental incidents. Health departments may have information on radon levels in the area of the site, as well as site activities that may impact human health and the environment.

All local environmental permits and inspection reports should also be obtained and reviewed, including those for POTW, sanitary sewer, and stormwater discharge. Permits and inspection reports will assist in determining the potential composition of the hazardous materials used and whether there is cause for concern based on the permit parameters and report findings.

Town and County Planning or Zoning Office

Typically the planning or zoning office is located with the main city or county offices. The applicable entity should be contacted to determine whether the property is zoned for a particular use (e.g., industrial, agricultural, wetland, or sanctuary), and whether the property has any historical or recreational value. The county planning office or the local soil conservation district may also be able to provide a copy of county soil survey reports for the area. This information will be helpful in accurately characterizing the property's features (including wetlands). It will also be useful in determining the limitations of future land use or property transfer. Information obtained regarding the existence and classification of wetlands should be verified with other hotline or national wetlands inventory map data.

GEOLOGY AND HYDROGEOLOGY REVIEW

The geology and hydrogeology of a property are investigated to provide an understanding of how potential contamination could affect the soil and groundwater of subject or adjacent properties. Both the land and water features of the site will have an impact on the speed and ability for potential contaminants to migrate. Topics to consider in this review are:

- Direction of groundwater flow
- Depth to groundwater
- Floodplain
- Water quality
- Soil characteristics
- Site topography.

The property owner and operator should be contacted for a copy of any previous soil or groundwater studies, which should be reviewed for general geologic and hydrogeologic information as well as data on suspected contamination. The following sections provide a list of other available information sources.

United States Geological Survey

The USGS maintains information on the soil characteristics and hydrogeology for the United States. Reports for the applicable area should be analyzed to determine the groundwater depth and flow, and surface water flow. The phone number for USGS headquarters is 703-648-6045; other USGS offices and phone numbers are provided in Appendix Q.

State Water Resources Control

State water resources control boards conduct well surveys of groundwater and drinking water. Information on the aquifer type, depth to groundwater, classification, and use is often found in regional reports. Data from these surveys should also be reviewed to characterize and identify existing or formerly operated wells on the site.

United States Department of Agriculture and Local Authorities

The USDA and regional Soil Conservation Service (SCS) districts generate soil survey reports on regional geology and soil types. The county planning office or the local soil conservation district may also be able to provide a copy of county soil survey reports for the area. This information is helpful in accurately characterizing the property's features (including wetlands). It will also be useful in determining the limitations of future land use or property transfer. Information obtained regarding the existence and classification of wetlands should be verified with other hotline or national wetlands inventory map data.

PHASE I REPORT

The EDDA Phase I Liability Assessment report is prepared after all the information gathering activities have been completed. The intent of the report is to document the results of the liability assessment, including the findings, conclusions and recommendations. By its nature, it also documents that due diligence was exercised.

Report Development

The Phase I report must document all aspects of the site visit, as well as the record, regulatory, geologic, and hydrogeologic reviews. The report must also include statements of conclusion on the possibility and nature of environmental contamination associated with the site and the potential for liability. Further, the report should recommend appropriate next steps based on intended use of the property and the liability conclusion stated. Any limitations should be directly stated to ensure that the reader and decision maker are aware of what information was not available for assessment of potential liability. Back-up documentation should also be provided with the report, including but not limited to inspection notes, property-related reports, completed questionnaires, correspondence with state agencies, and site maps. A suggested outline of the report is provided in Appendix R.

Phase I Report Review

It is essential for the Phase I report to be reviewed for correctness and completeness. In this role, the technical reviewer ensures that the report is complete and properly worded; but, more importantly, he or she evaluates the assessor's methodology to ensure that the report reflects that due diligence and all appropriate inquiry were applied during the investigation. The reviewer must also ensure that statements of conclusion regarding suspected contamination and liability are correctly derived from, and supported by, the data collected. To do this, the technical reviewer must be qualified, with the relevant technical environmental background, training, and experience (see Appendix K for a list of qualifications). Agency legal council may want to review the draft reports to ensure that the content is consistent with agency policies.

Use of the Phase I Report

Following the approval and acceptance of the Phase I report by the technical reviewer, it is forwarded to the executive decision maker. This individual or group of individuals evaluates the

findings, conclusions, and recommendations contained in the report and decides how to proceed with a proposed property transfer. General guidance on the decision making process has been provided in Chapter 3 (refer also to Figures 3-3 and 3-4 for separate decision making issues for acquisition and disposal situations).

For all transactions, if the Phase I report indicates no evidence of contamination or liability, then the EDDA process is complete; environmental due diligence has been met and results may be used to satisfy any property disposal obligations under CERCLA Section 120(h)(4).

If the agency is considering an acquisition or lease initiation and the findings of the Phase I indicate there is the potential for contamination or liability, then decision makers must weigh other property options against the importance or strategic value of the subject property (see Figure 3-3). When the agency has continuing interest in the property, a Phase II must be conducted to confirm contamination and liability. If the property transaction is a disposal or lease termination and the findings indicate potential contamination or liability, then a Phase II must also be conducted.

CHAPTER 5 PHASE II—CONFIRMATION SAMPLING

DESCRIPTION

The purpose of the Phase II Environmental Due Diligence Audit (EDDA) process is to confirm the presence or absence of contamination and liability identified in the Phase I Liability Assessment. The Phase II EDDA is accomplished through confirmation-sampling where the suspected areas of concern noted in the Phase I Liability Assessment are physically sampled to determine if actual contamination exists. Phase II procedures are designed specifically to confirm the presence or absence of contamination. This is achieved through targeted field sampling of suspected areas and appropriate laboratory analysis to quantify suspected contaminant compounds. These activities may range from intrusive sampling, such as advancing groundwater monitoring wells, to simple surface soil samples readily taken by hand augers. In some cases, the sampling may consist only of taking asbestos sampling or setting radon canisters. The range of required sampling will influence the scope of the Phase II activities and associated resources to complete the investigation. If Phase II activities show that contamination exists, then Phase III activities may be undertaken to fully characterize site contaminants. However, if Phase II shows that contamination does not exist, the EDDA process is concluded.

Following an indication of possible contamination from a Phase I Liability Assessment, the motivation for proceeding to Phase II differs by property transaction type. For agency property targeted for disposal, any suspected contamination must be further investigated and, as necessary, remediated in accordance with applicable regulations (refer to Figure 3-4). For acquisitions, the agency interest in a given property must outweigh the expense of further investigation and other property alternatives (refer to Figure 3-3). For other transactions, the decision to proceed with confirmation sampling will depend on numerous factors, including:

- The type of transaction
- Level and severity of suspected contamination
- Price and availability of alternate sites
- Cooperation of the subject-property owner for the investigation to continue.

These issues are discussed in Chapter 3 of this guidance and should be fully considered as part of the agency's decision-making process.

Due to the technical requirements and potential liability issues raised by Phase II Confirmation Sampling activities, the use of certified contractors is strongly recommended. The agency is responsible for selecting a *qualified* contractor with a licensed Professional Engineer (PE) or a licensed Professional Geologist/Hydrologist (PG/PH) on staff to supervise and approve the work. Sample specifications for Phase II and Phase III EDDA contractors are provided in Appendix S. When a contractor is engaged to design and perform the Phase II Confirmation Sampling field activities, the agency role in the field will be to provide oversight and logistical support (e.g., site access). Additionally, the agency will oversee the progress of the investigation to ensure that it is completed within budget and on time. Depending on the scope and planned activities, Phase II Confirmation Sampling can address one or more issues and require different levels of field

activities and analytic procedures. Consequently, this can become a very expensive and time-consuming process unless it is properly planned, managed, and controlled. Monitoring and oversight of these activities is paramount and presents the agency with an opportunity to ensure that the Phase II Confirmation Sampling is fully executed.

Agency personnel are responsible for reviewing and accepting the contractor's plans and reports. Accordingly, the personnel involved with the review process should be familiar with the sampling strategy and understand the implications of the sampling results and recommendations of the report. The Phase II EDDA is a critical element in developing specific knowledge about the presence or absence of site contaminants and, if confirmed, generating an initial understanding of potential future site implications. The duration of the Phase II Confirmation Sampling process depends on the specific activities planned and the scope of the confirmation sampling program. Phase II Confirmation Sampling activities consist of the following four steps; a description of each of these activities is provided in the subsequent paragraphs.

- Reviewing and evaluating the findings in the Phase I report
- Developing and implementing a confirmation Sampling and Analysis Plan (SAP)
- Identifying site risk based on the results of the confirmation sampling
- Developing the Phase II report.

REVIEW AND EVALUATION OF PHASE I REPORT

Prior to initiating any Phase II Confirmation Sampling activities, the Phase I report should be thoroughly reviewed to gain a complete understanding of what is currently known about the site and the suspected contamination. The Phase I report provides valuable information on the environmental condition of the property. Specifically, the conclusions and recommendations section documents the potential areas of concern and provides recommendations for performing Phase II Confirmation Sampling activities. These areas can include the site structures, site grounds, or information on suspected sources on neighboring properties. Several types of surfaces and environmental media may need to be sampled. Additionally, the Phase I report will contain valuable background information that will be pertinent to designing and conducting Phase II Confirmation Sampling. This information should be reviewed to ensure that the Phase II Confirmation Sampling contractor has a full understanding of what is known about the site and the specific areas of suspected contamination. Relevant background information may include:

- Recommended locations of investigation and issues supporting the suspected types of contamination and sources
- Potential sources of contamination based on prior site use
- Past site operations and practices
- Physical characteristics of the site, such as soil types, depths to groundwater, geologic and hydrogeologic features
- Noted background (or ambient) levels of contaminants of potential concern
- Previous hydrologic, testing or assessment report, identified and reviewed in the Phase I that support the recommendations or provide additional site detail and characteristics.

It is important for the Phase II Confirmation Sampling contractor and applicable federal agency staff to become familiar with the contents of the Phase I report. This information forms the basic building blocks for designing, planning, and performing Phase II Confirmation Sampling activities. These activities must address all of the issues raised in the Phase I report. Therefore, the success of the Phase II Confirmation Sampling activities, in part, rests with having a thorough knowledge of the site conditions and areas of concern noted in the Phase I report. This information is used to develop the background and understanding as well as to specifically set forth the objectives of a site SAP.

DEVELOPMENT AND IMPLEMENTATION OF THE SAP

The purpose of the SAP is to establish an agreed-upon sampling strategy that will fully address each potential liability area through confirmation sampling and analysis. The SAP contains two distinct elements. The first is the Field Sampling Plan (FSP) that specifically discusses the sampling activities, scope, analysis, health and safety activities and the rationale for each. The second is the Quality Assurance Project Plan (QAPP) that identifies the Quality Assurance/Quality Control (QA/QC) procedures used in the field sample collections and analysis to ensure that accuracy and precision of the sampling results. The use of an independent contractor is always encouraged to demonstrate that an objective and defensible Phase II Confirmation Sampling approach is executed and accurate results are obtained. The SAP must be developed by the Phase II contractor and approved by the agency before Phase II Confirmation Sampling commences.

Element 1, the FSP, should consist of field sampling and analysis procedures, a safety and health plan, and a project management plan. The FSP must describe the following activities:

- Sampling objectives
- Site background
- Site characteristics
- Potential contaminants of concern
- Type of media being sampled
- Sample type and the location, number, and frequency of samples being taken
- Sample collection, handling, designation, numbering, and preservation techniques
- Field quality assurance and quality control procedures.

A description of each of these activities is provided in Appendix T. A safety and health plan is also developed to ensure that adequate precautions and planning for onsite activities. This portion of the plan must adhere to the Occupational Safety and Health Administration (OSHA) regulations in 29 CFR Parts 1910 (General Industry Standards) and 1926 (Construction Safety).

The safety and health plan delineates the roles and responsibilities of site personnel, site-specific hazards, safety precautions, and regional medical response facilities. Contact the facility's environment, health, and safety manager for additional information. The overall objective of the plan is to ensure the safety and health of workers performing confirmation-sampling activities. The agency must require contractors to have their own OSHA compliant safety program to comply with OSHA multi-employer work-site regulations.

Element 2, the QAPP, establishes the quality management system for all environmental programs performed by or for the agency. Specific policies and program requirements involving QA/QC activities will depend on internal agency policies. A program should be in place to define in detail how specific QA/QC activities will be implemented during a specific project. The four general quality assurance elements are:

- Project management
- Measurement and data acquisition, including sampling analysis, data handling, and quality control
- Assessment and oversight
- Data validation and usability.

These elements correspond to planning, implementation, and assessment. QA/QC applied to a project will be commensurate with the following:

- The purpose driving environmental data collection (e.g., enforcement, research and development)
- The type of work to be done (e.g., site characterization, baseline of site conditions)
- The intended use of the results.

The best means of achieving the appropriate content and level of detail in the quality management program may be through having the agency's QA/QC requirements reviewed and confirmed by the agency's project manager and documented through a QAPP.

The QAPP is usually submitted with the FSP; it describes the steps and procedures that will be used to ensure quality information for field sampling and laboratory analysis. The plan usually demonstrates that:

- The project technical and quality objectives are identified, and there is concurrence
- The intended measurements or data acquisition methods are appropriate for achieving project objectives
- Assessment procedures are sufficient for confirming that the type and quality of data needed are obtained
- Any limitations on the use of the data can be identified and documented.

Both the field (e.g. FSP) and quality (e.g. QAPP) components of the SAP are used as a management tool to monitor the field and analytical laboratory performance of the Phase II Confirmation Sampling activities. Typically, a project manager will develop the work-schedule, milestones, and associated costs based on the requirements identified in these documents. Site sampling may begin once the SAP has been developed and accepted.

The Phase II Confirmation Sampling contractor will be responsible for completely executing the field sampling program specified in the SAP and meeting the field, laboratory, and analytic objectives described in the QAPP. Federal agencies will be responsible for providing oversight

during Phase II Confirmation Sampling activities and coordinating with the contractor and the landowner to provide site access as appropriate. Federal managers should not provide field direction to on-site contractors, as this type of activity may compromise the integrity of the approved SAP. Where unexpected field or technical issues arise during the course of the sampling activities, federal oversight managers should work with the contractor to amend and document changes to the SAP and, where necessary, add change orders to the contract.

PHASE II REPORT

The Phase II findings, results, and recommendations must be formally documented in a report. Typically, the report includes:

- A summary of the Phase I findings
- The results of the confirmation sampling and analysis
- Discussion of potential risk to human health and the environment
- Discussion of potential remedial alternatives
- Recommendations for performing follow-on Phase III Site Characterization activities or concluding the EDDA.

Appendix U is a sample outline/table of contents for a Phase II report.

The report should clearly document the findings and conclusions of the Phase II Confirmation Sampling. It is essential that the results of the confirmation sampling and analysis be reviewed against the specifications of the QAPP to ensure that the data are accurate and will support drawing meaningful conclusions. Data should also be specifically evaluated against the QA/QC parameters, and the report should show an accounting for all deviations from designated sample quality standards. Additionally, the sample results must be evaluated against established Applicable or Relevant and Appropriate Requirements (ARARs) to compare the contaminants against established permissible levels. ARARs include federal, state and local standards that apply to the contamination compounds and issues at the site. Additionally, contamination areas may be compared against appropriate background samples or information to help determine the source and impacts of the contamination areas.

When contamination is confirmed, the report should document the locations and types of contamination found and provide the specific contamination levels. Information on the steps and types of analysis necessary to further investigate the contamination area is often appropriate at this point and provided in the Phase II report. In the event that the confirmation sampling determines that no contamination is present, the report should fully document the sampling activities, analytic results, and justification for determining the contamination is absent or below levels of concern.

Preliminary identification of remedial alternatives may be included in the Phase II report based on the types and location of noted contamination. Any estimates will necessarily be precursory, and intended only to assist in decision making based on best judgment and potential extent of

contamination confirmed in the Phase II. The full range of contamination will not be known until a comprehensive site investigation (Phase III Site Characterization EDDA) has been completed. The preliminary remedial alternatives are used to make property management decisions, in situations such as acquisition, or to form a basis for refinement if site characterization is required, in situations such as disposal. Examples of some of the more common remediation technologies are listed in Appendix V.

In addition to the fundamental components of a Phase II report, any deviations from the SAP, the rationale for deviations, and a strong justification and supporting information for the conclusions and recommendations are essential. The Phase II report must be reviewed and approved for content and accuracy by oversight personnel. The Phase II Confirmation Sampling report is the decision-making tool to assist agency managers in understanding the actual presence of site contaminants and need to conduct further study through the Phase III. Agency personnel responsible for property transfer, such as the program manager, property transfer manager, safety, health and environmental manager, facility engineering, and legal and real estate representatives, should review the report. Their review must:

- Evaluate the accuracy of the conclusions and recommendations relative to the data gathered
- Determine whether the investigation was actually carried out in accordance with the SAP
- Ensure consistency between field samples and the QA/QC samples
- Evaluate the field data against the appropriate and relevant criteria
- Approve or concur with the conclusions and recommendations in the Phase II report.

CHAPTER 6
PHASE III—SITE CHARACTERIZATION

DESCRIPTION

The Phase III Site Characterization process provides information to agency decision makers regarding the extent and magnitude of contamination liability. This phase is initiated when a subject property is of continuing interest to the agency, and the Phase II Environmental Due Diligence Audit (EDDA) results confirmed contamination at concentration levels equal to or above regulatory limits or risk levels. During Phase III, site contamination is fully characterized and cleanup alternatives are developed. This is the final step in the EDDA process; thus, any subsequent remediation activities follow solely Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or other statutory and regulatory processes.

Continuing a property investigation through Phase III Site Characterization is extremely rare in proposed acquisition or lease initiation transactions. Such actions would be motivated only by steadfast agency interest, probable funding reimbursement, and estimated cost of cleanup to overall property value. Conversely, when the agency owns the property or is otherwise responsible for the contamination, prior to disposal or lease termination the agency will inevitably be required to conduct a Phase III Site Characterization or a regulatory equivalent. (Refer to Figures 3-3 and 3-4 for Phase III decision making for acquisition and disposal scenarios.)

Much like the Phase II Confirmation Sampling process, Phase III Site Characterization consists of numerous activities. The Phase III process builds on previously generated information to develop a comprehensive assessment of all site contamination areas. Appropriate cleanup standards must also be identified, based on the site-specific human health risk, ecological risk, or regulatory requirements. Information on the nature (i.e., type of contaminants found) and the extent (i.e., magnitude across media) of site contamination are also used in the Phase III process to develop and recommend cleanup technology alternatives.

Phase III activities include the following; discussion of each of these activities is provided in subsequent paragraphs.

- Review and evaluation of the Phase II report
- Development and implementation of a Sampling and Analysis Plan (SAP) to fully characterize contamination at the site
- Assessment of risk and future land-use options
- Evaluation and selection of remedial alternatives
- Development of the Phase III report.

Phase III Site Characterization activities are conducted by independent contractors experienced in site characterization and remediation. The selection of Phase III contractors is based on the

contractors' qualifications, experience, and ability to conform to the contractor procurement specifications (see Appendix S for a list of qualifications).

REVIEW AND EVALUATION

Phase II report information provides the necessary background and building blocks for designing, planning, and performing Phase III Site Characterization activities. As such, it is important for the agency technical reviewers and the Phase III contractors to review and evaluate the contents of the Phase II Confirmation Sampling report.

DEVELOPMENT AND IMPLEMENTATION OF A FULL CHARACTERIZATION SAP

The Phase III full characterization SAP is similar to the SAP process described for Phase II. Both contain a project management plan, a safety and health plan, sampling and analysis procedures, and Quality Assurance and Quality Control (QA/QC) requirements for the Quality Assurance Project Plan (QAPP). (For the full discussion of these SAP elements, refer to Chapter 5 of this document.)

The major difference between Phase II Confirmation Sampling and the Phase III SAP is the objective. The objective of the Phase II SAP is to confirm the presence of contamination. The objective of the Phase III SAP is to determine the extent and severity of the contamination, and to provide the technical basis for establishing a site cleanup strategy. Due to the expanded objective of the Phase III SAP, the scope and number of samples collected will likely increase during this phase of the EDDA process, and result in higher costs. Additionally, the Phase III SAP will typically call for higher resolution sampling and analytic procedures to evaluate performance limits of potential cleanup technologies. Extreme care and professional judgment must be exercised to ensure excessive sampling is not performed and excessive costs are not incurred. As in Phase II, the QAPP elements in the SAP need to be implemented in proportion to the project.

Contractor-developed SAPs are submitted to the agency for review and approval. Once approved, the contractor initiates site activities, and samples are collected and sent to a laboratory for analysis. Rigorous and documented sampling procedures (refer to Appendix T for a description of the procedures) should be followed to ensure the results of the sampling are accurate and representative of site conditions.

When the analytical results from the sampling are obtained, they are compiled and analyzed. This information is used to determine the nature and extent of site contamination, and to assess the risk posed to human health and the environment from the contamination.

RISK ASSESSMENT AND FUTURE LAND-USE OPTIONS

The analytical results provide the data needed to assess the risk posed to potential human and ecological receptors. These data, in turn, can be used to develop appropriate risk-based cleanup levels in the absence of specific media criteria. Acceptable risk levels are typically in the 10^{-4} to

10⁻⁶ (one-in-100,000 to one-in-a-million) range for potentially impacted populations. The risk assessment depends on source characterization, exposure assessment, dose-response evaluation, and risk characterization. A description of each of these components is provided in the following list.

- *Source characterization*—Identifies the contaminants of concern and their rates of release.
- *Exposure assessment*—Identifies the potentially exposed populations, pathways of exposure, and the extent of exposure.
- *Dose-response evaluation*—Assesses the type of effects that could occur and the magnitude of the effects.
- *Risk characterization*—Determines the amount of exposure involved, its associated risks, and the relative significance of the risk.

Each of these components must be evaluated to determine the overall risk posed to human and ecological receptors.

Often the CERCLA (or Superfund) process is the applicable regulation for federal site contamination. As such, when assessing risk during Phase III activities it is appropriate to reference the following Environmental Protection Agency (EPA) guidance documents (which can be obtained by calling the Superfund Hotline at 1-800-424-9346 or by contacting the US National Technical Information Service (NTIS)).

- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Parts A, B and C) provides guidance for developing human health risk information at Superfund sites.
- Risk Assessment Guidance for Superfund, Volume II: Environmental Evaluation Manual provides guidance for developing environmental assessments at Superfund sites.

In addition, EPA recently published the *Revised Guidelines for Ecological Risk Assessment* (NTIS Publication PB98-117849), which provides a framework for evaluating past and future impacts to ecological resources. Effective April 30, 1998, this guidance may be useful in determining ecological-based cleanup goals or assessing the potential impact of selected remedial actions at a site.

Depending on the types of contaminants involved and the information available, risk assessments can be qualitative or quantitative. Although quantitative risk assessments are normally performed, qualitative risk assessments may be required if (1) regulators consider it appropriate, (2) cost and timeliness are an issue, (3) toxicity data on chemicals are not available, or (4) some other phenomena are not quantifiable. When conducting qualitative risk assessments, risk-management decisions must be based on prudence and best professional judgment.

Future land-use options are also considered when determining risk. There are four commonly recognized future land-use options: industrial-commercial, agricultural, recreational, and residential. When considering the impacts of future land-use on the overall risk of the property, the industrial-commercial option is usually the least conservative, whereas the residential option is

the most conservative. Future land-use options must be evaluated in conjunction with risk to determine the appropriate level of risk reduction and cost effectiveness during the cleanup process. Keep in mind that EPA, state and local environmental regulatory agencies often select the most restrictive land-use option—the residential scenario—in setting and approving risk-based cleanup goals.

REMEDIAL ALTERNATIVES, EVALUATION AND SELECTION

Remedial alternatives are screened against evaluation criteria to reduce the number of remedial alternatives available for selection and implementation. (See Appendix V for a sample listing of remedial technologies.) Only the remedial alternatives most representative of the evaluation criteria should be placed on the short-list of alternatives. In general, the evaluation criteria consist of the following:

- Overall protection of human health and the environment
- Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Ability to implement
- Cost
- State acceptance
- Community acceptance.

Developing and assessing a (simple to complex) range of technically appropriate alternatives is important to evaluate their relative feasibility. The short-list of remedial alternatives may include the following: *no action* (i.e., natural attenuation), *institutional controls* (such as deed restrictions or perpetual federal ownership), *technological solutions* (involving remedial, demolition, or decontamination activities), or some *combination* of these.

Using the preceding criteria, the contractor-proposed short-list of applicable alternatives is evaluated by the agency. The ultimate solution for the site, however, must be selected in coordination with regulators and with consideration to public concerns. (See Chapter 3 for additional discussion on the regulation of contaminated sites.)

PHASE III REPORT

The Phase III report documents all pertinent site information in one place for agency decision makers, including: the nature and extent of contamination, activities performed, risk assessment results, cleanup goals, remedial alternatives, and recommendations. Specifically, the Phase III Site Characterization report should be a comprehensive statement delineating:

- Prior site activities
- Efforts leading up to site characterization.
- Sampling rationale and activities

- Final sampling results, clearly displayed with a complete vertical and horizontal distribution of site contaminants and concentrations
- A comparison of these results to site ARARs, background levels, or risk-based action levels
- Appropriate cleanup goals
- Results from the analysis of applicable cleanup alternatives
- Recommended alternatives and their rational, technical implementation issues, and costs

The Phase III report will constitute the guideline and technical basis for any further (and possibly costly) remediation activity planned at the site, and as such, must be closely reviewed and understood by agency technical staff and decision makers.

Appendix W contains a suggested outline of the Phase III report.