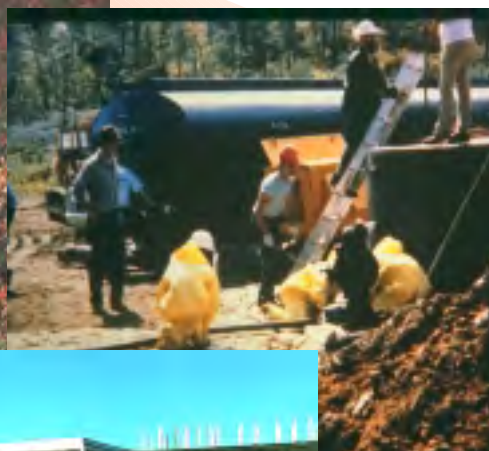
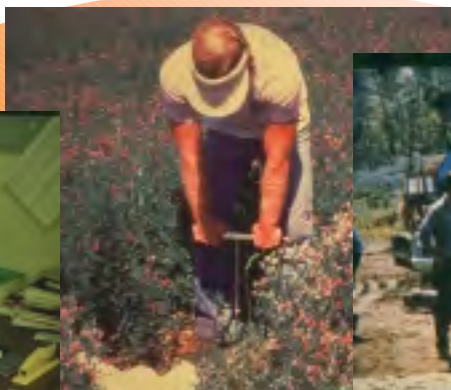
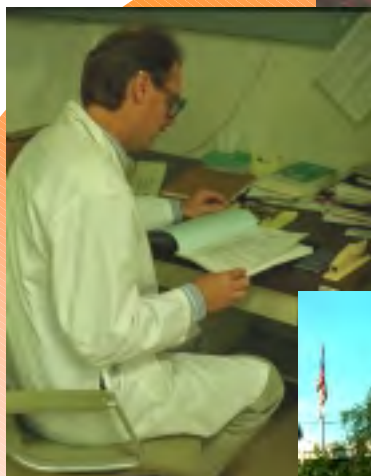




Guidelines for Acquiring and Transferring EPA Real Property and Complying with the Community Environmental Response Facilitation Act (CERFA)



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1. INTRODUCTION

PURPOSE

The purpose of this guidance document is three-fold. First, it is to identify and familiarize U.S. Environmental Protection Agency (EPA) personnel and staff with real property transfer environmental requirements. Second, it is to eliminate or reduce EPA's environmental risk and liabilities associated with real property transfer in the future. Third, it is to familiarize EPA personnel and staff with EPA's environmental due diligence process (EDDP). A list of acronyms and abbreviations used in this document is provided in Appendix A.

APPLICABILITY

The general guidelines set out in this document should be applied when acquiring, transferring, or terminating EPA's interests in any real property. When terminating EPA's interest in real property, the results of the EDDP shall be used to determine whether an environmental condition notification to purchasers or recipients is required under federal, state, and local law. When transferring property to third parties, the results of this process should be used to establish a baseline environmental record of the property as a defense against future claims. This document describes EPA's EDDP for closure of a laboratory, consolidation of laboratories, or termination of EPA's interest in real property. The general process and principles may be applied to the acquisition as well as the transfer (e.g., outlease, out-grant) of real property.

BACKGROUND

Real property, as defined in Title 41 of the Code of Federal Regulations (CFR) §101-47.103-12, is:

“any interest in land, together with the improvements, structures, and fixtures located thereon (including prefabricated movable structures, such as Butler-type storage warehouses and quonset huts, and housetrailers with or without undercarriages), and appurtenances thereto, under the control of any Federal agency, except:

- C The public domain;*
- C Lands reserved or dedicated for national forest or national park purposes;*
- C Minerals in lands or portions of lands withdrawn or reserved from the public domain which the Secretary of the Interior determines are*

suitable for disposition under the public law mining and mineral leasing laws;

- C Lands withdrawn or reserved from the public domain but not including lands or portions of lands so withdrawn or reserved which the Secretary of the Interior, with concurrence of the of Administrator of General Services, determines are not suitable for return to the public domain for disposition under the general public land laws because such lands are substantially changed in character by improvements or otherwise; and*
- C Crops when designated by such agency for disposition by severance and removal from the land.”*

Real property is also defined as:

“improvements of any kind, structures, and fixtures under the control of any Federal agency when designated by such agency for disposition without the underlying land (including such as may be located on the public domain, or lands reserved or dedicated for national forest or national park purposes, or on lands that are not owned by the United States) excluding, however, prefabricated movable structures, such as Butler-type storage warehouses and quonset huts, and housetrailers (with or without undercarriages).”

Additionally, real property is defined as “standing timber and embedded gravel, sand, or stone under the control of any Federal agency whether designated by such agency for disposition with the land or by severance and removal from the land, excluding timber felled, and gravel, sand, or stone excavated by or for the Government prior to disposition.”

Within the federal government, real property transactions occur between multiple federal agencies, a federal agency and a state or local municipality, or a federal agency and a private organization. Real property transfer can mean an acquisition, termination or closure, or lease agreement. As a result of the variation in the three types of property transfers and extensive legal and fiscal liabilities, real property transfer is a complex and time-consuming process. To familiarize the appropriate EPA personnel and staff with the EDDP, a list of relevant terms have been compiled and defined in Appendix B.

There are a variety of activities involved in real property transfer, including communications with internal and external organizations, negotiations of sales contracts or lease agreements, evaluations of the environmental condition of the property, management of personal property and surplus equipment, and numerous other activities. The emphasis of this document is on evaluating the environmental condition of real property and taking the appropriate steps to eliminate or minimize EPA’s environmental risk or liability with that real property in the future.

ENVIRONMENTAL REQUIREMENTS

Federal and state environmental regulations and statutes may apply to the real property transfer process depending on the environmental condition of the property, past operations and practices, chemicals and hazardous materials managed on-site, or waste generation and management practices. Because of the diversity of EPA operations, the geographic locations of the Agency's properties, the unique historical activities and operations at the sites and the fact that regulations are constantly being revised and updated, a detailed discussion of all these requirements could not be included in this guidance document. Refer to Appendix C for a comprehensive list and description of federal environmental regulations that are relevant to the real property transfer process. The regulations described in Appendix C and any updates should be reviewed by the appropriate EPA personnel and staff before participating in the EDDP. Additionally, EPA personnel and staff must be cognizant of the applicable state and local environmental regulations to ensure compliance with them.

Two federal statutes are of particular importance because they directly relate to real property transfer:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Community Environmental Response Facilitation Act (CERFA) in 1992
- Federal Property and Administrative Services Act of 1949.

Section 120(h) of CERCLA, codified at 40 CFR Part 373, applies when federal facilities, undergoing real property transfer, meet any of the following conditions:

- The facility released CERCLA hazardous substances in quantities greater than or equal to the CERCLA reportable quantity (RQ) under 40 CFR §302.4
- The facility stored a CERCLA hazardous substance also listed as an acute hazardous waste in 40 CFR §261.30 for one year or more in quantities greater than or equal to 1 kilogram
- The facility stored a hazardous substance for one year or more in quantities exceeding either the RQ or 1,000 kg, whichever is greater.

Exhibit 1 provides a decision tree to assist EPA personnel and staff in determining whether 40 CFR Part 373 applies. Appendix D provides a copy of 40 CFR Part 373 and CERCLA Section 120(h).

Section 120(h) of CERCLA requires the head of a federal agency, department, or instrumentality to provide a notice in the property sales contract. This notice must include the type and quantity of hazardous substances stored on the property, the duration of such storage, and the dates of any releases and subsequent disposal, if applicable.

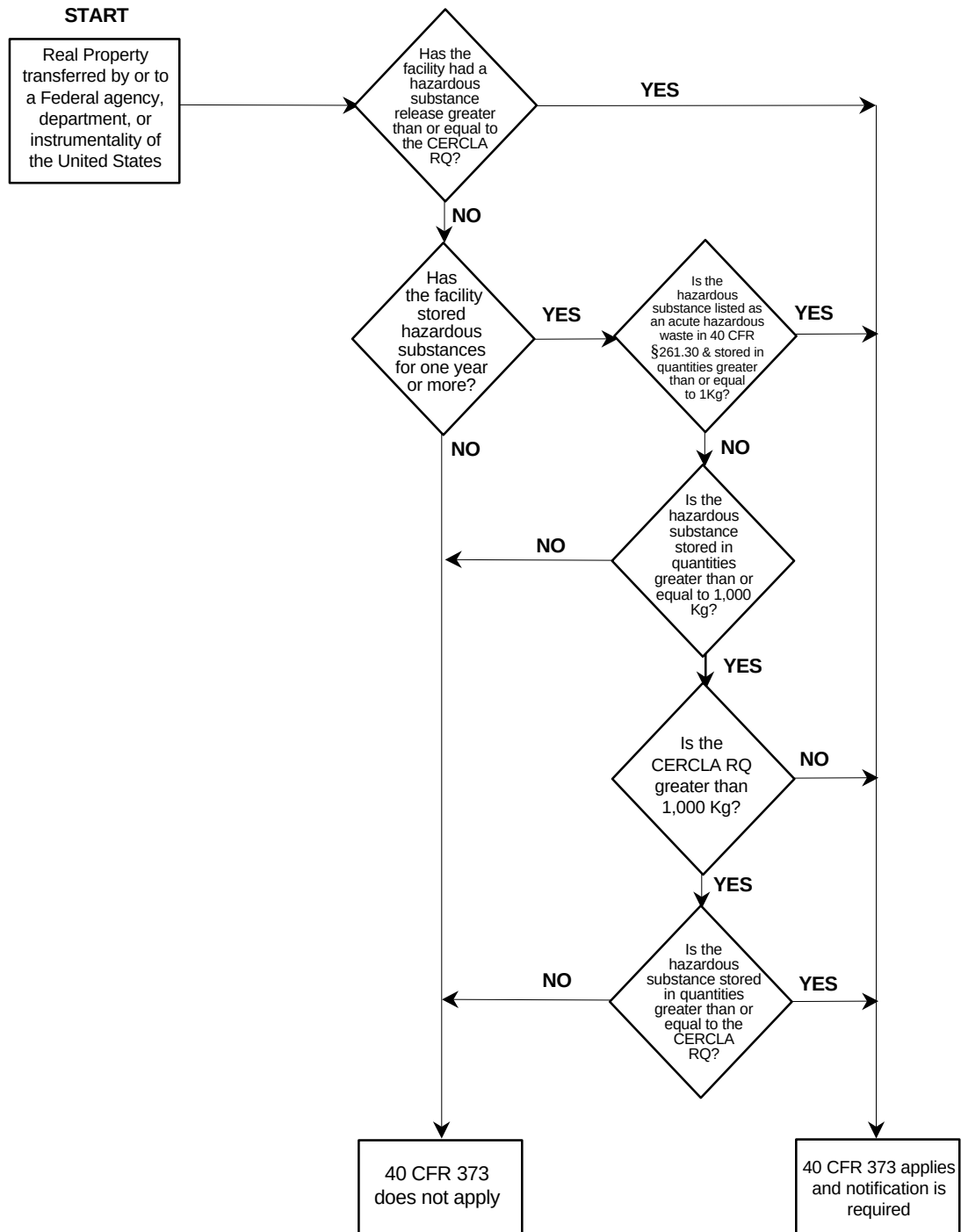
Federal agencies must also comply with the Federal Property and Administrative Services Act of 1949, codified at 41 CFR §§101.42 and 101.47. These regulations discuss the management of hazardous materials, including asbestos, polychlorinated biphenyls (PCB), and lead-based paint (LBP) during real property transfer.

To address these requirements, EPA developed a process known as the EDDP to eliminate or minimize environmental liabilities associated with real property transfer. The EDDP incorporates a three-phased approach that:

- Identifies potential environmental contamination at the property
- Verifies and quantifies the suspected areas of contamination and the environmental condition of the property
- Implements corrective measures to manage and mitigate the contamination before the property is transferred.

An overview of this process is described in Section 3 of this document; and an in-depth discussion of each EDDP phase is provided in Sections 4 through 6 of this document.

Exhibit 1
Decision Tree: Determination of 40 CFR Part 373 Applicability



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2. PROPERTY TRANSFER ISSUES AND ACTIVITIES

DESCRIPTION

During the property transfer process, several activities must be performed by various EPA organizations, including the Office of Administration (OA) and applicable program and regional offices, to ensure real property is transferred legally, on time, and within budget. These activities can be performed either independently or concurrently and include:

- C equipment deactivation and decommissioning
- C facility surveillance and monitoring
- C removal and management of chemicals and hazardous substances
- C permit/license transfer or termination
- C management of personal property and surplus equipment
- C building restoration and improvements
- C coordinating and facilitating the EDDP.

Although the requirements for coordinating and facilitating the EDDP are the main focus of this guidance document, other property transfer activities are described in this chapter to inform appropriate EPA personnel and staff of their potential roles and responsibilities, and the potential impacts these activities may have on the EDDP.

EQUIPMENT DEACTIVATION AND DECOMMISSIONING

Equipment deactivation and decommissioning is an important part of property transfer within the Agency. EPA's facilities and laboratories typically contain equipment that must be properly managed through deactivation and decommissioning during the real property transfer process. A description of these activities is provided in the following paragraphs.

Deactivation

During the real property transfer process, equipment must be deactivated. Deactivation is the process of placing equipment in a safe and stable condition to minimize long-term costs of surveillance and maintenance, while ensuring protection of workers and the environment.¹ Activities involved in the process include the removal and management of liquids and lubricants,

draining and de-energizing non-essential components, and removal and management of hazardous materials.

Decommissioning

When deactivation is complete, the equipment must be decommissioned. Decommissioning includes surveillance and maintenance, decontamination, and dismantlement, if appropriate.² As with deactivation, the safety and health of workers are the key objective for performing decommissioning activities. A description of surveillance and maintenance, decontamination, and dismantlement activities is provided below.

Surveillance and Maintenance - This activity is established to contain contamination, implement physical safety and security controls, and maintain the equipment during the real property transfer process. This process is designed to ensure protection of the workers, the public, and the environment.³ These activities are typically performed in accordance with equipment operating manuals.

Decontamination - This activity involves the removal or reduction of hazardous materials in a safe and compliant manner through washing, heating, chemical or electrochemical action, mechanical cleaning, use of best management practices, and/or implementation of American Society for Testing and Materials (ASTM) Standards (D 5088-90, *Decontamination of Field Equipment Used at Nonradioactive Waste Sites* and D 5608-94, *Decontamination of Field Equipment Used at Low-Level Radioactive Waste Sites*).⁴ It is important to note that 40 CFR §§261.7 and 265.114 may apply when managing hazardous waste generated from decontamination activities.

Dismantlement - This activity involves the disassembly or demolition of the equipment, including the proper management of all parts and materials generated in the process.⁵

Equipment deactivation and decommissioning can be conducted independently or concurrently with the other property transfer activities. Additionally, these activities are usually performed and funded by the responsible program or regional offices. Examples of equipment deactivation and decommissioning are provided in Appendix E.

SURVEILLANCE AND MONITORING

Facility and property surveillance and monitoring must be performed during the real property process to ensure the protection of workers, the public, and the environment. Facilities contain various systems and structures, including boilers; heating, ventilation, and air conditioning (HVAC) systems; generators; aboveground storage tanks (ASTs) and underground storage tanks (USTs); sewage and stormwater pipes and connections; water supply; assorted electrical and mechanical devices; fire alarms and fire-fighting equipment; and other fixtures. Additionally, the property may include other structures and systems such as buildings, sheds, gas cylinders and containers, air conditioners, generators, transformers, and other related items. As a result of these

numerous systems and structures, surveillance and monitoring activities are required to ensure that spills, releases, accidents, and legal liabilities are eliminated or minimized.

In some cases, there will be a period when the facility has been vacated, yet the real property transfer activities have not been complete. During this period, continued surveillance and monitoring activities may be necessary. An evaluation should be performed by the facility manager to determine whether there exists a continued need for surveillance and monitoring at the facility. If the evaluation results conclude that a thorough deactivation has been performed and no safety and health hazards exist, or if the Phase I reveals no suspected areas of contamination, surveillance and monitoring may not be necessary.

Surveillance and monitoring activities are identified during the evaluation, deactivation, or the Phase I EDDP. These activities will continue until the real property transfer process is complete, or until they are no longer necessary. Surveillance and monitoring includes routine maintenance and inspection of the facility. This includes all related property with verified or suspected environmental or safety hazards. The purpose of surveillance and monitoring facilities awaiting Phase II or III EDDP activities is to:

- C Provide a mechanism for the identification of and compliance with environmental, safety, health, and security requirements
- C Ensure adequate containment of contamination
- C Provide physical safety and security controls
- C Minimize potential hazards to the public and the environment
- C Maintain selected systems or equipment essential to closure activities, if economically justified.

Surveillance and monitoring activities should be considered if any of the following conditions exist at the EPA facility:

- C The lease, permit, or occupancy agreement has been or will be terminated
- C The facility has been or will be vacated, and is not occupied by EPA employees, representatives, or contractors
- C The facility is not in a sufficiently safe and stable condition to be protective of workers, the public, and the environment
- C EPA is responsible and liable for the conditions that remain at the property.

Surveillance and monitoring should begin immediately after the need has been identified, and then phased out as the real property transfer activities conclude. Any needed decontamination and removal of equipment should be carried out during surveillance and monitoring activities.

The surveillance and monitoring approach, planning, and implementation should be commensurate with EPA's interest in the real property, the specific conditions of the facility, and the hazards present. If deactivation is comprehensive and thorough, leaving maintenance systems safely shutdown, surveillance and monitoring activities may be minimal or unnecessary. A general surveillance and monitoring approach should be developed for the Safety, Health and Environmental Management Division (SHEMD) and the Facilities Management and Services Division (FMSD) review and approval. The elements of the surveillance and monitoring approach should include:

- C Assignment of responsibilities
- C Maintenance and inspection of the structures, systems, components, and equipment
- C Surveillance, preventive maintenance, and equipment calibration frequencies/schedules.

It is recommended that a log be maintained to document the surveillance and monitoring activities performed on each structure or system. This information will be beneficial to the next owner/operator of the facility or property.

Surveillance and monitoring can be performed independently or concurrently with other property transfer activities. These activities are usually performed and funded by the responsible program or regional offices.

REMOVAL OF CHEMICALS AND HAZARDOUS MATERIALS

EPA laboratories and facilities may have a substantial inventory of chemicals, hazardous materials, and environmental samples and standards as a result of their laboratory research and analysis operations, having related environmental, health, and safety issues. During real property transfer, these chemicals and hazardous materials must continue to be properly managed in accordance with EPA, Occupational Safety and Health Administration (OSHA), and state and local regulations to ensure protection of human health and the environment.

To ensure proper management of these chemicals and hazardous materials, an inventory should be created or obtained to identify their locations and the amount present on site. Any chemicals or hazardous materials no longer required for operations should be transferred to another EPA facility, given to a local university or high school, recycled, or properly disposed. Additionally, a transition schedule should be developed and implemented to periodically remove and transfer the chemicals and hazardous materials that are no longer required. Through careful management of excess chemicals and hazardous materials early in the transition process, the owner can avoid exceeding Resource Conservation and Recovery Act (RCRA) generator thresholds and disposal

contractor limitations during the real property transfer process. The RCRA chapter of EPA's *Safety, Health, and Environmental Management Guidelines* provides additional information on managing hazardous waste.

As with the other property transfer activities, the removal of the chemicals and hazardous materials can be done independently or concurrently with other operations. These activities are usually performed and funded by the responsible program or regional office.

PERMIT/LICENSE TRANSFER OR TERMINATION

EPA laboratory and facility operations involve numerous environmental activities and applications that usually require federal, state, or local permitting or licensing. Specifically, EPA laboratories or facilities may require one or more of the following environmental permits to conduct operations:

- RCRA Part B treatment, storage, or disposal facility (TSDF) permit
- UST installation notification and operating permit
- National Pollutant Discharge Elimination System (NPDES) permit
- Permit to discharge industrial waters or waste waters from an elementary neutralization tank to a local publicly owned treatment works (POTW)
- Clean Air Act (CAA) permit.

Additionally, EPA laboratories or facilities may possess a license with the Nuclear Regulatory Commission (NRC) for the use and management of radionuclides.

EPA personnel and staff will need to acquire, transfer, or terminate these permits and licenses when the real property transaction occurs. The program office responsible for operating and managing the permit will need to work closely with the federal, state, local authorities, and other agencies or organizations early in the process to ensure a smooth transition with the permits.

As with the other property transfer activities, the acquisition, transfer, or termination of permits can be done independently or concurrently with other operations. These activities are usually performed and funded by the responsible program or regional offices; therefore, the cost of the subject permitting activities should be included in the budget requests for the appropriate fiscal years.

RCRA Applicability

In general, facilities that treat, store, or dispose of hazardous waste are required to obtain a RCRA permit. The permit defines the facility's operating parameters and the requirements of the permit

applicant for the treatment, storage, or disposal activities conducted at the facility. RCRA permitting of new hazardous waste management facilities (HWMFs) and transfer of RCRA permits from existing HWMFs is often a lengthy, involved process.

In a few narrowly defined cases, a facility that would otherwise be treating, storing, or disposing of hazardous waste is not required to obtain a RCRA permit. These specific cases are listed in 40 CFR §270.1(c)(2). The following exceptions from RCRA permitting requirements are those particularly relevant to EPA personnel engaged in real property transfer:

- C Generators who accumulate hazardous waste on site for less than the time periods provided in 40 CFR §262.34
- C Owners and operators of totally enclosed treatment facilities as defined in Section 260.10
- C Owners and operators of elementary neutralization units or wastewater treatment units as defined in 40 CFR §260.10
- C Persons adding absorbent material to hazardous waste in a container (as defined in 40 CFR §260.10) and persons adding waste to absorbent material in a container (provided that these actions occur at the time the waste is first placed in the container and comply with 40 CFR §§264.17(b), 264.171, and 264.172)
- C Universal waste handlers and transporters managing wastes subject to regulation under 40 CFR Part 273
- C Owners and operators performing treatment or containment activities taken during immediate response to the following situations:
 - a discharge of a hazardous waste
 - an imminent and substantial threat of a discharge of a hazardous waste
 - a discharge of a material which when discharged becomes a hazardous waste.

The permit exceptions listed in 40 CFR §270.1(c)(2) are conditional. For example, generators of hazardous waste maintain permit-exempt status only if they accumulate waste in certain units for limited time periods. In addition, state RCRA programs may be more stringent than the Federal RCRA program and may involve additional conditions.

Closing facilities or transferring ownership of facilities that have RCRA permits may involve a lengthy transition. Closure should be conducted in accordance with approved closure plans and should include comprehensive decontamination and waste-removal operations. Considerations during closure include:

- C Decontaminating and removing hazardous waste equipment, structures, and impacted environmental debris and media (see Section 2 *Equipment Deactivation and Decommissioning* in this document for more detail)

- C Removing and handling all hazardous waste in accordance with approved closure plan and generator duties
- C Transferring hazardous waste, soils, and debris off site to an appropriate TSDF using a licensed hazardous waste transporter
- C Minimizing the need for long-term facility maintenance.

Transfer of a RCRA permit to a new owner or operator must be accomplished in accordance with 40 CFR §270.40. The transfer can occur only by submitting a permit modification request, or when the permit is revoked or reissued by the permitting agency to include the new permittee and additional permit conditions, if necessary. EPA personnel engaged in RCRA permit transfers should work closely with their permitting agency and the new owner to ensure that EPA meets any applicable ongoing financial assurance obligations, closure duties, or post-closure care requirements.

Similar to facility closures and transfers, the process of obtaining RCRA permits for hazardous waste management activities at new EPA facilities may be complex and lengthy. RCRA permits are facility specific; these permits may not be transferred from one location to another (except in rare cases). However, EPA personnel should be cognizant that in some cases the permitting process may be streamlined by engaging the state or regional permitting agency early in the transition process. Discussions with the permitting agency should be focused on several issues:

- C Availability of existing procedures and policies (if any) for streamlining the permitting process in situations where EPA is transferring from one location to another
- C Changes (if any) that EPA will make to existing permit conditions at the new facility and associated justifications for the change(s)
- C Demonstrated benefits to public health and the environment of changes to existing permit conditions
- C The possibility of discussing substantive changes so that the permitting agency's concerns can be addressed prior to a formal draft submittal.

To expedite the review process, EPA personnel should strive to make only those changes or modifications to existing permit conditions that are absolutely necessary due to the move when applying for RCRA permits at new facilities. Once the permit has been approved and operations have commenced at the new facility, enhancements and improvements to the permit and facility operation can be incorporated through permit modifications without disrupting operations. Where changes are necessary to the existing permit conditions, EPA personnel should highlight or mark these changes when submitting permit application information to the appropriate agencies. The practice will significantly reduce the administrative and review burden on both EPA personnel and permitting agencies.

PERSONAL PROPERTY AND SURPLUS EQUIPMENT

Typically, real property owned or operated by the federal government includes numerous personal properties and surplus equipment. *Personal property*, as defined in 41 CFR §101.43 means “any property, except real property (as defined in 41 CFR §101.47 and 103.12), records of the Federal Government, and naval vessels of the following categories: battleships, cruisers, aircraft carriers, destroyers, and submarines.” *Surplus* is something in excess of what is used or needed.⁶ *Equipment* is defined as the articles, implements, etc., used or needed for a specific purpose or activity.⁷ Therefore, *surplus equipment*, as it relates to real property, means any excess article, implement, etc., not required for further use by the federal government.

To ensure proper management of personal property and surplus equipment, an inventory should be created, by the facility manager and program office or regional office representatives, to identify the locations and amounts present on site. When the inventory is complete, the personal property should be managed in accordance with EPA’s *Personal Property Management Policy Manual* (EPA Manual 4831, February 12, 1990). The surplus equipment should be removed from the property, and transferred off site for future use elsewhere, or properly disposed.

As with the other property transfer activities, personal property and surplus equipment can be managed independently or concurrently with other operations. Additionally, these activities are usually performed and funded by the responsible program or regional offices.

BUILDING RESTORATION AND IMPROVEMENTS

During the property transfer process, buildings and facilities are evaluated to determine their condition and integrity. Building and facility components are inspected, including the structural integrity, electrical systems, exterior, plumbing, interior, basement, crawl space, and HVAC equipment. Any discrepancies noted or potential areas of concern are brought to the attention of the EDDP Project Manager and Real Estate Manager, program and regional offices, and facility manager and SHEMP manager. Depending on the severity of the problem, building or facility restoration or improvements may be required.

As with the other property transfer activities, the restoration or improvement of buildings can be performed independently or concurrently with other operations. These activities may be performed and funded by several EPA organizations, depending on the circumstances, and building and facility conditions.

ENVIRONMENTAL DUE DILIGENCE PROCESS

The EDDP is the main focus of this guidance document. It is important for appropriate EPA personnel and staff to have a thorough understanding of the entire process, from inception through completion, in order to effectively and efficiently assess the environmental condition of EPA real

property and perform corrective measures, if required. An overview of this process is provided in the next section.

To avoid unnecessary delays, it is important to understand that the EDDP can be performed independently or concurrently with the other real property transfer activities cited in this section. The EDDP start date depends on the complexity of the facility or laboratory operations, the real estate agreement, size of the property, number of facilities, and number of operating programs. Professional judgement should be exercised when determining the appropriate start date for the process. If feasible, the EDDP should commence at least one year prior to the anticipated property transfer activity. Regardless of the start date, the EDDP is not final until EPA's environmental liabilities or risk with the subject property is eliminated or minimized and the Agency no longer has interest in the real property.

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3. OVERVIEW OF THE EDDP

OBJECTIVES

The focus of the EDDP is to identify, document, manage, and mitigate potential environmental contamination associated with EPA's interest in real property. EPA's objectives include:

- C Performing EDDP activities in accordance with CERFA, 40 CFR Part 373, and the American Society for Testing and Materials' (ASTM's) Environmental Site Assessment (ESA) Standards
- C Ensuring that all EDDP requirements are addressed and identifying potential environmental contamination
- C Establishing a consistent and defensible approach for addressing the necessary environmental actions
- C Avoiding costly litigation and environmental remediation liability under CERCLA, RCRA, or any other relevant statutes.

PHASES OF THE EDDP

EPA's EDDP includes three phases, which are shown in Exhibit 2 and discussed thoroughly in Sections 4 through 6 of this document.

Phase I - Preliminary Survey and Site Investigation

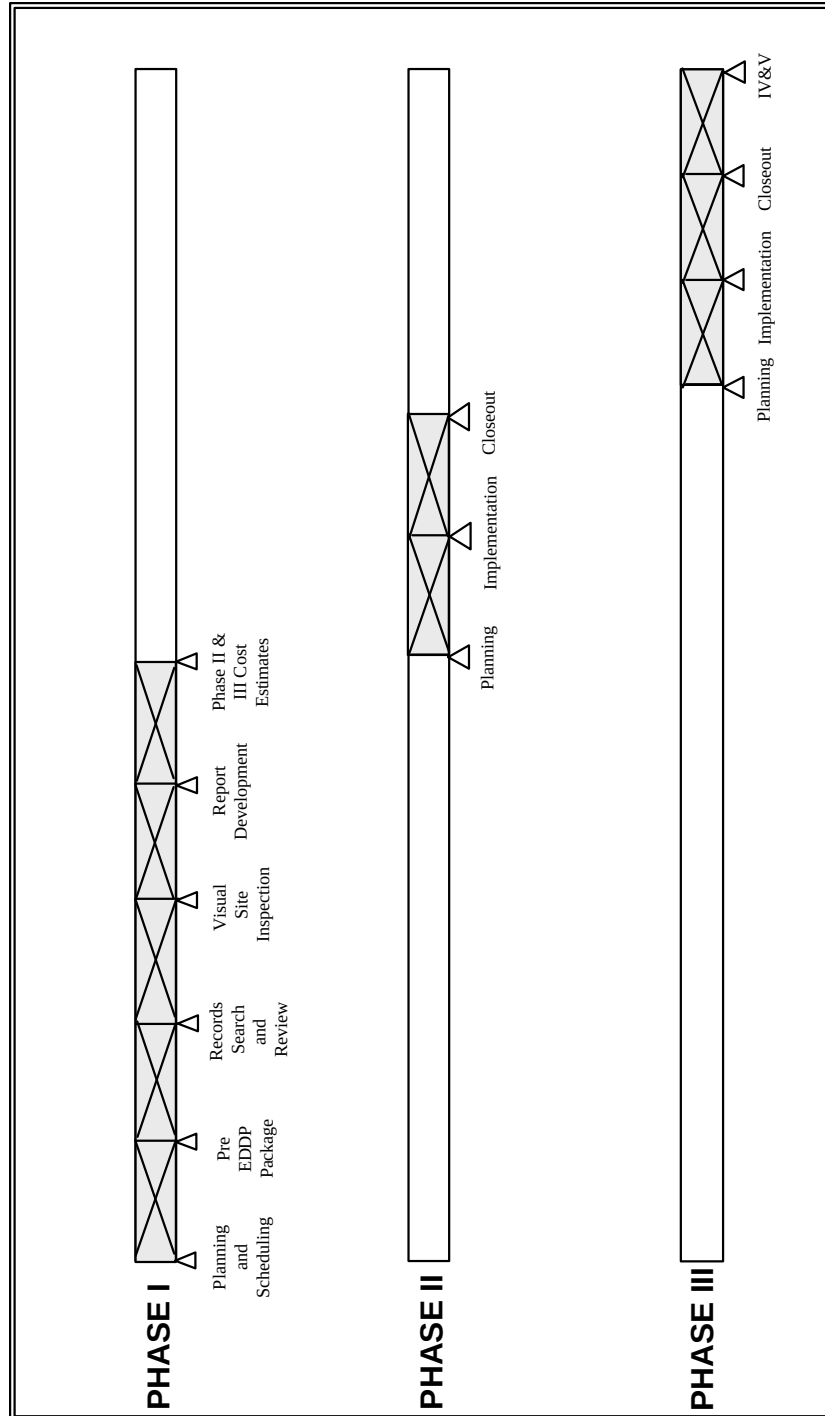
Phase I is the most critical and important stage of the process because it serves as the foundation for the other two phases. The primary focus of Phase I is to qualitatively characterize the site and identify any suspected areas of environmental contamination that may require further investigation or remediation. Phase I activities consist of:

- C Pre-EDDP planning and scheduling
- C Completing a site questionnaire
- C Conducting a records review
- C Performing an archival investigation
- C Performing a visual site inspection

- Ⓒ Conducting personal interviews
- Ⓒ Compiling and evaluating data
- Ⓒ Developing the Phase I report.

It requires cooperation and information from all parties involved in the process, including EPA, General Services Administration (GSA), other government entities, state and local municipalities, and contractors. All data gathered during this phase are documented in the Phase I report. Phase I of the EDDP is discussed in more detail in Section 4 of this document.

Exhibit 2
EDDP Activities and Transition Between Phases



Phase II - Confirmatory Sampling

The information contained in the Phase I report is used to develop a strategy for Phase II. Depending on the findings and recommendations described in the Phase I report, several activities may be performed under Phase II. Typically, Phase II activities consist of three steps: planning, implementation, and closeout. These steps are discussed in more detail in Section 5 of this document.

Phase III - Characterization Sampling, Cleanup, and Decontamination

The Phase II report is used to analyze the potential contaminants of concern and develop a strategy for Phase III. Typically, Phase III activities consist of three steps: planning, implementation, and closeout. In addition, an independent validation and verification (IV&V) is conducted to ensure Phase III activities are successful. These activities are discussed in more detail in Section 6 of this document.

TYPES OF REAL PROPERTY TRANSFER

There are many types of property transfer scenarios which require unique approaches to the EDDP. These scenarios may involve different parties as well as site-specific real property transfers. The different parties involved in a transfer may include the following:

- Ⓒ EPA program and/or regional offices
- Ⓒ EPA and another federal agency (e.g., GSA)
- Ⓒ EPA and a state or local government
- Ⓒ EPA and a private or commercial organization.

For each type of property transfer — acquisition, termination or closure, or lease — the following circumstances will also influence the scope of the EDDP:

- Ⓒ Full occupancy of a building without use of the site grounds
- Ⓒ Full occupancy of a building with use of the site grounds
- Ⓒ Partial occupancy of a building without use of the site grounds
- Ⓒ Partial occupancy of a building with use of the site grounds.

The type of real property transfer can dictate how many phases of the EDDP are performed. At a minimum, Phase I EDDP activities will be conducted for all EPA real property acquisitions, terminations or closures, and leases. Additionally, Phase I assessments may be conducted on

internal property transfers within the Agency when the property is being transferred to different program or regional offices. A discussion of each type of transfer is provided in the subsequent paragraphs.

Acquisition

An *acquisition* is defined as the act of becoming the owner of certain real property.⁸ The acquisition of real property is the most challenging of the three types of real property transfers because the Agency must rely solely on external sources to obtain past and current information on the site. It may also be a more expensive undertaking due to the extra effort required for data collection, assimilation, and evaluation. Therefore, it is extremely important to conduct a thorough and detailed records review and site investigation during the Phase I assessment.

During the acquisition process, Phase II EDDP activities may be needed to properly characterize the environmental condition of the property; however, Phase III activities would be unlikely. Generally, EPA would not acquire property found to be contaminated unless it was prepared to pay for cleanup, or able to negotiate a reduced sale price adjusted for cleanup costs. If Phase II EDDP activities are needed to confirm environmental contamination, EPA will need to evaluate its options on whether to move forward with the acquisition process or pursue other parcels of land. One of the determining factors will be costs of Phase II, and future potential environmental liabilities associated with the subject property.

Termination or Closure

Termination or closure is defined as the transfer of real property control to another party.⁹ The termination or closure of real property is the most prevalent form of real property transfer in the federal government today. During the termination or closure process, the extent of EDDP activities depends heavily on past and current operations at the site. At a minimum, Phase I EDDP activities should always be performed. Depending on the results of Phase I, Phase II and III EDDP activities may be required to reduce or minimize the environmental liabilities associated with the real property.

Lease

During lease transactions, the Agency will exercise two types of lease options, execution or termination. *Lease execution* is defined as initializing an action to rent real property to another party.¹⁰ *Lease termination* is defined as the act of ending a lease rental from another party.¹¹

Depending on the situation, EPA can serve in one of two roles for each of the two lease options. The first situation depicts EPA in the role of the property owner or landlord, whereby tenants have or are considering leasing the property from the Agency. In this scenario, EPA should maintain documentation on the environmental condition of the property prior to the tenant occupying the space. This information will serve as a useful baseline when the tenant vacates the property. EPA should monitor the environmental condition of the property throughout the tenant's occupancy. Prior to termination of the lease, EPA should ensure a Phase I EDDP is performed, preferably by

the tenant, to properly document the environmental condition of the property at the time of the tenant's departure. The findings in this Phase I should be compared to the original Phase I (i.e., the baseline) to determine potential environmental concerns and to minimize EPA's future liability.

The second scenario depicts EPA in the role of a tenant, whereby the Agency is executing or terminating a lease with the property owner or landlord. It is assumed that EPA performed a Phase I prior to signing the lease and occupying the property, so that the environmental condition of the property is known and documented. This Phase I will serve as the baseline. When it comes time to terminate the lease, EPA should perform a Phase I EDDP to determine the environmental condition of the property. This Phase I should be compared to the baseline Phase I to determine EPA's potential environmental concerns. After the comparison, EPA can determine if Phase II and III EDDP activities are needed to eliminate or minimize the Agency's environmental liabilities or risks with the subject property.

Transfer Within EPA

There are times when EPA transfers property in house amongst program or regional offices. At these times, a Phase I EDDP may be required to document the environmental condition of the property. The decision to perform a Phase I EDDP during these internal Agency transfers is made jointly by the National Real Estate Manager, OA, and applicable program or regional offices. At a minimum, the Phase I EDDP will be used to determine if potential contamination exists so that the responsible office pays for the cleanup.

EXTENT OF THE EDDP

Depending on the type of property transfer, organizations involved, location, past and current site operations, environmental condition of the property, and other Agency-specific issues, the EDDP may include one or more phases. To impose a specified time line for each phase of the EDDP is impractical given the complexity of the real property transfer process, and the diversity of each parcel of land. Table 1 provides an approximation of the number of phases needed for each type of property transfer. The table should be used as a planning tool to assist managers with setting priorities, goals, and schedules when the decision is made to transfer real property.

Table 1
Phases of the EDDP for Each Type of Property Transfer

Organizations Involved Type of Real Property Transfer	Property Transfer Between EPA and Another Federal Agency	Property Transfer Between EPA and a State or Local Municipality	Property Transfer Between EPA and a Private Organization
Acquisition	I, II	I, II	I, II
Termination	I, II, III*	I, II, III*	I, II, III*
Lease Execution	I, II**	I, II**	I, II**
Lease Termination	I, II, III*	I, II, III*	I, II, III*

* Phase III may be required depending on Phase II results

** Phase II may be required depending on EPA's mission and priorities associated with the subject property

ROLES AND RESPONSIBILITIES

There are various organizations within EPA that directly or indirectly participate in EDDP activities. The roles and responsibilities for each of these organizations depends on the site-specific conditions and operations conducted on site. The organizations within EPA typically participating in EDDP activities includes the OA, Office of General Counsel (OGC), and the relevant program and regional offices. Within each organization, there are representatives that are typically involved in the EDDP process. The following is a list of those individuals and their respective responsibilities:

EDDP Project Manager - Responsible for leading and managing EPA's EDDP project at the subject facility and overseeing the EDDP review team and personnel support. Appendix G highlights the necessary qualifications of the EDDP Project Manager.

Real Estate Manager - Responsible for management and oversight of all real estate-related activities. The Real Estate Manager must be aware of the scope, goals, and management process involved in the EDDP.

EDDP Review Team - Responsible for providing technical support to the EDDP Project Manager from the inception of the project to completion. Appendix H highlights the necessary qualifications of team members.

Facility Manager - Responsible for facility life cycle management operations, including acquisition, transfer, and termination activities as it relates to real property. The facility manager coordinates with the EDDP Project Manager on all EDDP activities.

SHEMP Manager - Responsible for managing the Safety, Health and Environmental Management Program (SHEMP) at the facility. The SHEMP Manager supports the EDDP Project Manager on all EDDP activities.

Regional/Program Office Representative - Responsible for providing regional and programmatic information on the subject facility. The representatives provide supplemental support to the EDDP Project Manager on an as-needed basis.

OGC - Responsible for providing legal assistance to the EDDP Project Manager to eliminate or minimize EPA's liability in real property acquisitions, transfers, or terminations.

Each organization has discrete roles and responsibilities within the EDDP phases. For example, OA performs all of the Phase I EDDP activities, but it acts in an oversight role during Phases II and III. Table 2 summarizes the roles and responsibilities for each organization during the three phases of the EDDP. An independent contractor may be hired to perform one or more of the EDDP phases.

Table 2
EDDP Roles and Responsibilities

EDDP EPA Organizations Involved	Phase I	Phase II	Phase III
Office of Administration	Ž	•	•
Office of General Counsel	•	•	•
Program Offices	•	Ž/•	Ž/•
Regional Offices	•	Ž/•	Ž/•

Note: If adequate personnel resources are not available within the Agency, an independent contractor may perform Phase I activities, as well as Phase II and III activities.

Legend: Ž Conduct or Perform
• Participate/Assist/Concur
• Oversight

STAKEHOLDER INVOLVEMENT

The stakeholders are organizations or representatives external to EPA who have an interest in the real property and generally include GSA, property owner(s), property management company(ies), and any other representative of GSA or the property owner, such as legal council. The timing and protocol for involving the stakeholders is important and must be appropriately planned by EPA representatives.

Stakeholder involvement is a valuable and necessary part of the EDDP. Stakeholders, however, should only become involved in the EDDP once the Phase I report is final, a thorough review of the Phase I conclusions has been conducted and agreed on, Phase II and III actions have been determined by EPA, and OGC has had the opportunity to review and comment on the Phase I EDDP report. Prior to the completion of these tasks, the evolutionary nature of the due diligence process, and the complexity of the unconfirmed data requires that all EDDP-related information be exchanged only with appropriate EPA personnel and staff, and EPA contractors. Only after all information, data and facts have been collected, assimilated and confirmed, and due diligence has been completed (which occurs throughout the EDDP document preparation process), should EPA release draft EDDP documents or related information to stakeholders or the public. This procedure assures that the information provided is accurate and defensible, and will serve to minimize the potential for misinterpretation or misapplication of raw and unconfirmed data.

In cases where another federal agency is the property owner (i.e., GSA) or good relations exist between EPA and the property owner/management company, these stakeholders may be considered as information resources and could be interviewed by the EDDP review team. However, these interviews should be independent of any EPA internal or information gathering meetings such as the in- and out-briefings during the Phase I site visit. The EDDP review team should obtain approval from appropriate EPA representatives before approaching any stakeholder as an information resource and for an interview. If stakeholders are included as an information resource, the participants during the initial interview session or meeting with the stakeholders should include the EDDP review team and the appropriate EPA representatives.

Once the EDDP report(s) has been finalized, including a thorough internal EPA review, approval, and incorporation of all comments, EPA's Architecture, Engineering and Real Estate Branch (AEREB) Chief could provide the stakeholder (i.e., appropriate GSA representative or property owner) with the complete EDDP reports(s). The documentation provided to the stakeholder should include the report in its entirety, and not be limited to an executive summary recommendations, or conclusions. The appropriate EPA laboratory or office representatives should be notified accordingly regarding the transmittal to the stakeholder.

FUNDING

The source of funding for Phase I activities is usually OA; however, there are times when the program or regional offices are the source of funding. When these situations arise, the source of funding will be based on site-specific conditions. Funds are allocated when the OA receives notification from the operating program or regional offices that a real property transfer is required. The source of funding for Phases II and III depends on site-specific conditions and operations, and will either be the operating program offices, regional offices, or OA. If Phase II and III activities are a result of operational research activities, such as removing and disposing of hazardous materials and surplus chemicals, decontaminating laboratory equipment or other structures, safe shutdown of laboratory equipment or operations, or cleanup of test plots, then the program or regional offices will typically be the source of the funding. However, if the Phase II and III activities are a result of facility-related activities, such as management of tank and sewer systems, buildings, or utilities, then OA may provide the funding resources.¹² This information is more

fully discussed in the May 1996, letter from OA entitled “Management Responsibility for Transferring EPA Real Property,” which is provided in Appendix F.

Additionally, the program or regional offices are usually responsible for providing the funding resources for property transfer-related activities such as equipment deactivation and decommissioning, management of personal property and surplus equipment, permit transfer or termination, and removal of chemicals and hazardous substances.

4. PHASE I - PRELIMINARY SURVEY AND SITE INVESTIGATION

DESCRIPTION

Phase I of the EDDP consists of a preliminary survey and site investigation. At a minimum, the Phase I will be conducted for all real property in which EPA wishes to obtain or holds real estate interest. As stated in Section 3, the Phase I is usually conducted and funded by OA. If it, however, does not have adequate resources or qualified personnel, other EPA Headquarters, Program, or Regional resources may be involved. Specifically, FMSD and SHEMD will request support from the program office, the Offices of Solid Waste and Emergency Response (OSWER), Emergency and Remedial Response (OERR), and Federal Facilities Reuse and Restoration (OFFRR). Contracting out the Phase I may be considered if all facility and Headquarters personnel resources are exhausted, unavailable, or do not exist. The contractor should be selected based on the Phase I contractor specifications in Appendix H. If the Phase I is performed by a private contractor, the contractor will perform all Phase I activities under the guidance and direction of the EDDP Project Manager.

During real property termination or closure, or lease termination, OA must immediately identify an EDDP Project Manager who meets the qualifications delineated in Appendix H, and who will be responsible for the management and oversight of the Phase I EDDP. The facility manager and SHEMP manager must be aware of the scope, goals, and management process involved in the EDDP, and support the EDDP Project Manager on an as-needed basis. They must provide accurate information in the pre-EDDP questionnaire and during the records search. The facility manager and SHEMP manager must also provide the critical interface between laboratory or facility personnel and the EDDP review team to facilitate the on-site review process and ensure that accurate information is contained in the Phase I report. The facility manager and SHEMP manager must also review the EDDP reports prepared by the EDDP review team for accuracy and appropriate level of detail.

During proposed real property acquisitions or lease executions, the same general guidelines discussed for real property termination or closure, or lease termination, apply except the facility and SHEMP managers will not be EPA employees. Therefore, the facility manager and SHEMP manager may not be as well versed on EPA's Phase I EDDP or Phase I Site Assessments. EPA may consider providing a copy of the EDDP guidance to the current real property owner or landlord so that he or she understands what type of information the review team will be requesting.

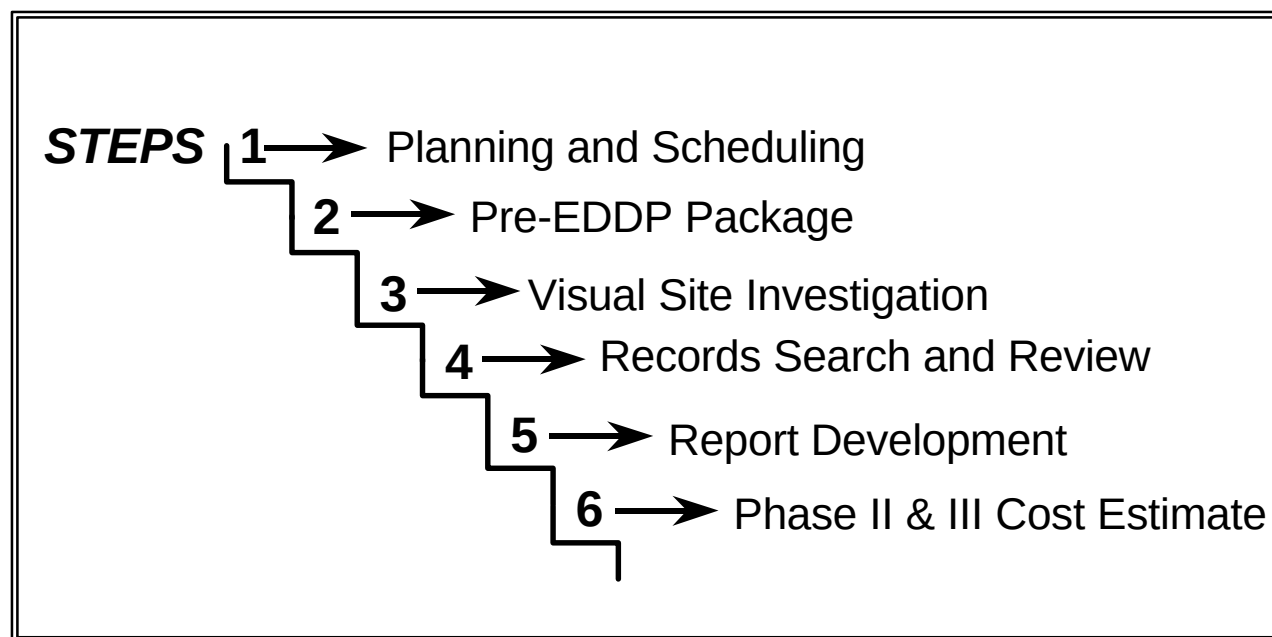
Once the facility manager and SHEMP manager have been notified, the Phase I should commence immediately. Each of the following elements is required to complete Phase I:

- C A schedule to complete the EDDP visual site investigation

- C A pre-EDDP package with questionnaire to obtain fundamental information concerning the EPA facility (a sample of the transmittal letter and questionnaire included in this package is provided in Appendix I)
- C A review of applicable documents and records, such as those listed in the Records Search and Review section of this document, to determine whether there is any information available, either at the facility or via public records, regarding potential environmental contamination resulting from EPA or other activities conducted at the facility
- C A site investigation of the EPA facility, including walk-throughs and personnel interviews, to determine past and present environmental practices, facility operations, and site conditions
- C A written report to document the process and results of Phase I.

The EDDP Project Manager must ensure that the following Phase I EDDP activities are performed: questionnaire completion and review; records search and review; site investigation; and Phase I report. Exhibit 3 provides a step-by-step layout of the activities involved in Phase I.

Exhibit 3
Phase I EDDP Activities



PLANNING AND SCHEDULING

Planning an EDDP site visit is important to the overall success of the EDDP. By planning and coordinating the details of the EDDP site visit far enough in advance, the EDDP team can increase the amount of relevant information obtained on the history and current operations of the facility, as well as ensure that key personnel are available during the course of the site visit. For the purposes of this section, key facility staff should include those individuals with historic

knowledge of facility operations and other events that may be relevant to the EDDP review. These individuals usually consist of the laboratory director; facility manager; SEMP manager; radiation safety officer (RSO); hazardous materials/waste manager; and laboratory or other staff with historical knowledge of the facility. It will be up to the discretion of OA and the EDDP Project Manager whether to include the property owner in any on-site activities. Typically, the property owner is contacted on an as-needed basis. For additional details on stakeholder participation, refer to *Stakeholder Investment* included in this document in Section 3, *Overview of the EDDP*. It is encouraged that these key individuals participate in the EDDP review team in-brief at the facility, and at a minimum are available for interviews at some point during the EDDP review team site visit. The EDDP Project Manager and facility manager will identify the relevant facility and program representatives and involve these representatives in initial planning and EDDP decision-making.

The schedule for the EDDP Phase I should be developed by the EDDP Project Manager (with coordination from the facility and SEMP managers) after receiving notice that EPA is either acquiring, transferring, or disposing of real property. After the notice has been received by FMSD, the EDDP Project Manager should contact the facility manager to obtain a full understanding of the scope of the project and specific timelines for vacating or occupying the property.

PRE-EDDP PACKAGE

After a schedule has been developed, the pre-EDDP package should be assembled by the EDDP Project Manager contact and sent to the facility manager. The pre-EDDP package consists of the transmittal letter and the pre-EDDP questionnaire. The transmittal letter should originate from OA and state the purpose of the Phase I activity (i.e., transfer, acquisition, or disposal of subject property), the date(s) of the site visit, and establish a date for completing and returning the pre-EDDP questionnaire to the EDDP Project Manager. An example transmittal letter is included in Appendix I. The purpose of the questionnaire and follow-up interviews is to obtain basic information about the real property and to help focus the document search and the site inspection. The facility manager should ensure that the questionnaire is completed by personnel familiar with the past and present facility or laboratory operations. As warranted and reasonably possible, former and retired facility personnel should be identified and interviewed; they may have information or concerns regarding suspected contamination resulting 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 name, phone number, facsimile number, e-mail address, position, and responsibility of each person contributing to the questionnaire must be documented in case verification is necessary. The questionnaire completion is an integral part of the EDDP and will be used extensively by the EDDP review team. The pre-EDDP questionnaire is included in Appendix I.

In addition to reviewing the pre-EDDP questionnaire prior to conducting the site visit, the EDDP review team should review applicable documents and records to obtain background information on the subject property. At a minimum, this information should consist of past SEMP

environmental, safety and health audit reports, the site assessment report (SAR), a United States Geological Survey (USGS) 7.5-minute topographic map, and the completed pre-EDDP questionnaire. Reviewing these items in advance will enable the EDDP review team to more effectively develop targeted questions to ask key personnel and any local officials during the site visit.

SITE INVESTIGATIONS

Site investigations are a critical component of the Phase I EDDP. Appendix N provides guidelines for performing the physical site investigation.

Primer on Environmental Issues

The site investigation includes general observations, and evaluating the presence of USTs and ASTs, waste handling practices, radioactive materials, PCBs, asbestos, LBP, pesticides, and radon and sensitive environmental areas. These basic considerations are discussed below.

Observations from the Investigation

Observations made during the site investigation will identify obvious signs of actual or potential contamination. Many hazardous materials will stain soils or other surfaces and may stress or destroy vegetation, such as grass or plants. The presence of drums may be an indication of hazardous waste contamination. If drums are present and not labeled, the site owner/operator or personnel may be needed to help identify the contents. Material Safety Data Sheets (MSDS) on file at the site may also be helpful in determining hazardous materials present. Additionally, inquiries should be made about past practices, such as the disposal of chemicals in sinks and possible plumbing concerns within buildings and other infrastructures, to determine the potential for contamination.

Underground Storage Tanks

Leaking underground storage tanks (LUSTs) may be present on site and may contain petroleum products, hazardous waste, or other hazardous substances. LUSTs can result in soil and groundwater contamination and migration of released products into utility conduits or basements of nearby structures. The risks to humans include exposure to toxic fumes or contaminated drinking water. In addition, flammable materials migrating to conduits or basements present a risk of fire or explosion.

Aboveground Storage Tanks

The hazards posed by ASTs are similar to those of USTs. All tanks not classified as USTs are ASTs. A tank is considered an UST and not an AST if its underground network of pipelines consists of 10 percent or more of the volume of the tank. ASTs can serve a variety of functions,

such as portable tanks used on construction sites, fiberglass tanks used in chemical processing operations, and large cylindrical steel tanks used at oil refineries.

A leaking AST storing petroleum products or other hazardous substances presents a potential risk of contaminating surface soils, surface waters, and groundwater if a leak or spill is undetected. An AST also poses a potential fire or explosion hazard if it contains flammable, combustible, or reactive materials. Additionally, sumps and pits should be visually inspected to identify potential sources of contamination; however, auditors must be aware of their surroundings at all times, and never enter a confined space. Confined spaces must be accessed in accordance with OSHA standards by certified individuals. The EDDP review team should notify the facility manager of any potential or actual hazardous conditions encountered during their walk-through of the facility.

Waste Handling Practices

The term “hazardous substance” refers to a wide range of chemical, radioactive, and biological substances or materials. These substances pose environmental, health, and safety risks due to specific material characteristics such as flammability, combustibility, corrosivity, toxicity, reactivity, or explosivity. Hazardous materials have the potential to contaminate property or its surroundings if released into the environment, including the soil, groundwater, surface water, or air. This contamination can pose hazards to humans, vegetation, and wildlife as a result of either direct exposure to the hazardous substances, or indirect exposure from contaminated soils or drinking water supplies.

Hazardous substances include a wide variety of materials ranging from household products to chemicals used in specific industrial and research processes. Hazardous substances may include detergents, solvents, paints and allied products, petroleum products, agricultural chemicals, biological products, and equipment containing hazardous substances. Other hazardous substances may include pharmaceuticals, compressed gases, pigments and dyes, plasticizers, printing ink, boiler and heat insulating compounds, water treatment, waterproof compounds, and fire-extinguishing media.

Details about correct waste handling, storage, and disposal practices should be available from the facility manager or the SHEMP manager. Additionally, the role of the EDDP Project Manager and facility manager is to work with the SHEMP manager to account for all hazardous materials, and to determine when these products will be transferred. For real property acquisitions or lease execution, EPA should contact the current owner or operator to obtain information regarding waste handling practices.

Radioactive Materials

A radioactive material or mixture spontaneously emits ionizing radiation which may take different forms, including alpha particles, beta particles, neutron radiation and gamma radiation. Radioactive materials come in both solid and liquid form. Radiological contamination can be

present in porous surfaces, within cracks or crevices, or on non-porous surfaces that are directly exposed to radiation.

Alpha particles are the least penetrating and most energetic. Alpha-emitting wastes require no shielding, but alpha emitting nuclides can be dangerous when ingested or inhaled because the particle energy is transferred directly to adjacent cells.

Beta particles are charged electrons, which are emitted from the decay of some radioactive elements and are more penetrating than alpha particles. Depending on the concentration, beta-emitting wastes may require some level of shielding such as a thick sheet (up to one-half inch) of plastic. Beta particles can penetrate skin and cause burns, and travel several meters in air; however, the principal hazard comes from ingestion or inhalation of beta-emitting material.

Gamma radiation is highly penetrating electromagnetic radiation of extremely short wavelengths (similar to X-rays). Gamma-emitting nuclides are a hazard when ingested, inhaled, or when exposed to the body. Heavy materials, such as lead (or massive amounts of lighter materials), are effective shields for protection from gamma radiation.

Neutron radiation is high-energy neutral particles that can travel long distances in air and other materials. Neutron radiation presents the greatest hazard for external exposure and requires special shielding, usually made of light materials containing hydrogen.

Ionizing radiation arises from both natural and man-made sources, and can affect body organs and tissues. Health effects depend on the physical characteristics of the radiation as well as biological factors. Demonstrated health effects include the induction of cancer, genetic disorders, developmental abnormalities, such as mental retardation, and some degenerative diseases, such as cataracts. Information on potential hazards associated with radioactive materials used on-site should be requested from the SEMP manager and RSO. For real property acquisitions or lease executions, EPA should request this information from the current owner or operator.

Polychlorinated Biphenyls

PCBs belong to a broad family of organic chemicals known as chlorinated hydrocarbons. Virtually all PCBs in existence today have been synthetically manufactured. PCBs have been used in electrical equipment, hydraulic systems, and oil-filled heat transfer systems. PCBs are persistent and deleterious; once released into the environment they do not break down into harmless chemical substances. PCBs cause chloracne; a painful, disfiguring skin condition. Since evidence suggests the PCBs may also be carcinogenic and teratogenic (fetus damaging), EPA has determined that PCB contamination may pose a public health concern.

Asbestos

Asbestos is a naturally occurring, strong fibrous mineral used in more than 3,000 industrial applications, including heat insulation, sound insulation, and as fire retardants. Asbestos has been used extensively in building materials in the United States since the mid-1900s. As this use

increased, so did the incidence of asbestos-related diseases, such as asbestosis, lung cancer, and mesothelioma. Typically, these diseases take 10 to 40 years to appear after exposure to asbestos in the air.

Lead-Based Paint and Other Lead Sources

Many structures contain significant amounts of LBP and other lead sources that may pose an environmental health condition at the subject property. Other sources include lead piping and solder that may contribute to high lead content in drinking water. Lead has been associated with central nervous systems disorders, particularly among children and other sensitive populations. Exposure to lead is usually either through inhalation during renovations and demolition activities, or through direct ingestion of paint chips or lead-contaminated drinking water.

Pesticides

Pesticides are chemical products developed to eradicate a target species. Pesticides include insecticides, herbicides, rodenticides, fungicides, disinfectants, which have been developed to control insects, weeds, fungi, and rodents. Pesticides can significantly reduce agricultural crop losses and cause structural damage to property. However, because these materials are “designed poisons,” they pose a toxic health hazard to humans if they are misused, mismanaged, or improperly disposed. These chemicals are produced under many different trade names, varying widely in chemical composition, toxicity, and environmental effects. The most widely used pesticides share some common traits:

- C They tend to be chlorinated hydrocarbons
- C They tend to produce adverse health effects in humans, such as nerve damage, liver damage, and kidney failure
- C They tend to bioaccumulate, meaning that as plants and animals ingest these chemicals and are then ingested by other animals, the poisons accumulate up the food chain. Therefore, what starts out as a small, non-harmful release can accumulate into harmful doses to other organisms.

Sensitive Environmental Areas

Wetlands are areas that are temporarily or permanently inundated by surface water or groundwater and support vegetation adapted for life in saturated soil. Typically envisioned as marshy or swampy areas adjacent to coastal regions, wetlands also encompass areas that are far inland of tidal waters and may or may not appear to be marshy or swampy. Wetlands provide many benefits, including a habitat for a wide variety of wildlife; improvement in water quality; flood control stabilization of the shoreline; breeding, nursery, and feeding areas for commercial and recreational fish; and recreation such as hunting or fishing.

“Wild and scenic” rivers are recognized as possessing aesthetically pleasing benefits such as spectacular scenery, diverse fish and wildlife, good water quality, or recreational activities. Often, sections of a particular river may be designated as wild and scenic, while other sections may not.

Radon

Radon is a naturally occurring, invisible, odorless, tasteless, and radioactive gas. Radon can accumulate inside enclosed spaces to levels that pose risks to human health. Local regulatory files should be reviewed for the presence of radon in and around the area of the property under consideration for purchase, transfer, or closure.

Pre-Investigation Activities

The EDDP review team should prepare for the site investigation by reviewing any documents gathered during the record search and review process. Preparation should also include reviewing the completed preliminary questionnaire, and conducting the necessary interviews prior to the site visit. Pre-investigation telephone interviews are also helpful and should include the property owner, the facility manager, adjacent property owners, and state and local authorities. The facility manager, EDDP Project Manager, SEMP manager, and other program and regional representatives should be notified of the exact investigation date and invited to attend the in-briefing, the out-briefing, and walk-through.

Conducting the Phase I Investigation

The EDDP review team conducting the investigation should be aware of and have access to all documents and records obtained during the records search and review process, and should continue, as necessary, to obtain and review these records. Before conducting the site walk-through, the auditor should review the completed preliminary questionnaire, clarify ambiguous answers, and discuss issues presented in the questionnaire with the EDDP Project Manager, facility manager, SEMP manager, and the property owner. The EDDP review team must remain objective throughout the investigation, regardless of the nature of previous knowledge and information obtained during the pre-audit interviews and in the questionnaire. The investigation is intended to supplement, validate, and perhaps question the earlier Phase I activities and conclusions made from the records search and review. In addition, the EDDP review team should provide the participants with an in-briefing before the walk-through, and an out-briefing after the walk-through. During the walk-through, relevant facility employees should be interviewed, and the issues presented below should be evaluated.

The questionnaire on USTs/ASTs, in Appendix O, should be used as a guide for obtaining additional information on the USTs and ASTs. Other issues to be addressed during the walk-through are summarized below and are more fully outlined in Appendices E and J, the Records Search and Review, and the Primer on Environmental Issues discussions in this section. The issues include:

- C Former and current uses of the subject and adjacent property

- C Adjacent property characteristics such as zoning, future and past land use, and USTs
- C National Priority List (NPL) status of subject, adjacent, and nearby properties
- C Fuel leaks or releases of subject, adjacent, and nearby properties
- C Past or present permits, including air, NRC, NPDES, POTW, UST, and RCRA (hazardous waste TSDF)
- C Past or present surveys and inspections, including radon, radiological, asbestos, UST, LBP, and RCRA issues
- C Hazardous substances usage and releases, including disposal, injection, discharging, handling, and storage
- C Operating, closed, leaking, or inactive storage tanks
- C Radiological materials use, storage, research, and disposition
- C PCB-containing materials use, storage, research, and disposition
- C Asbestos-containing materials (ACM) use, storage, research, and disposition
- C Pesticide use, storage, research, and disposition.

RECORDS SEARCH AND REVIEW

A review of applicable documents and records will provide additional information on site activities and operations which may have caused environmental contamination. Information on contiguous and adjacent properties may also be reviewed to the extent practicable. The following subjects should be investigated and reviewed:

- C Site history, including ownership and use of the property and neighboring properties
- C Hazardous materials usage, releases, and USTs (plumbing, drainage, and runoff)
- C Environmental permits
- C Environmental surveys and audit reports
- C Hydrogeology and geology
- C Wetlands

- C Radioactive materials
- C PCBs
- C Asbestos
- C LBP
- C Indoor air
- C Laboratory operations, analyses, and experiments.

To assist in the records review, Table 3 is provided as a quick reference guide. These documents and records can be obtained from several sources (e.g., EPA, state, and private entities or organizations).

Table 3
Records and Information Sources

RECORDS AND INFORMATION	SOURCES
Site History - Ownership and Uses	• Title Search - local courthouse • AEREB • EPA Historian • Sanborne Fire Insurance (SFI) Maps • National Archives
Hazardous Materials and Storage Tanks	• State environmental agency • Local fire and health department • SHEMD audit reports • MSDSs • Emergency Planning and Community Right-to-Know Act (EPCRA) reports • Environmental plans and reports
National Priorities List	• RCRA, Superfund, EPCRA Hotline (1-800-424-9810) • EPA Regional Office • State environmental agency • Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
Hazardous Waste Accumulation, Storage, Treatment	• SEMP • Waste accumulation records • Manifests • EPCRA reports • Pollution prevention (P2) plans • State environmental agency • Local fire and health department • SHEMD audit reports • Spill Prevention, Control and Countermeasures (SPCC) plans • Resource Conservation and Recovery Information System (RCRIS)
Fuel Leaks	• State environmental agency • AEREB • SEMP manager • SHEMD • Facility manager
Environmental Permits	• Former occupants • Local authorities • EPA facility • EPA Regional Office • State environmental agency • AEREB • SHEMD • SEMP manager
SHEMD Audit Reports	• SEMP managers and SHEMD • EPA facility managers • Local authorities

RECORDS AND INFORMATION	SOURCES
Hydrogeology and Geology	• Site soil studies and groundwater test results • United States Department of Agriculture (USDA) • Aerial photographs • USGS • Local soil conservation district • Local county planning office • State water resources control board
Wetlands	• Town/county planning office • Wetlands Protection Hotline (800-832-7828) • County soil survey reports • Local soil conservation district office • National/State Wetland Inventory Maps • U.S. Army Corps of Engineers (USACE)
Aerial Photographs	• EPA facility • AEREB • Local colleges, universities or museums • Environmental Photographic Interpretation Center/Office of Research and Development (ORD)
Radiological Materials Use	• EPA facility • NRC • SHEMD audit reports • RSO
PCB Equipment and Use	• Facility manager, laboratory director, or service contractors • On-site PCB log or utility company (large transformers or capacitors only) • Equipment manufacturer • EPA regional office • Facility personnel (laboratory activities) • SHEMP manager • SHEMD audits
Asbestos	• Engineer/consultant asbestos reports • Building age • EPA facility manager • Asbestos operations and maintenance (O&M) plan • SHEMD audits • AEREB • SHEMP manager
Indoor Air	• State OSHA • County health department
Laboratory Operations, Analyses, and Experiments	• Facility manager or personnel

EPA and the states also have capabilities to perform searches and to provide documentation of the necessary records.

Site Assessment Report and Neighboring Properties

A review of applicable neighboring property records should be performed as is reasonably possible, warranted, and justified. The purpose of the neighboring property records search and review is to identify and research the uses of the property that may have adversely affected its environmental condition or that of the facility or laboratory property in question. It is expected that the neighboring property review effort will be limited in scope, and not as extensive as the facility's real property review.

The following environmental records may be obtained by an outside vendor who performs environmental database searches. These records can usually be consolidated into a special-order, facility-specific document called a site assessment report (SAR). The following records or databases should also be searched to the radii specified in parentheses (as measured to the nearest property boundary).

- C Federal NPL site list (1.0 mile)
- C Federal CERCLIS list (0.5 mile)*
- C Federal RCRA Corrective Actions Database (CORRACTS) TSDF list (EPA's database for RCRA corrective actions) (1.0 mile)
- C Federal RCRA non-CORRACTS TSDF list (0.5 mile)*
- C Federal RCRA generators list (subject property and adjoining properties)
- C Federal Emergency Response Notification System (ERNS) list (subject property only)
- C State lists of hazardous waste sites identified for investigation or remediation:
 - State-equivalent NPL (1.0 mile)*
 - State-equivalent CERCLIS (0.5 mile)*
- C State landfill or solid waste disposal site lists (0.5 mile)*
- C State LUST lists (0.5 mile)*
- C State registered UST lists (subject property and adjoining properties)

*These items indicate that the distances may be reduced at the discretion of the environmental professional performing the review.

All adjacent, nearby, and contiguous properties within a half- to one-mile radius from the facility border should be considered and evaluated during Phase I. The search radius may be left to the discretion of the environmental professional (i.e., EDDP Project Manager, facility manager, SHEMD manager, the EDDP review team). EPA's OGC may need to be consulted on issues regarding adjacent or neighboring properties; however, the following factors may be considered when evaluating adjacent, nearby, or contiguous property:

- C Population density of the setting where the facility is located (e.g., rural, urban, or suburban)
- C The distance that hazardous substances or petroleum products stored on site are likely to migrate based on local geologic or hydrogeologic conditions
- C Adjacent NPL or contaminated sites
- C Zoning and historical site use
- C Other reasonable factors.

Obtaining the SAR

To order the SAR, the EDDP review team will need to have the following items identified for the subject property:

- C Latitude and Longitude
- C Physical Address
- C Facility Map (confirming facility location)

Determining and Confirming the Latitude and Longitude

There are several ways to obtain the latitude and longitude of property, including contacting the facility manager, or using a global positioning system (GPS) receiver, the Internet, or a topographic map. The easiest way to obtain the latitude and longitude is by contacting the facility manager. The facility manager may be able to obtain the latitude and longitude from facility records, such as a RCRA permit or RCRA inspection reports. Another option is to use a GPS receiver located at the subject property; however, a GPS receiver may not always be available. The latitude and longitude can also be obtained from one of the numerous mapping services on the Internet. Typically, the latitude and longitude will be displayed after creating a custom map with the subject property's address. If these resources do not provide a latitude and longitude for the subject property, a 7.5-minute topographic map for the respective quadrangle can be used.

Topographic and other maps are available from any USGS Earth Science Information Center (ESIC), or any of the numerous commercial map dealers affiliated with the USGS. ESIC offers nationwide information and sales service for USGS products and publications on the web, as follows:

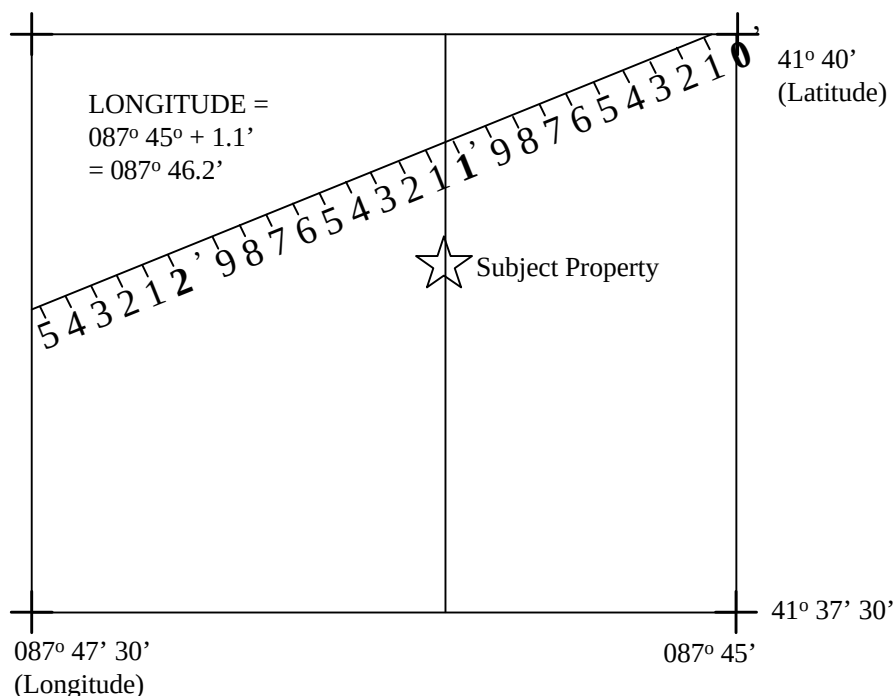
- C ESIC home page -- "<http://mapping.usgs.gov/esic/esic.html>"
- C ESIC locations -- "http://mapping.usgs.gov/esic/esic_index.html"
- C Instructions for ordering maps -- "http://mapping.usgs.gov/esic/to_order.html#map"

- C Frequently-asked questions -- "<http://mapping.usgs.gov/esic/esic4.html>"
- C State Geological Surveys -- "http://ngmdb.usgs.gov/Other_Resources/sgstopo.html"
- C Commercial map dealers -- "<http://mapping.usgs.gov/esic/usimage/dealers.html>"
- C Finding and Ordering Topographic Maps -- "<http://mapping.usgs.gov/mac/findmaps.html>"

Latitude. After obtaining the topographic map, simply draw a straight line across the center of the property from the left edge to the right edge of the map. Make sure the line is drawn parallel to the bottom edge of the map. This line will provide the latitude of the property as read from the latitude listed on both the left and right margin of the map. The latitudes are provided in 2 minutes, 30 seconds (2' 30") increments on the map. Most likely, the latitude will need to be extrapolated from the map.

Longitude. The longitude cannot be obtained in the same manner as the latitude because longitudinal lines are not parallel to each other like latitude lines. The distance between longitudinal lines vary from its greatest distance at the equator to zero at the Earth's North and South poles. Therefore, longitude is measured by "scaling the ruler" which consists of holding it at an angle between the longitude grid lines. An example of obtaining longitude from a topographic map is provided in Exhibit 4. To determine the longitude, locate the grid lines on the map that form a square around the subject property and pencil them in on the topographic map. Next draw a line from the top of the square to the bottom through the center of the property and parallel to the right or left side of the box (Line A). Next, use a 2.5-minute scale and align it from the upper right corner of the square to the opposite side of the square until the end of the scale

Exhibit 4
Example of Obtaining Longitude from a Topographic Map



touches the other side of the square. Read the number on the scale corresponding to the line drawn through the center of the property (approximately 1.1' in Exhibit 4). Now obtain the longitude by adding this reading (1.1' in the example) to the longitude of the right side of the box ($087^{\circ} 45'$ in the example). Therefore, the correct longitude in this example is $087^{\circ} 46.1'$.

Confirming the latitude and longitude with another resource is an important step that should not be overlooked. In particular, when ordering a SAR, the latitude and longitude of the subject property must be provided. The vendor, in turn, will provide a map plotting the respective latitude and longitude. Prior to confirming the order, the plotted location of the subject property must be verified. This can be done with the EDDP review team's knowledge of the subject property's physical address or by contacting the facility manager for confirmation.

Evaluating and Interpreting the SAR

When initially reviewing the SAR, the accuracy of the report should be confirmed. This is done by checking whether the SAR reflects the correct location for the subject and adjacent properties; the correct latitude and longitude; and consistency of EPA facility data with information obtained from interviews, site visit observations, and other records review. Before each SAR site is evaluated, the direction and depth of the groundwater flow in the immediate area of the subject property should be determined. Topography is another important factor to consider when evaluating the SAR sites relative to the subject property.

Each SAR provides a list of unmapped sites which need to be reviewed and evaluated. The general criteria for eliminating the unmapped sites from consideration as potential environmental threats to the subject property include those SAR sites which are:

- C Outside the radius criteria discussed earlier in this report and in ASTM's Phase I standard
- C Downgradient of the subject property
- C Over one mile away from the subject property.

If one of these general criteria are met, then the property should not pose an environmental threat. The location of unmapped sites needs to be determined using good judgement, available address information, knowledge of the area, and any other reasonable local resources, such as a local road map or persons familiar with the area.

Once the list of SAR sites are assimilated, the SAR site research objectives are to obtain the general status and information on the incident listed in the environmental records; to determine whether the SAR site and related incidents are likely to impact the subject property; and to confirm and explain all SAR listings for the subject property. The primary resource for general site status, incident information, and determining the likelihood of impacting the subject property is the appropriate federal and state regulatory authorities (i.e., Project Managers within the corresponding agency office, division, program, etc). Most of the information needed on the SAR site can be obtained through telephone conversations with regulatory authorities. The SAR sites having RCRA Corrective Action, state and federal NPL/CERCLIS, ERNS, and LUSTs listings require contacting regulatory authorities for more information. If the authorities are not available, then records at the site should be obtained and reviewed to achieve the SAR site research objectives. In addition to understanding the general status and information about the incidents, the list below provides suggested questions to determine the potential environmental impact to the subject property; however, the line of questioning should not be limited only to these suggestions.

- C Is there a contaminated plume migrating towards the subject property?
- C Is the plume likely to impact the general area of the subject property, or the subject property itself?
- C What actions are being taken to address the migrating contamination?
- C What actions are being taken to determine if a contaminated plume is migrating from off site towards the subject property?
- C What are the contaminants of concern and their detected concentrations?

When researching the neighboring SAR sites, it is recommended to maintain client confidentiality and anonymity, if possible. This can be done by generally indicating the direction of the subject

property from the SAR site, specifying only the nearest intersection and cross streets of the subject property.

Site History - Ownership and Use

A title search, SFI map review, and aerial photograph review will reveal previous owners or historical uses of the property. The general site history and property owners should be identified to determine historical property uses and activities. The search should date back to the property's obvious first developed use, or back to 1940, whichever is earlier.

Title Search

A title search should be performed and conducted at the local courthouse with the assistance of clerks or a person associated with the facility. The purpose of the title search and review is to identify and research previous owners, and any information that might affect the current environmental condition of the real property.

Sanborne Fire Insurance Maps

The SFI maps will identify the former uses of the property as well as previous property owners. By providing information on the actual property uses, the SFI map analysis may reveal the kinds of materials that could have been managed at the facility.

Aerial Photographs

If interpreted correctly, aerial photographs can provide useful information, on the basic historical uses, and in some cases, the environmental conditions at a property. The evaluation of aerial photographs can be used to document past activities, such as waste disposal practices (e.g., illegal dumping), fires, explosions, facility modifications, and environmental impacts. The review should be performed by an individual qualified and trained to interpret aerial photographs.

Aerial photographs are readily available for most areas of the United States from the 1930s to the present. In order to obtain useful aerial photographs, it is helpful to determine what dates need to be examined. Aerial photographs of EPA facilities and surrounding properties should be reviewed for the last 50 years to verify site activities and the activities at neighboring sites. To comply with this provision, it is helpful to obtain the earliest available aerial photograph. In addition, it is recommended that one aerial photograph from each decade be obtained or examined, if available. This will provide the reviewer with a snapshot of the site development or changes chronology.

To expedite the search for aerial photographs, it is necessary to obtain physical information on the subject property. This information should consist of the following:

C Physical street address

- C County or township
- C Latitude and longitude
- C Name of the corresponding 7.5-minute topographic map quadrangle
- C Year of facility construction

When viewing the aerial photographs, it is useful to have a street map available to correlate the location of the subject property with major roadways or other large physical features (e.g., lakes, rivers) visible in the photograph. Maps from most locations in the United States can be found by searching for mapping web sites on the Internet.

Aerial photographs can be found in a number of places. A good starting point for the aerial photograph search is local resources. Local resources often have the most relevant aerial photographs of the subject property and may limit the search of other resources. Typically, the EPA facility manager will have access to historical aerial photographs. Another valuable local resource is local government agencies, such as the Office of Land Records or Zoning Office.

The USGS has a very extensive collection of aerial photographs. At the Earth Resources Observation System (EROS) Data Center near Sioux Falls, South Dakota, the USGS maintains the National Land Remote Sensing Data Archive, including 49 million satellite images and over 8 million aerial photographs of the United States; some of them date to the 1940s. More recent products have been standardized under the National Aerial Photography Program (NAPP), providing photographs of the entire country every five to seven years since 1980. Products from USGS can be researched and ordered by contacting:

USGS EROS Data Center
Customer services
Sioux Falls, SD 57198
Phone: 605-594-6151
E-mail: custserv@edcmail.cr.usgs.gov

Another valuable commercial source for aerial photographs is the Internet. There are sites on the Internet that have extensive online atlases of high-resolution satellite imagery and aerial photography.

The aerial photographs come in various scales and sizes. A typical aerial photograph from the USGS NAPP is acquired at 20,000 feet above mean terrain with flight lines quarter quad-centered on the 1:24,000-scale USGS maps. NAPP photographs have an approximate scale of 1:40,000, and are flown in black-and-white or color infrared, depending on state or federal requirements. Typically, aerial photographs are obtained in an 8.5 x 11 inch format or similar size.

Again, detailed interpretation of the aerial photograph should be completed by an individual who is qualified and trained in this area.

Hazardous Materials Usage, Releases, and Underground Storage Tanks

In addition to the title search and review, past and present hazardous materials usage, and use and management of storage tanks (i.e., USTs and ASTs) should be identified. A variety of hazardous materials lists are available, and can be found in the following resources:

- ☐ CERCLA Hazardous Substances, 40 CFR §302.4
- ☐ EPCRA Extremely Hazardous Substances, 40 CFR Part 355 Table A
- ☐ EPCRA Toxic Chemicals, 40 CFR §372.65
- ☐ CAA Hazardous Air Pollutants (HAPs), 40 CFR Part 61
- RCRA Hazardous Wastes, 40 CFR Part 261
- ☐ UST Regulated Substances, 40 CFR Part 280

CERCLIS

The records search and review should include a review of CERCLIS, a computer database that contains information for each site on the NPL of Superfund sites. A CERCLIS review will determine whether the property is (or has been) on the NPL. Determination of the subject, adjacent, neighboring, or contiguous properties' NPL status will provide information on suspected soil, groundwater, and surface water contamination and relate this to an alternate source if activities are not responsible for, or are inconsistent with, the type of contamination found. Sources of CERCLIS information include the EPA regional office, the state environmental agency, SHEMD audit reports, the EPA RCRA, Superfund, EPCRA Hotline (800-424-9810) and the EPA CERCLIS Hotline (202-260-0056).

State Agency Site Lists

The state environmental agency should be contacted to determine whether there have been any petroleum or hazardous substance releases on the subject property, or on adjacent or contiguous properties. Many states maintain lists similar to those found on CERCLIS, and also maintain lists of sites with smaller petroleum or hazardous substance releases.

Local Fire District and Health Department

The records search and review should include a review of the local fire and health department records for information regarding hazardous materials usage at the property (e.g., releases or discharges), and any USTs located on the property. The local health department will also have information regarding radon detected in the area of the site, inspection records, and activities which may impact human health and the environment.

Facility Records

Past and present EPA hazardous materials inventories and waste management practices can be ascertained from facility records. Records of hazardous waste accumulation, storage, treatment, or disposal (e.g., waste accumulation and storage records and manifests) should be obtained from the SHEMP manager at the EPA facility, or the facility safety, health, and environmental manager for non-EPA facilities. Other environmental management plans and reports may be reviewed to determine hazardous materials usage and waste management information. These may include, but are not limited to, EPCRA and RCRA reports, SPCC plans, and P2 plans. Hazardous substance usage and storage quantities, and any reportable releases, must be accurately identified for compliance with federal and state requirements (e.g., 40 CFR Part 373). Appendices C and D, and the *Report Review and Interpretation* discussion in this section, provide more information on related regulatory requirements and notifications. For real property acquisitions, EPA should request copies of the facility's environmental records, including inspection and inventory logs, audits, manifests, management plans, and any other relevant information.

Environmental Permits

The former occupant's and facility environmental permits and inspection reports should be identified, obtained, and reviewed. If a complete set of permits or inspection records is not available from the facility, the state environmental agency or local authorities may be able to provide these records.

State Environmental Agency

All state environmental permits and inspection reports should be obtained and reviewed, including those for air quality, hazardous waste, industrial and domestic wastewaters, radioactive materials, and hazardous materials. Permits may identify potential sources of contamination or require specific closure requirements (e.g., RCRA, NRC).

Local Authorities

All local environmental permits and inspection reports should be obtained and reviewed. This includes those for both point source and non-point source discharges (e.g., POTW, sanitary sewer, and stormwater). Information included in permits and inspection reports will assist in determining the potential composition of the hazardous materials used, and whether there is cause for concern.

Environmental Surveys and Audit Reports

Environmental surveys will provide actual data on the suspected environmental conditions. Environmental audits conducted before or during EPA's occupancy should be reviewed for information on past or present environmental conditions, management practices, compliance status and any identified or suspected contamination or releases.

Facility Program Managers

The facility managers and EPA SHEMP managers are responsible for maintaining all information and records for safety, health, and environmental management and activities during EPA's occupancy of the facility. SHEMP managers also may be valuable resources for applicable surveys, audit reports, and other environmental information conducted prior to EPA's occupancy or conducted on adjacent properties. All environmental survey and audit reports performed and documented by the former occupants or EPA's facility management (e.g., USTs, lead paint, air quality, radiological, mercury, PCBs, and asbestos) should be reviewed to determine if these contaminants were or are present at the facility or adjacent properties.

SHEMD

EPA's SHEMD is responsible for safety, health, and environmental policy development and compliance oversight for EPA's facilities nationwide. SHEMD manages and conducts routine multimedia environmental audits at each facility. The SHEMD environmental audit reports should be reviewed to determine if there exists any outstanding or consistent findings that may indicate contamination. The final audit reports, maintained by the facility, will provide the facility's environmental audit information, findings, recommendations, and completed corrective actions.

Local Authorities

Local authorities, including the health department, the fire district, and state environmental agencies, may have conducted safety, health, or environmental surveys or audits of the facility. These documents should be reviewed to determine the environmental conditions relative to local codes and standards.

Hydrogeology and Geology

The hydrogeology and geology of a property should be investigated as part of the Phase I records search and review. The resources discussed below will assist in completing this review.

Site Soil and Groundwater Test Results

If the property has been in the commercial sector, an environmental due diligence audit (Phases I and II) may have been done in the past. If so, soil and groundwater studies may be available for review. The owner of the property should be contacted for a copy of these reports and test results to determine whether there is any suspected contamination.

United States Geological Survey

The USGS, in Reston, Virginia, maintains information on the soil characteristics and hydrogeology of a given area. A USGS 7.5-minute topographic map that includes the property should be obtained. This and other USGS information should be analyzed to determine the

groundwater depth and flow, topography, and the surface water flow. A phone list of USGS Offices is provided in Appendix J.

State Water Resources Control

The state water resources control board conducts groundwater and drinking water well surveys. These surveys should be reviewed to characterize and identify existing or formerly operated wells on the site.

United States Department of Agriculture and Local Authorities

The USDA generates soil survey reports on regional geology and soil types. The county planning office or the local soil conservation district produces county soil survey reports. These reports can be used to characterize the property's geology and soil.

Groundwater Flow and Depth

The purpose of this section is not to provide the average reader or EDDP Project Manager, facility manager, or SHEMP manager with information on how to model groundwater flow, but instead provide guidance on where to obtain regional and site-specific groundwater information. The groundwater characteristics of interest during the EDDP are the depth to groundwater and the direction of groundwater flow. When used in conjunction with the information contained in the SAR, the groundwater characteristics allow the EDDP review team to identify and isolate any adverse environmental impacts (e.g., chemical or fuel spills, leaking underground storage tanks) to the subject property from the activities of adjacent and neighboring properties.

There are a number of resources that are available to assist in determining the depth to groundwater and the direction of groundwater flow at the subject property. Some of the most useful resources (and perhaps the most difficult to obtain as they may not exist) are the site-specific environmental assessments on the subject property or any neighboring properties. These reports typically include a discussion of the local, and in some cases site-specific, hydrological conditions. The site investigation questionnaire referenced in these guidelines, and included in Appendix N, includes a question on whether any soil or groundwater studies have been performed on the subject property or adjacent properties; the facility manager or property owner may be able to provide this information. Another source that can lead to information on the hydrological conditions of the subject property is the SAR. The SAR should be reviewed to identify any neighboring LUST sites or spills (a more detailed discussion of the review and interpretation of the SAR can be found in *Evaluating and Interpreting the SAR* in this section of this document). If adjacent or neighboring sites are listed and are undergoing or have undergone any corrective action processes, environmental reports should be available for review from the state. These reports may take some time to obtain, depending on the state in which the subject property is located. In most cases, the state inspector responsible for investigating the LUST or spill can be contacted for more information.

Another valuable source of groundwater information at the regional level is the applicable State Geological Society or the Water Resources Division of the USGS. The USGS-Water Resources Internet site is <http://water.usgs.gov/>. The USGS Internet site provides a list of each state's USGS contacts. These resources may be able to assist in determining the regional influences on groundwater, and may be able to provide some information on the aquifer underlying the subject property. As groundwater flow is fairly specific to a particular site, the most credible information will be obtained from site-specific data.

The specific groundwater flow determination should be made by a hydrologist. For purposes of the EDDP however, some general groundwater flow information can be ascertained by the EDDP review team based on site-specific data and discussions with state hydrologists. Some very broad assumptions can be made about the possible direction of groundwater flow at the subject property. The assumptions are:

- C Groundwater, like surface water, flows 'downhill' in the direction determined by the slope of the water table
- C Nearby rivers can influence the direction of groundwater.

The water table can best be determined by well data from the subject property or neighboring properties. In a best case, the subject property will have several wells on-site with depth to groundwater data available. This data will provide the EDDP review team with the depth to the water table and, based on the first general assumption, the groundwater would flow from the higher water table elevations to the lower elevations. Groundwater flow is also influenced by the presence of nearby rivers. Groundwater will tend to flow subparallel to the river valley with a slight deviation toward the river. Again, this information is intended only to serve as a guide when reviewing the SAR to isolate contamination from neighboring sites that are clearly upgradient of the subject property. More detailed groundwater flow determinations are typically not needed for the Phase I EDDP, but should be examined to determine their availability.

Wetlands

All wetlands areas should be identified. In addition, all surface water retention ponds, stormwater management units, and surface impoundments or pits should also be identified. The use, contents, and characterization of these ponds, pits, or impoundments should be analyzed to determine if suspected contamination exists. Sources of wetlands information are discussed below and include the town/county planning or zoning office, the Wetlands Protection Hotline (800-832-7828), and the National Wetlands Inventory Maps (available from EPA regional offices).

Town/County Planning or Zoning Office

The local planning or zoning office is typically located at the city hall. This office should be contacted to determine whether the property is zoned for a particular use (e.g., wetland, sanctuary), and whether the property has any historical or recreational value. The county planning office or the local soil conservation district may be able to provide a copy of county soil survey

reports for the property; these reports may contain wetlands information. This information will be helpful in accurately characterizing the property's features and in determining the limitations of future land use and property transfer.

Wetlands Protection Hotline and National Wetland Inventory Maps

The Wetlands Protection Hotline and National Wetlands Inventory Maps should be used to determine and verify the existence and classification of wetlands on site or on adjacent properties.

Radioactive Materials

Past and present radioactive management practices should be reviewed to determine whether radioactive material handling, treatment, storage, and disposal activities may have caused contamination.

Facility and Program Personnel

The laboratory director, and current and former employees may be able to provide information related to radiological laboratory activities and materials uses (e.g., sampling, analysis, experiments, disposal).

Nuclear Regulatory Commission

The NRC or the facility should be able to provide information on the facility's radioactive materials license. A list of the four NRC regional offices and their phone numbers is provided in Appendix K. The NRC license, license conditions, and notice of violations should be obtained and reviewed to determine the nature and type of materials handled, stored, and disposed. 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, HVAC duct contamination, and potential contaminated environmental media (e.g., groundwater, surface water, soil). NRC licenses require monitoring and surveys to be conducted and maintained by the facility. These surveys should be reviewed to determine the potential levels and locations of radioactive contamination. The *Environmental Surveys and Audit Reports* discussion in this section provides a list of sources for this information.

PCBs

All PCB documentation should be gathered and reviewed, and PCB equipment and activities should be identified. The purpose of the PCB review is to determine whether any releases of PCB-containing materials have occurred, and to disclose any other PCB-related information which might affect the environmental condition of the facility.

Utility Transformer Records

The primary source for utility transformer records is facility personnel, and the facility's PCB logs. Under 40 CFR §761.180, facilities that use or store a total capacity of greater than 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. Other sources for additional records include the EPA regional office and utility company. A phone listing of EPA's Toxic Substances Control Act (TSCA) regional offices is provided in Appendix L. The facility manager also may have information related to the PCB-containing sources (e.g., electrical utilities) at the facility.

Facility and Program Personnel

The laboratory director, and current and former employees may be able to provide information related to PCB laboratory activities (e.g., sampling, analysis, experiments, disposal). Past and present PCB management practices for laboratory activities should be reviewed to determine whether PCB handling, treatment, storage, and disposal activities may have caused contamination.

Asbestos

Asbestos reports and inspections by engineers or consultants are conducted routinely for site assessment and regulatory purposes. Specifically, the facility manager may have had asbestos inspections performed for building repair, improvements, or construction activities. If these reports have been prepared, a copy should be obtained from the owner or operator of the facility. These reports should be reviewed to determine whether asbestos exists, where it exists, the levels present, and the abatement measures taken (if any). The O&M plan provides another source of information on asbestos. This plan should provide information on the location of asbestos within the facility and how this material is managed. Asbestos surveys are another source of information. The surveys should be maintained on site for buildings constructed before 1982. In general, buildings constructed before 1987 may contain asbestos. For EPA facilities, back-up copies may be available either with SHEMD or the EPA Regional Asbestos Coordinator's Office. A telephone list of EPA's Regional Asbestos Coordinator's Offices is provided in Appendix M.

Lead-Based Paint and Other Lead Sources

Any information on the application, presence, or removal of LBP should be obtained, assimilated, reviewed, and evaluated during the Phase I EDDP. Structures built before 1978 are more likely to have LBP than those constructed after 1978. Lead contained in paint, paint chips, or dust can pose health hazards if not managed properly, especially to pregnant women and children. The EDDP review team should evaluate the potential for site structures to contain LBP, and inspect building features or documentation to determine whether lead piping has been used. Post-1978 property transfer and lease arrangements generally will disclose LBP and other lead hazards.

Indoor Air

The state or federal OSHA, or county health department can provide information on any indoor air or other health-related complaints that might be associated with the property. The local SHEMP manager will have records of indoor air issues related to EPA facilities.

Laboratory Operations, Analyses, and Experiments

A general understanding of current and past laboratory operations should be developed to document the potential cleanup, deactivation, and decommissioning requirements. Past knowledge of and present laboratory and research activities, and hazardous substance usage and disposal practices will also help to determine the suspected areas and nature of hazardous and radioactive material contamination. Stationary and mobile equipment and surfaces, building systems, exterior and independent structures exposed to hazardous materials and contamination should be identified and documented. Airborne and direct contact exposure pathways should be considered when identifying the equipment and surfaces potentially contaminated. Additional information on equipment deactivation and decommissioning, and facility surveillance and monitoring is provided in Section 2 of this document.

PHASE I REPORT

After completing Phase I of the EDDP, all information collected should be summarized and documented in a Phase I report. A suggested outline of the report is provided in Table 4.

Report Development

The purpose of the Phase I report is to document the data gathered, and to present the results of the Phase I analysis. This report may be used to determine the need for and scope of Phase II. The report should be used as the basis for determining whether contamination is suspected and what activities under Phase II should be conducted, if any. The Phase I report should provide the back-up documentation including, but not limited to, inspection notes, facility-related reports, completed questionnaires, correspondence with state agencies, and site maps.

Table 4
Phase I Report Outline

1.0 Introduction 1.1 Purpose 1.2 Limitations and Exceptions of Assessment 2.0 Site Description 2.1 Location and Legal Description 2.2 Site and Vicinity Characteristics 2.3 Description of Structures, Roads, or Other Improvements on the Site 2.4 Site Rendering, Map, or Site Plan 3.0 Site Ownership and Use 3.1 Site Ownership 3.2 Site Use - Historic 3.3 Site Use - Current 3.4 Site Use - Intended Future Use and Zoning 3.5 Aerial Photographs 4.0 Site Reconnaissance and Interviews 4.1 Building 4.1.1 PCBs 4.1.2 Asbestos 4.1.3 Lead-based Paint 4.1.3 Indoor Air 4.1.5 Laboratory Equipment and Systems 4.1.6 Other Information 4.2 Site Grounds 4.2.1 Physical Setting 4.2.2 Storage Tanks 4.2.3 Waste Treatment or Disposal Systems 4.2.4 Indication of Solid Waste Disposal 4.2.5 Other Information 5.0 Adjacent and Neighboring Properties 5.1 Current and Past Uses (to the extent identified) 5.2 SAR Findings	6.0 Records Review 6.1 Federal Records 6.2 State Records 6.3 Local Records 6.4 EPA Facility Records 6.5 Property Owner Records (if applicable) 7.0 Hazardous Materials and Waste Management 7.1 Hazardous Waste Generation, Storage and Disposal Practices 7.2 Hazardous and Regulated Materials Management 7.3 Nonhazardous Waste Management 8.0 Radioactive Materials Management 9.0 Sensitive Environmental Areas 9.1 Wetlands 9.2 Historic Value 9.3 Recreational Land Use 10.0 Supplemental Information and Previous Studies 11.0 Conclusions and Recommendations APPENDICES C List of EDDP In-brief Participants C Site Diagrams, Floor Plans, and Maps • Photograph Worksheets and Aerial Photographs C Site Ownership Records • Site Assessment Report • Telephone Conversation Logs • EDDP Questionnaire C Past SHEMD Audits C Federal, State, Local, and EPA Facility Chemical Inventory and Material Safety Data Sheets
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Report Review and Interpretation

The Phase I report will be reviewed for correctness and completeness by all participants and a Phase I reviewer who meets the requirements stipulated in Appendix H. At a minimum, the report should be reviewed and approved by the responsible programs, the EDDP Project Manager, facility manager, SEMP manager, SHEMD, FMSD, OGC, program or regional office representatives, and any other relevant organization. The results of the Phase I, as contained in the Phase I report, shall be used as the basis for a decision on whether the facility is likely to be free from contamination, whether Phase II activities are warranted, or whether the potential for contamination is such that other actions should be considered. This decision is usually a collaborative effort between OA and the program and regional offices, with input or guidance from qualified and technical professionals; however, if a mutual agreement cannot be reached, the Director of OA will make the final decision.

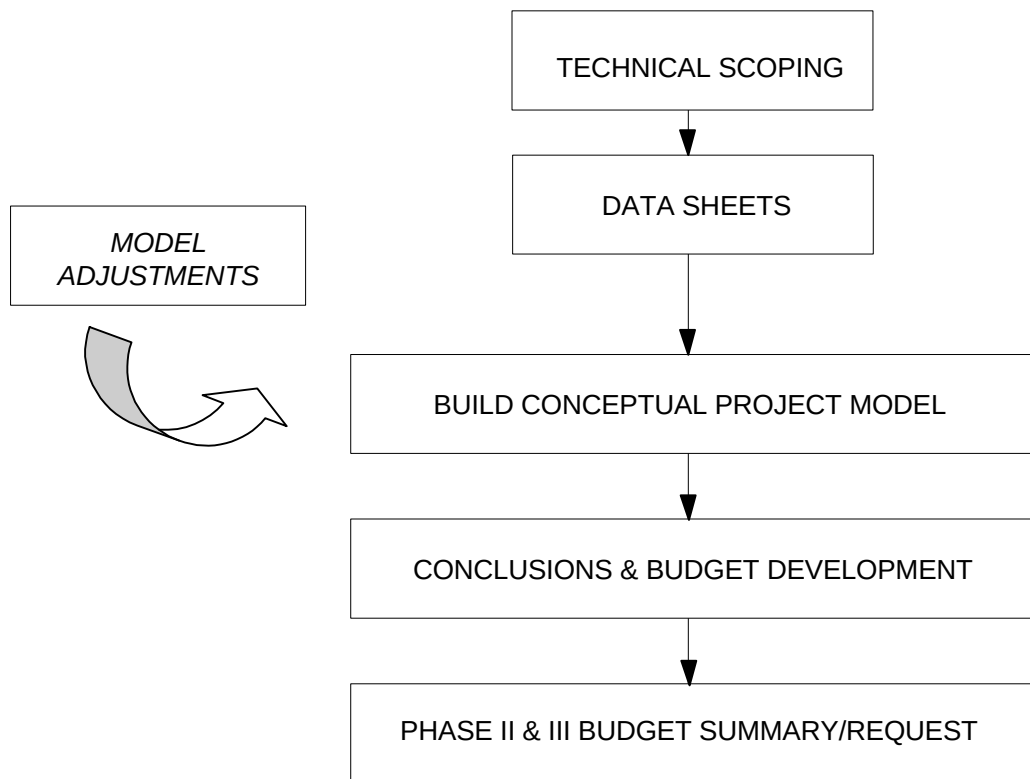
PHASE II and III COST ESTIMATING

As illustrated in Exhibit 5, the recommended approach to developing a cost estimate incorporates a methodology that is a composite of the best practices found in government and industry. This approach should be tailored to each evaluation and situation.

The major objective of this section is to present a methodology that can be applied in developing an accurate and reliable cost estimate for Phase II and III EDDP activities. Another objective is to ensure that EPA has all the financial information needed to understand and assess the implications of conducting Phases II and III. The steps used for this cost estimating process are presented below.

Although there are minor differences between the Phase II cost estimating methodology and that of the Phase III, the basic approach for both is the same. In Phase II, the cost estimating process places emphasis on data collection, but the main focus is on confirmatory sampling of potentially environmentally contaminated areas. The technical scoping for Phase III concentrates on the characterization, remediation, disposal and demobilization activities. The generic Phase II and Phase III cost estimating steps of the project are project planning/management, technical scoping, model building and conclusions/budget development.

Exhibit 5
Phase II and III Cost Estimating Methodology Approach



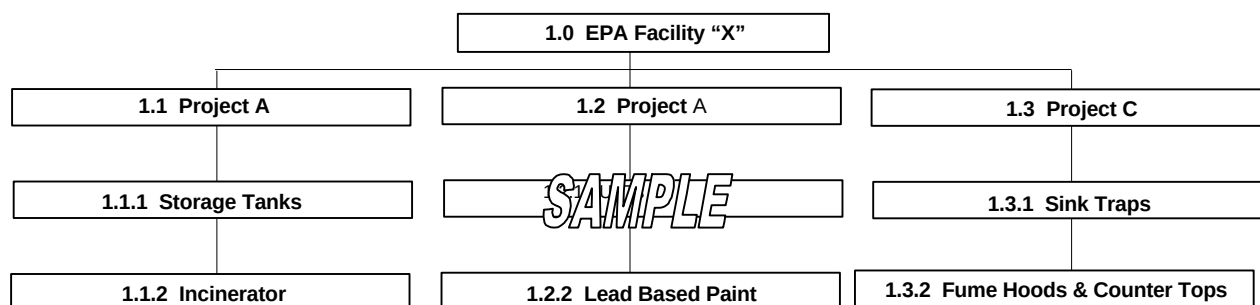
Project Planning and Management

Prior to conducting the actual cost estimating process, it is vital to review the historical data and reports. This provides an understanding of the activities that have been performed and may assist in the elimination of specific Phase II and Phase III projects. This process of elimination is to focus on only those projects that require a Phase II and Phase III review. The purpose of reviewing historical data and reports is to leverage information from earlier studies to reduce the possibility of repetition. While performing the documentation review, a potential project schedule should be created which will identify critical paths and relationships between projects.

Initially, the Phase I report should be reviewed to provide an understanding of the project plan and technical scope. The results of previous interviews, and reviews of documentation such as environmental compliance audits, provides key information. Upon gaining a complete understanding of the project status, it is vital to proceed further into the planning phase. This includes the creation of a draft project Work Breakdown Structure (WBS), development of a data collection tool (or data sheet), and scheduling the site visit and interviews. The WBS serves as a tool to help organize the projects and sub-projects by logically defining the scope and determining

the potential need for each of the activities that can occur in Phases II and III. The WBS ultimately aids in the development of the cost model structure. Exhibit 6 provides an example of a sample WBS.

Exhibit 6
Sample WBS



After completing a preliminary WBS and creating the data collection tool, it is determined whether a site visit is necessary. Depending on the amount of data present, this step may be eliminated. The purpose of the site visit is to examine potentially contaminated areas, and to conduct any follow-up interviews that may be necessary to further investigate the issues identified in Phase I. Extensive data gathering is conducted during the site visit to obtain sufficient information and technical parameters to develop an accurate and defensible cost estimate.

Technical Scoping

Technical scoping determines the activities and approach for conducting Phase II and III EDDP activities. Also, it is important to evaluate facility operations and processes as a part of the technical scope. This information serves as an indicator for the potential contaminants that may exist and which media may be contaminated. The purpose of holding discussions and conducting a thorough evaluation is to determine the extent of contamination and the need for remediation efforts. As a result of these investigations, certain areas or projects may be eliminated from or added for consideration in Phase II and III. This may also be considered as a process of prioritizing projects requiring further investigation. This elimination or addition process needs to be documented and justified to answer future questions regarding any potential inconsistencies with the report for the prior Phase, either I or II. The results of this process are subject to EPA approval and may also serve as a basis for understanding the likelihood of contamination and potential degree of the contamination. This understanding is needed to properly scope the Phase II cost estimate and may impact any Phase III estimates.

Data Sheets

Information on the technical scope of each Phase II and III project and subproject that is selected for review is compiled in a data sheet. This data collection tool is devised to collect information such as: the project and subproject descriptions; a brief summary of former reports (Phase I or II), relevant assumptions; applicable dimensions and physical descriptions, the media to be sampled or remediated; the type and number of samples to be collected; the laboratory analysis conducted and the remediation activities. Another key factor is understanding the level or personal protection equipment (PPE) that is required to conduct Phase II and III EDDP activities. After the data gathering step, the cost estimating team reviews the completed sheets to clarify any discrepancies. This review process is performed for each selected Phase II and III project.

Data Analysis

Following the extensive collection of site data, this information presented in the data sheets must be interpreted and analyzed. This analysis may include discussions with subject matter experts in areas such as laboratory operations, engineering, and regulatory compliance. The information assimilated from these discussions are used by the cost estimators for reviewing data to identify necessary areas of investigation, to further eliminate additional projects, to determine types of analysis required for those sites in question, and to estimate the potential size of the contamination.

Building a Conceptual Project Model

Using the information from the previous steps, a detailed cost estimate can be completed. This estimate will frequently include a cost model at the project and sub-project level. The cost model can be built using a number of tools. Two of the more common tools include *R.S. Means Environmental Restoration Cost Estimating Guides* and the *U.S. Air Force Remedial Action Cost Engineering & Requirements System (RACER)*. *R.S. Means* guides are generally used to build a detailed, bottoms-up cost estimate. *RACER* provides standardized estimated costs based upon costs for similar activities at other sites. As the basis for these costs in *RACER* are generally from Superfund sites, these costs are particularly appropriate in a highly regulated environment such as Superfund. In either case the costs may need to be adjusted for geographic location, level of PPE necessary, the applicable regulatory environment, and projected year of the start date. Assumptions for each project and sub-project should be documented. The assumptions range from caveats regarding unexpected findings to estimates of the efficiency of workers using several layers of PPE.

Because EPA's EDDP is usually based on volunteer and cooperative regulatory environment, thereby requiring a detailed, bottoms-up estimate, *R.S. Means* cost estimating guides can be used as a basis for estimating the potential costs of the Phase II and Phase III EDDP activities. As a result, some projected activities such as laboratory analyses can be directly estimated from standard costs. Alternatively, for other activities such as well drilling or excavation, each cost component needs to be assembled and cost developed for discrete activities at each site. For

example, Exhibit 7 presents a detailed, bottoms-up cost component for drilling a 15-foot deep, 8-inch diameter soil boring for the purposes of collecting soil samples.

Exhibit 7 Sample Cost Assembly

ASSEMBLIES FOR ESTIMATING PHASE II & III				
	Unit Cost	Unit	Quantity	Total Cost
Soil Drilling for 15' hole w/8" diameter				
33010101 Mobilize/Demobilize Drilling Rig & Crew	3308	Lump Sum	0.5	\$1,654.00
33020303 Organic Vapor Analyzer	184.3	Day	0.5	\$92.15
33170808 Decontaminate Rig, Augers, Screen	205	Day	0.5	\$102.67
33231101 Hollow-stem Auger	60.15	LF	15	\$902.25
33231106 Split Spoon Sample	46.67	Ea.	3	\$140.01
33231126 55 Gallon Drum for Drill Cuttings	65.19	Ea.	0.91	\$59.32
33170821 Decontamination Trailer	2120	Month	0.01666	\$35.32
Total				\$2,985.72

In addition to the detailed bottoms-up estimate, there are a number of general adjustments made when developing a cost estimate. These adjustments could include regional cost differentials, project oversight and program management, escalation, profit and contingency. The total cost of the project may be subject to a location multiplier, which is to cover the regional labor cost differentials. The escalation factor is based on the current Office of Management & Budget (OMB) Circulars. The profit and contingency are calculated by using the *R.S. Means* or are based on the industry standard. Additional costs resulting from contractor and federal oversight are also incorporated at this stage. The costs for site mobilization, sampling and analysis plan preparation, report preparation and federal oversight are also included and may increase proportionately.

Conclusions and Budget Development

For some cost estimates a range of costs may be appropriate. The ranges are based upon assumptions and scenarios such as worst case (high or most stringent assumptions), best case (low or minimal assumptions), and most reasonable case (middle or most likely assumptions). For the EDDP, the costs are built upon three scenarios, each having assumptions that drive differences in the sampling or remediation requirements. These assumptions are based upon varying levels of oversight that would be required either by the State or by the initial findings of contamination. The most reasonable case, which is the optimum and most representative cost, is typically (more commonly) used in the budget estimate. However, once three cost scenarios are developed, the responsible EPA program office representatives should determine the cost scenario that is most suitable and that they are most comfortable with for incorporation into their budget.

Additional information on funding and budget responsibilities are discussed in a May 29, 1996, Memorandum from EPA's Office of Administration Director, John C. Chamberlin, subject titled

Management Responsibility for Transferring EPA Real Property. This May 1996 memorandum is provided in Appendix F of these guidelines.

Finally, site-wide costs are generally split based on a dynamic percentage of on-site activity such as sampling, characterization and remediation. These site-wide costs include mobilization, oversight, independent verification, reporting, and health and safety.

5. PHASE II - CONFIRMATORY SAMPLING

INTRODUCTION

The purpose of the Phase II EDDP is to confirm the presence or absence of suspected contamination identified in the Phase I EDDP. This is accomplished by conducting confirmatory sampling of the potential areas of environmental concern identified in the Phase I EDDP to determine whether actual contamination exists. If contamination exists, Phase III EDDP activities are typically undertaken to fully characterize site contaminants, develop remedial approaches and cost estimates, and perform remediation or decontamination of contaminated areas. Phase III EDDP activities are discussed in more detail in the next section of these guidelines. However, if Phase II sampling determines that contamination does not exist, the EDDP is considered complete.

Phase II is a critical step in determining the actual environmental risks or liabilities associated with the subject property and infrastructure, and the costs of potential Phase III activities. However, there are instances when Phase II EDDP activities are not conducted because the extent of contamination is already known and documented, or can reasonably be assumed. In these cases, EDDP activities are streamlined and sequenced so that activities flow directly from Phase I to Phase III.

EPA will be acting in a management and oversight role during Phase II EDDP activities. The actual work will be performed by a qualified architecture and engineering (A&E) firm. Therefore, the focus of this section of the guidelines is to provide EPA managers with the institutional knowledge and resources to properly manage Phase II EDDP activities from inception to completion. It is important to note that the majority of Phase II EDDP activities will be performed by EPA when vacating leased or owned property. Only in rare instances will EPA decide to perform Phase II EDDP activities prior to acquiring, inheriting, or leasing new property. Therefore, the information in this section of the guidelines is primarily written from a property disposal perspective.

To ensure a smooth transition from Phase I to Phase II EDDP activities it is paramount that EPA EDDP managers be familiar with the findings and recommendations in the Phase I EDDP report, the *ASTM Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process* (E 1903-97), and federal, state and local environmental requirements. This information should be used as a roadmap for planning and implementing Phase II EDDP activities. It is also important that EPA EDDP managers concurrently evaluate financial, legal, National Environmental Policy Act (NEPA), operational, occupancy and vacancy, political, and real estate considerations throughout the process, so EDDP decisions are not made in a vacuum. Therefore, the EPA EDDP Project Manager must work hand-in-hand with other internal program and regional offices to ensure these considerations are incorporated into the overall process.

The Phase II EDDP guidelines are general and are intended to provide EPA EDDP managers with a basic understanding of the breadth and depth of activities performed in this phase. Site specific

conditions, past and current tenants and their operations, and the physical condition of the infrastructure (e.g., buildings, equipment, tanks, HVAC systems, fume hoods, generators) may result in additional steps or considerations. This decision will be made by EPA EDDP managers, and the relevant program and regional offices at the time Phase II EDDP planning activities are initiated by Regional, Program, or Headquarters staff.

There are three steps in the Phase II process that EPA EDDP managers need to consider, including the planning step, implementation step, and closeout step. A detailed discussion of each of these steps is provided below.

PLANNING STEP

The planning step is the most challenging and important step in the process. It establishes the foundation on which EPA will progress with the project from inception through completion. Several activities are conducted in this step, including:

- Establishing EPA's roles and responsibilities for the project
 - Coordinating and communicating with internal EPA program and regional offices, facility and SHEMP managers, property managers and owners, GSA, oversight and A&E contractors, and regulators
 - Reviewing and evaluating the findings and recommendations in the Phase I EDDP report
 - Reviewing and validating cost estimates for Phase II EDDP activities
 - Complying with and conforming to the Phase II ASTM standard, and federal, state and local environmental requirements
 - Discussing data quality objectives (DQO) and quality assurance/quality control (QA/QC) procedures for Phase II EDDP activities
 - Developing technical and programmatic documents
 - Selecting oversight and A&E contractors
 - Establishing field oversight policies and protocols
 - Assessing the potential impacts of Phase II EDDP activities on facility operations and the physical site conditions
- C Managing and disposing of investigation-derived waste (IDW)
- C Ensuring contractors, regulators, and external organizations have access to the property.

Further information on each of these activities is provided in the following subsections.

EPA's Roles and Responsibilities

EPA's roles and responsibilities during the planning stages of Phase II EDDP activities will involve leading and partnering with internal and external organizations to streamline the process. Internal organizations include program offices, regional offices, and headquarters. External organizations include GSA, property owners and managers, state and local regulators, and contractors. The critical decision in establishing EPA's roles and responsibilities is to identify the EDDP Project Manager and lead representatives for the relevant program offices, regional offices, and Headquarters. This is a collaborative decision that is made by EPA's Senior Managers in the relevant program, regional, and Headquarters offices. The EDDP Project Manager and lead representatives work directly with EPA's Senior Managers to lead, plan, organize, implement, and complete all facets of Phase II EDDP activities.

Coordination and Communication with Internal EPA Program Offices, Property Managers and Owners, GSA, Oversight and A&E Contractors, and Regulators

The EDDP Project Manager and lead representatives will coordinate efforts with internal offices, property managers and owners, GSA, contractors, and the regulators. The coordination and communications with these organizations is critical to the success of the project. Specifically, the EPA EDDP Project Manager will interact with these organizations to ensure potential conflicts of interest are avoided, confidentiality is maintained, and relevant information is shared openly across the spectrum of projects and activities. For example, coordination and communications with internal organizations will involve administrative, legal, real estate, logistical, regulatory, cost, and technical aspects of the project. Conversely, coordination and communications with the property managers and owners will solely involve real estate issues. As a result of this dynamic environment, EPA's ability to build and nurture relationships with these internal and external organizations is critical to the success of the project. Therefore, EPA must strive to establish strong and trusting relationships through its actions, open communications, and proactive attitudes.

Evaluating Findings and Recommendations

The Phase I EDDP report is used as the roadmap to plan and perform Phase II and III EDDP activities. The most important aspect of this process is reviewing and evaluating the findings and recommendations to determine a course of action for post Phase I EDDP activities. EPA should perform a thorough review to validate these findings and recommendations to ensure potential areas of environmental concern identified in the report are legitimate. Specifically, EPA needs to review the potential contaminants of concern, as well as the potentially contaminated media (i.e., air, water, land, buildings, equipment, infrastructure, etc.) to determine whether it warrants further investigation. In addition, EPA should not lose sight of the fact that unanticipated events (i.e., accidents, chemical spills, fires, etc.), changing conditions, or new information could surface that may require the Agency to develop an addendum to the Phase I EDDP report.

Validating Cost Estimates

Another important aspect of the Phase II EDDP planning activities is reviewing and validating the cost estimates for confirmatory sampling. The cost estimates are developed after completion of the Phase I EDDP report to provide EPA with an order of magnitude on the costs of Phase II and III EDDP activities. EPA uses these cost estimates in developing their budget submission to Congress, and as a planning tool for streamlining Phase II EDDP activities. During this part of the planning process, EPA needs to closely review and validate the technical scoping sheets, associated assumptions, and cost worksheets on each project area to ensure the order of magnitude cost estimates are accurate, defensible, and reflect the latest information. Any revisions to the technical scoping sheets, assumptions, and/or cost worksheets needs to be documented before EPA negotiates Phase II EDDP costs with the A&E contractor performing the work.

Compliance with Environmental Requirements

ASTM's *Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process, E 1903 - 97* (or most recent version), should be used by EPA as a reference when planning Phase II EDDP activities. This standard provides good commercial and customary practices for appropriate inquiries into potential areas of environmental concern identified during the Phase I EDDP. However, the standard does not address business judgments regarding Phase II EDDP activities. It is important to note that Phase II EDDP activities cannot eliminate all uncertainty associated with the subject property. Therefore, professional judgment and interpretation are inherent to the Phase II process. In addition to the ASTM standard, EPA must adhere to the federal, state and local environmental requirements. The applicability of federal, state, and local environmental requirements are dictated by site-specific factors, such as location, conditions and operations, existing permits and licenses, potential contaminants of concern, and affected environmental media. Based on these factors, EPA will need to work closely with federal, state and local environmental representatives to ensure all requirements are addressed throughout Phase II EDDP activities.

Data Quality Objectives and QA/QC Procedures

DQOs are an extremely important part of the Phase II EDDP planning process. DQOs are both quantitative and qualitative statements used to assist managers in clarifying study objectives, defining the appropriate type of data, and specifying tolerable levels of potential decision errors needed to support critical project decisions. EPA has developed a seven step DQO process to organize, compile, evaluate, and manage environmental data to achieve desired results. These seven steps are highlighted below:

- C **State the problem** - define the problem; identify the planning team; examine the budget and schedule
- C **Identify the decision** - state the decision; identify the study questions; define alternative actions

- C **Identify all inputs to the decision** - identify information needed for the decision (information sources, basis for action levels, sampling and analysis methods)
- C **Define the boundaries of the study** - specify sample characteristics; define spatial and temporal limits, and units of decision making
- C **Develop a decision rule** - define statistical parameters; specify action levels; develop the logic for action
- C **Specify tolerable limits on decision errors** - set acceptable limits for decision errors relative to consequences (i.e., health effects, costs, risks)
- C **Optimize the design for obtaining data** - select a resource-effective sampling and analysis plan that meets the performance criteria.

The EDDP Project Manager should work closely with the Project Quality Manager to ensure DQOs satisfy regulatory requirements, and strike a balance between common sense, good judgment, and cost-effectiveness.

EPA also needs to ensure that QA/QC procedures are implemented, documented, and communicated to all relevant organizations performing work on the project. This can be accomplished through developing a Quality Management Plan (QMP). The QMP will document how EPA structures its quality system, describes its quality policies and procedures, criteria for and areas of application, and roles, responsibilities, and authorities. A strong QMP will minimize or eliminate the possibility of invalid data, data errors, indefensible data, or inconsistencies with data collection, analysis, and evaluation. The EDDP Project Manager and Quality Manager should work in tandem to develop the QMP.

Developing Technical and Programmatic Documents

EPA will need to develop a number of technical and programmatic documents during the planning process of the Phase II EDDP activities to streamline the administrative, contracting, and technical requirements associated with the project. The technical documents may include contracts, Memoranda of Agreements (MOAs) or Memoranda of Understandings (MOUs), Interagency Agreements (IAGs), and statements of work (SOWs). The programmatic documents may include a project management plan (PMP), a communications plan, and QMP.

These documents will be used as roadmaps by EPA in the planning and implementation of Phase II EDDP activities. Therefore, it is paramount that EPA complete these documents as early in the planning process as possible.

Selecting Oversight and A&E Contractors

Another key element of the Phase II EDDP planning activities is selecting an oversight contractor, as well as an A&E contractor. The oversight contractor will assist EPA in providing

programmatic and strategic support, and technical assistance; therefore, the oversight contractor needs to be knowledgeable of EPA's programs as well as the due diligence process. The oversight contractor will typically provide EPA with the following services:

- C Programmatic and strategic planning and implementation
- C Technical support and assistance
- C Project management and oversight
- C General support.

Before selecting the oversight contractor, EPA should ensure the contractor is familiar with ASTM's Phase II standard, federal, state and local environmental requirements, sampling protocols and procedures, EPA's facilities, and due diligence processes. Appendix P provides a list of qualifications for Phase II EDDP contractors.

The A&E contractor, on behalf of EPA, will perform the confirmatory sampling on the potential areas of environmental concern identified in the Phase I EDDP report. The contractor will need to possess extensive experience and institutional knowledge of field and laboratory sampling activities and protocols related to various media including, but not limited to, soil, sludge, water, groundwater, concrete, chemicals, waste, fumehoods, tanks, infrastructures and buildings, and equipment. The A&E contractor also will need to be knowledgeable of ASTM's Phase II standard, federal, state and local environmental requirements, and best management practices (BMPs). The A&E contractor will typically provide EPA with the following services:

- C Development of programmatic and technical documents
- C Phase II EDDP sampling and analysis
- C Evaluation and interpretation of the sampling results
- C Phase II documentation.

Before selecting the A&E contractor, EPA should ensure the contractor is familiar with ASTM's Phase II standard, federal, state and local environmental requirements, sampling protocols and procedures, EPA's facilities, and due diligence processes.

Establishing Field Oversight Policies and Procedures

Another important aspect of the Phase II planning process is the establishment of field oversight policies and procedures. The field oversight policies need to focus on the health and safety of EPA's employees and contractors, and consider the potential hazards that exist and the specific activities being performed by the A&E contractor. The policies must also achieve the overall goals and objectives of the project, delineate roles and responsibilities, incorporate standards and

guidelines, and provide documentation and reporting requirements. The procedures need to provide EPA employees and oversight contractors with guidance for performing Phase II field oversight activities. These activities include observing sampling activities, record keeping (i.e., use of log books), and assessing conformance with contracts, IAGs, MOAs, MOUs, SOWs, sampling and analysis plans, and health and safety plans.

Assessing the Potential Impacts of Phase II EDDP Activities

EPA must assess the potential impacts of Phase II EDDP activities on facility operations and the physical site conditions so that disruptions to operations can be minimized through proper planning. Since confirmatory sampling may be required both internally within buildings and externally on the subject property, EPA will need to work closely with the facility manager, SHEMP manager, program or regional offices, and property managers and owners to ensure impacts to facility operations and physical site conditions are minimized. Therefore, EPA should make it a priority to establish a schedule of events as soon as possible, so all affected parties can minimize disruptions to operations.

Management and Disposition of IDW

Another aspect of the Phase II EDDP planning process is the management and disposition of IDW. EPA should work closely with the site Safety, Health, and Environmental Management Office to identify and follow existing policies and requirements related to waste management. In addition, EPA needs to decide whether to manage the IDW internally or require the A&E contractor to manage it independently. The main point is that EPA needs to ensure that IDW is managed and disposed of in accordance with federal, state and local environmental requirements, as well as internal waste management policies.

Access to the Property

The last activity that needs to be performed by EPA during the Phase II EDDP planning process is ensuring that access to the property is granted to contractors, regulators, and other external organizations. Because EPA's properties are restricted, it is important that all relevant contractors, regulators, and other external organizations have access to those areas of the subject property where sampling will occur. To accomplish this EPA will need to work closely with security to ensure the external organizations obtain the appropriate identification badges for their personnel prior to initiating work. Advanced planning will ensure work crews are not delayed during mobilization and on-site operations due to accessibility problems.

IMPLEMENTATION STEP

The implementation part of the Phase II EDDP activities involves performing the sampling and field work, conducting laboratory analyses, and assimilating, organizing, reviewing, and evaluating the results of the sampling. This step involves the following activities:

- C Reviewing, commenting, and approving programmatic and technical documents developed by the A&E contractor
- C Providing oversight and management of the field work
- C Reviewing and evaluating the sampling results, and developing findings and recommendations
- C Conducting periodic meetings with internal EPA program offices, property managers and owners, GSA, and regulators on Phase II activities.

Further information on each of these activities is provided in the following subsections.

Reviewing Programmatic and Technical Documents

The first order of business during the Phase II EDDP implementation step is to review, comment, and approve the programmatic and technical documents developed by the A&E contractor. The programmatic documents consist of the QMP, quality assurance project plan (QAPP), and the site safety and health plan (SSHP). The QMP will document how the A&E contractor will plan, implement, and assess the effectiveness of its quality assurance and quality control operations for EPA's EDDP; it shall also adhere to EPA's Interim Final Requirements for Quality Management Plans (EPA QA/R-2). The QAPP will serve as a tool to document the type and quality of data needed for environmental decisions. It will describe the methods for collecting and assessing the data, and shall adhere to EPA's Interim Final Requirements for QAPP (EPA QA/R-5). The SSHP will identify all known and suspected hazards which may be encountered during EDDP; it will contain methods that will be implemented to mitigate all safety hazards, and shall adhere to all applicable OSHA standards, including 29 CFR Part 1910 (General Industry Standards) and 29 CFR Part 1926 (Construction Safety).

The technical documents consist of the technical work plans, cost estimates, schedules, preliminary findings, and both draft and final reports. The technical work plan is typically referred to as the Sampling and Analysis Plan (SAP), which will present the sampling strategy and planned Phase II activities. The SAP will detail the following:

- C Location
- C Amount and types of samples to be collected as well as the sampling methodology
- C Constituents of concern and the laboratory analytical methods to be used
- C Established regulatory action levels.

In the absence of established regulatory action levels, it is advisable that site-specific action levels be identified in the SAP, if possible.

Prior to EPA's approval of the SAP, EPA and the oversight contractor will need to evaluate the technical approach to determine if the planned activities will accomplish EPA's sampling objectives. As part of this evaluation, it is important to consider the potential results achieved during the planned Phase II sampling activities. Considerations may include:

- C Sampling results are below established action levels or are below method detection levels - *Will the planned sampling provide sufficient data to support No Further Action and conclude the EDDP?*
- C Sampling results are above established action levels - *Will the results provide sufficient information to confirm or invalidate assumptions made during the planning process? Will the results provide sufficient data to determine and assess appropriate next steps?*

Considering the potential outcomes of the planned Phase II sampling activities is a critical step in determining if the SAP is responsive to the objectives of the EDDP project.

The cost estimates and schedules will reflect the planned activities as described in the approved SAP, and the work performed and associated findings will be detailed in the draft and final Phase II reports. EPA should work closely with the A&E and oversight contractors to develop a realistic schedule for reviewing, commenting and approving all programmatic and technical documents. It is paramount that the documents be thorough and conform to current EPA guidelines and requirements, federal, state and local environmental requirements, the Phase II ASTM standard, and BMPs, while remaining responsive to the project objectives.

Oversight and Management of Field Work

EPA will be acting strictly in an oversight role during Phase II sampling activities. The oversight contractor will serve as the primary liaison between the A&E contractor and EPA. Therefore, the oversight contractor will need to follow the direction and guidance of EPA in terms of providing oversight of the sampling. The oversight contractor will need to be knowledgeable of sampling and laboratory analysis methodologies, general and site-specific health and safety, the background of the project area, potential constituents of concern, and standard operating procedures for environmental investigation. Effective oversight of Phase II activities will assist EPA in thoroughly understanding the sampling results and variables, reducing uncertainty in the interpretation of results, and determining appropriate next steps.

Some of the oversight activities include comparing the A&E contractor's physical activities to the programmatic and technical documents, observing and documenting sampling procedures, and documenting any discrepancies in a log book. It is important to note that EPA should address any discrepancies or concerns with the A&E contractor as soon as possible to prevent unanticipated problems or additional costs.

Reviewing and Evaluating Sampling Results and Developing Findings and Recommendations

Reviewing and evaluating sampling results, and developing findings and recommendations, is the most important part of the Phase II implementation process. This is the point at which the decision is made regarding no further action or recommendations for Phase III EDDP activities. EPA will need to work closely with the A&E and oversight contractors to thoroughly understand the sampling results and its impact on future work. Specifically, EPA will need to evaluate the sampling results considering the following factors:

- C Compliance with environmental regulations and requirements, and conformance to the ASTM standards and the SAP - *Was the work performed as planned? If there were deviations, were they valid?*
- C Confidence in representative results - *Do the sampling results provide adequate information to make reasonable conclusions and develop next steps? Do the sampling results validate assumptions made during the planning process?*
- C Risks to human health and the environment and liabilities associated with the property - *Do the results indicate an immediate threat to human health and the environment? Do the results identify property liabilities?*

EPA will need to consider each of these factors both independently and jointly before developing formal findings and recommendations regarding the next steps in the EDDP.

Conducting Periodic Meetings

EPA will need to meet with internal program offices, property managers and owners, GSA, and regulators on a regular basis to keep them informed on the status of Phase II EDDP activities. The EDDP Project Manager will lead, manage, and facilitate these meetings. The meetings are an excellent opportunity to develop strong partnerships, build consensus and confidence in the project, and resolve critical and administrative issues.

The issues discussed in these periodic meetings must be tailored to the role of each involved party, but will typically involve some or all of the following: the technical approach, identified property liabilities, deviations from technical or programmatic documents, project costs and budgets, recommendations, issues or concerns, next steps, and schedule. Various factors, including the size and scope of the project, site-specific conditions, and existing relationships, will dictate the periodicity of the meetings. It is critical that all correspondence regarding the EDDP, particularly correspondence between EPA and regulators and between EPA and non-EPA property managers and owners, be appropriately documented and retained by the EDDP Project Manager.

CLOSEOUT STEP

The closeout is the last step in the Phase II process. In this step, EPA managers need to ensure proper documentation on each sampling event has been completed so the Agency can make informed decisions regarding Phase III EDDP activities or no further action. The activities performed under this step include:

- C Developing the Phase II EDDP report based on the sampling results
- C Revising Phase III independent cost estimates based on the Phase II sampling results
- C Shipping the IDW off site to an authorized waste hauler and permitted disposal facility
- C Discussing the results of the Phase II EDDP activities with internal EPA program offices, property managers and owners, GSA, regulators, and other relevant stakeholders.

Further information on each of these activities is provided in the following subsections.

Developing the Phase II EDDP Report

The purpose of the Phase II EDDP report is to document the results of the Phase II activities. The report should be consistent with ASTM's Phase II standard, including:

- C Background information and description of the site, site history, physical setting, and adjacent property land use (i.e., results of the Phase I)
- C Descriptions of Phase II activities including the scope of assessment, field explorations and methods, and sampling and chemical analysis
- C Evaluation and presentation of results obtained during sampling and field activities and data from laboratory analysis
- C Discussion of findings and conclusions
- C Recommendations (if appropriate).

The Phase II report will assist EPA managers in understanding the actual presence of site contaminants, and determine the need to conduct Phase III EDDP activities or take no further action.

It is important that a distinction be made between findings, conclusions, and recommendations. Findings and conclusions reflect a factual and scientific account of activities performed, the results of the sampling efforts, and comparing the results to established action levels. It also may include the conclusion that additional work is required. Recommendations are not normally an

appropriate part of the Phase II report; therefore, if Phase III EDDP activities are required, it is advised that these recommendations be presented in a separate report. An example of what is and is not appropriate in the Phase II report is provided below.

FINDINGS AND CONCLUSIONS V. RECOMMENDATIONS

<i>APPROPRIATE</i>	<i>NOT APPROPRIATE</i>
<i>“...results indicate soil samples XYZ were above regulatory action levels.”</i>	<i>“...results indicate soil samples XYZ were above regulatory action levels and will require excavation.”</i>

EPA senior managers, EPA SHEMD and FMDS managers, EPA program and regional representatives and other involved parties must be briefed on the findings and conclusions included in the Phase II report. Their review must:

- C Evaluate the accuracy of the conclusions relative to the data gathered
- C Determine whether the investigation was carried out in accordance with the SAP, and comprehend the basis and impacts of any deviations
- C Ensure consistency between field samples and QA/QC samples
- C Evaluate the field data against the appropriate and relevant criteria (i.e., regulations)
- C Approve or concur with the conclusions in the Phase II report.

A typical outline for a Phase II report is provided in Table 5 at the end of this section.

Revising the Phase III Independent Cost Estimates

Generally, Phase III independent cost estimates would have been developed for planning and budgeting purposes prior to the commencement of Phase II EDDP activities. Once the results of the Phase II are obtained and recommendations for further work have been developed, the Phase III independent cost estimates will have to be revised to reflect the updated information.

Shipping the IDW Off Site

Appropriate waste handling and disposal is critical to reducing EPA's long-term liabilities, particularly when hazardous waste is involved. The EPA is liable for any improper handling, storage, or disposal of EDDP-wastes, even when performed by non-EPA personnel.

It is at the discretion of the EDDP Project Manager whether EDDP-generated wastes will be managed by the EPA under existing waste management procedures at an existing EPA facility, or

if the wastes will be managed by the A&E contractor. If the wastes are managed by the contractor, it is critical that EPA be involved in and approve the procedures for handling, storage, transportation, and disposal of all EDDP-generated wastes. This involvement should include the review and approval of all waste management documents (e.g., waste profiles, manifests) prior to submittal to any regulatory agency or disposal contractor. The Environmental, Safety, and Health Office or SHEMD can provide the EDDP Project Manager guidance and assistance in establishing, reviewing, and approving appropriate waste storage, handling, and disposal procedures and paperwork.

The contractor should be encouraged to utilize techniques that minimize the generation of wastes whenever feasible, and consistent with the project objectives and applicable regulatory requirements.

Discussing the Results of the Phase II

Upon completion of the Phase II, the EDDP Project Manager and lead representatives will coordinate the presentation and discussion of the results of the Phase II with internal program and regional offices, property managers and owners, GSA, regulators, and other relevant stakeholders. It may be appropriate that copies of the draft Phase II report be provided to EPA program and regional offices for review and comment. Only the final report should be provided to property managers and owners, GSA, regulators, and other relevant stakeholders. It is important that the EDDP Project Manager identify the expected role and level of authority of each stakeholder when discussing Phase II results. Regulators should be given the opportunity to comment and participate in developing appropriate next steps, while other stakeholders may have less of a role in the decision-making process.

After the closeout step is completed, EPA managers will be able to develop the SOW, level of effort (LOE), costs, and schedule for performing Phase III EDDP activities and the IV&V requirements. This information will be very useful in addressing other property transfer-related activities, including leasing and legal issues, occupancy and vacancy planning and implementation, and operations shutdown.

Table 5
Sample Phase II Report Outline

1.0 Executive Summary 1.1 Purpose 1.2 Limitations and Exceptions of Assessment 1.3 Summary of Known Information Findings of Phase I Assessment 1.4 Scope of Investigation 2.0 Site Map/Building Plans 3.0 Likely Sources of Contamination 3.1 Likely Sources of Contamination 3.2 Location of Likely Sources 3.3 Approximate Date/Type/Quantity of Release 4.0 Soil Sampling and Analysis 4.1 Sampling Overview 4.1.1 Types of Samples 4.1.2 Location of Samples 4.1.3 Sampling Objective and Justification 4.1.4 Analytical Parameters Including Justification 4.2 Sampling Methods 4.2.1 Sampling Methods and Procedures 4.2.2 Boring Logs 4.2.3 Field Screening Data 4.3 Analytical Methods 4.3.1 Analytical Parameters Including EPA Method Number and Detection Limit 4.3.2 Maps and Diagrams Showing the Extent of Contamination 4.4 Results 4.4.1 Data Presentation Including Tables 4.4.2 Notation of Results Above Applicable Standards 4.4.3 Maps and Diagrams Showing the Extent of Contamination	5.0 Ground Water Sampling and Analysis 5.1 Sampling Overview 5.1.1 Number of Wells 5.1.2 Surveyed Well Location 5.1.3 Well Placement 5.1.4 Well Depth and Screened Interval 5.1.5 Well System Justification 5.1.6 Analytical Parameters Including Justification 5.2 Sampling Methods 5.2.1 Well Drilling Methods a. Screening Data in Cuttings/Soil Samples b. Drilling Logs c. Well Construction Descriptions and Diagrams d. Well Development Methods e. Well Stabilization Period 5.2.2 Sampling Methods and Procedures a. Sampling Rationale b. Field Testing Results c. Sampling Frequency 5.3 Analytical Methods 5.3.1 Analytical Parameters Including EPA Method Number and Detection Limit 5.3.2 Name and Certification of Laboratory 5.4 Results 5.4.1 Data Presentation Including Tables 5.4.2 Notation of Results Above Applicable Standards 5.4.3 Maps and Diagrams Showing the Potentiometric Surface Extent of Contamination
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Table 5
Sample Phase II Report Outline (continued)

6.0 Other Sampling and Analysis 6.1 Building Interiors 6.1.1 Sampling Overview 6.1.2 Sampling Methods 6.1.3 Analytical Methods 6.1.4 Results 6.2 Surface Water 6.2.1 Sampling Overview 6.2.2 Sampling Methods 6.2.3 Analytical Methods 6.2.4 Results 6.3 Other Field Activities 7.0 Findings and Conclusions 7.1 Findings 7.1.1 Summary of Facts a. Soil b. Groundwater c. Building Interiors d. Surface Water 7.1.2 Documented Releases a. On site i. Location ii. Type and Quantity b. Off site i. Location ii. Type and Quantity 7.2 Conclusions 7.3 Other Field Activities	APPENDICES • Drilling Logs • Well Construction Diagrams • Sampling and Analysis Protocol • Sample Preservation and Handling • Other Field Activities
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6. PHASE III - CHARACTERIZATION, CLEANUP & DECONTAMINATION

INTRODUCTION

The purpose of the Phase III EDDP activities is to characterize the extent of the contamination, identify and implement remedial and decontamination strategies that provide a balance between technical soundness, compliance and cost-effectiveness, and eliminate future property environmental liabilities and risks. It is important to point out that this is the only phase of the EDDP that ASTM does not have standards to follow. Therefore, federal, state and local environmental requirements, as well as BMPs, are the guiding principles for Phase III EDDP activities.

As in Phase II, EPA will be acting in a management and oversight role during Phase III EDDP activities. The actual work will be performed by a qualified A&E firm. Therefore, the focus of this section of the guidelines is to provide EPA managers with the institutional knowledge and resources to properly manage Phase III EDDP activities from inception to completion.

To ensure a smooth transition from Phase II to Phase III EDDP activities, it is paramount that EPA managers be familiar with the findings and conclusions in the Phase II EDDP report, federal, state and local environmental requirements, and BMPs. This information should be used as a roadmap for planning and implementing Phase III EDDP activities. It is also important that EPA managers evaluate financial, legal, NEPA, operational, occupancy and vacancy, political, and real estate considerations throughout the process, so EDDP decisions are not made in a vacuum. To accomplish this EPA managers must work hand-in-hand with other internal program offices to ensure these considerations are incorporated into the overall process.

As with Phase II EDDP activities, there are three distinct steps to the Phase III process that EPA managers need to consider; the planning step, implementation step, and closeout step. In addition, IV&V activities will commence after Phase III EDDP activities are complete to ensure cleanup and decontamination activities are successful at minimizing or eliminating the environmental contamination, liabilities and risks associated with the subject property. A detailed discussion of these steps are provided below.

PLANNING STEP

The planning step of the process is a critical part of the overall Phase III EDDP activities. It establishes the foundation on which EPA will progress with the Phase III process from inception to completion. Several activities are conducted in this step, including:

- C Establishing EPA's roles and responsibilities relevant to this phase of the project
- C Reviewing and validating the Phase II findings and conclusions

- C Conducting meetings with internal EPA program offices, oversight and A&E contractors, federal, state and local environmental regulators, and property managers and owners
- C Reviewing and validating the independent cost estimates for Phase III EDDP activities
- C Complying with federal, state and local environmental requirements
- C Discussing DQO and QA/QC procedures for the Phase III activities
- C Developing technical and programmatic documents
- C Establishing field oversight policies and protocols
- C Assessing the potential impacts of Phase III EDDP activities on facility operations and the physical site conditions
- C Managing and disposing of IDW and remedial wastes
- C Ensuring contractors, regulators, and other external organizations have access to the property.

Further information on each of these activities is provided in the following subsections.

Establishing EPA's Roles and Responsibilities

EPA's roles and responsibilities during Phase III EDDP activities will involve leading and partnering with internal and external organizations to streamline the process. Internal organizations include program offices, regional offices, and Headquarters. External organizations include GSA, property owners and managers, state and local regulators, and contractors. The critical decision in establishing EPA's roles and responsibilities is to identify the EDDP Project Manager and lead representatives for the program offices, regional offices, and Headquarters. This is a collaborative decision that is made by EPA's Senior Managers in the relevant program, regional, and Headquarters offices. The EDDP Project Manager and lead representatives will work with the Senior Managers in leading, planning, organizing, managing, and completing all aspects of Phase III EDDP activities. Typically, the EDDP Project Manager and lead representatives selected for Phase II EDDP activities will remain in their respective positions throughout Phase III EDDP activities.

Reviewing and Validating Phase II Findings and Conclusions

The Phase II EDDP report is used as the roadmap to plan and perform Phase III EDDP activities. The most important aspect of this process is reviewing and evaluating the findings and conclusions to determine a course of action for post Phase II EDDP activities. EPA should perform a thorough validation of these findings and conclusions to ensure contaminated areas have been properly characterized. Specifically, EPA needs to review and evaluate the sampling results and determine if the findings and conclusions are appropriate. Through reviewing and

evaluating the findings and conclusions in the Phase II EDDP report, EPA will become familiar with the challenges and concerns associated with the subject property, and start to develop a plan of action for Phase III EDDP activities. In addition, EPA should not lose sight of the fact that unanticipated events (i.e., accidents, chemical spills, fires, etc.), changing conditions, or new information could surface that may require the Agency to develop an addendum to the Phase I and II EDDP reports. Therefore, EPA needs to be flexible throughout the entire due diligence process.

Conducting Meetings

The EDDP Project Manager and lead representatives will coordinate efforts with internal program offices, property managers and owners, GSA, oversight and A&E contractors, and the regulators. The coordination and communication with these various organizations is critical to the success of the project. Coordination and communication will be conducted independently with these various organizations because of potential conflicts of interest, confidentiality, and the roles and functions of each organization. For example, coordination and communication with internal organizations will involve administrative, legal, real estate, logistical, regulatory, cost, and technical aspects of the project. Conversely, coordination and communication with the property managers and owners will solely involve real estate issues. As a result of this dynamic environment, EPA's ability to build and nurture relationships with these internal and external organizations is critical to the success of the project. Therefore, EPA must establish strong and trusting relationships through its actions, open communications, and a proactive attitudes.

Reviewing and Validating Independent Cost Estimates

Another important aspect of the Phase III EDDP planning activities is reviewing and validating the cost estimates for cleanup and decontamination activities. The order of magnitude cost estimates are developed before Phase II EDDP activities, and are often developed for several Phase III scenarios to provide potential budget requirements for Phase III EDDP activities. EPA uses these cost estimates in developing their budget submission to Congress, as well as a planning tool for streamlining Phase III EDDP activities. During this part of the planning process, EPA needs to closely review and validate the technical scoping sheets, assumptions, and cost worksheets on each project area to ensure the order of magnitude cost estimates are accurate, defensible, and reflect the latest information. Any revisions to the technical scoping sheets, assumptions, and/or cost worksheets need to be documented before EPA negotiates Phase III EDDP costs with the A&E contractor performing the work.

Complying with Federal, State and Local Environmental Requirements

EPA must adhere to federal, state and local environmental requirements throughout the entire EDDP process. Therefore, identification and incorporation of all relevant requirements needs to be considered during the Phase III planning process. Specifically, location, site specific conditions and operations, existing permits and licenses, the contaminants of concern, and affected environmental media will dictate which federal, state and local requirements apply. Based on these factors, EPA will need to work closely with federal, state and local environmental representatives to ensure all of the requirements are addressed throughout Phase III EDDP activities. These environmental requirements need to be identified and incorporated into the

Phase III EDDP activities early on in the process, so that change orders or modifications to SOWs with the A&E contractor can be avoided as much as possible.

Discussing DQO and QA/QC Procedures

DQOs are an extremely important part of the Phase III EDDP planning process. The same DQO principles that apply to Phase II EDDP activities apply to Phase III EDDP activities. The EDDP Project Manager should work closely with the Quality Manager and lead program and regional office representatives to ensure DQOs satisfy regulatory requirements, while striking a balance between common sense, good judgment, and cost-effectiveness.

EPA also needs to ensure that QA/QC procedures are documented, in place, and communicated to all relevant organizations performing work on the project. This can be accomplished through developing, distributing, and adhering to a sound QMP. The QMP used in Phase II EDDP activities should be adequate for Phase III EDDP activities. As in Phase II, a strong QMP will minimize the possibility of invalid data, data errors, indefensible data, or inconsistencies with data collection, analysis, and evaluation in Phase III.

The EDDP Project Manager and Quality Manager should work in tandem to ensure DQOs and QA/QC procedures are adhered to throughout Phase III EDDP activities.

Developing Technical Documents

EPA will need to develop a number of technical documents during the planning process of the Phase III EDDP activities to streamline the technical requirements of the project. The technical documents include SOWs, white papers, schedules, cost estimates, and closure and decontamination plans. These documents will be used by EPA to task the A&E contractor to perform Phase III EDDP activities, including characterization sampling, remediation, and decontamination. To ensure delays are minimized during Phase III EDDP activities, EPA should complete these documents as early in the planning process as possible. Assuming the contractors, their roles, and responsibilities remain unchanged, no programmatic documents are developed by EPA during Phase III as those developed during Phase II remain relevant and applicable.

Developing Field Oversight Policies and Protocols

Another important aspect of the Phase III planning process is establishing field oversight policies and procedures. The field oversight policies need to focus on the health and safety of EPA's employees and contractors, and need to consider the potential hazards that exist and the specific activities being performed by the A&E contractor, while achieving the overall goals and objectives of the project. The policies should focus on roles and responsibilities, BMPs, and documentation and reporting requirements. The procedures need to provide EPA employees and oversight contractors with guidance for performing Phase III field oversight activities. These procedures include observing the A&E contractor's sampling, remediation, and decontamination operations to ensure compliance with SOWs, SAPs, health and safety plans, waste management plans, and federal, state and local environmental requirements.

Assessing the Potential Impacts on Facility Operations and Physical Site Conditions

EPA also needs to assess the potential impacts of Phase III EDDP activities on facility operations and physical site conditions. Since remediation and decontamination may be required both internally and externally, EPA will need to work closely with the facility manager, SHEMP manager, program and regional offices, and property managers and owners to ensure impacts to facility operations and physical site conditions are minimized. Therefore, EPA should make it a priority to establish a schedule of events as soon as possible, so disruptions to operations can be minimized.

Management of EDDP-Generated Waste

Another aspect of the Phase III EDDP planning process is the management and disposition of IDW and remedial waste. The EDDP Project Manager should work closely with the SHEM Office to identify and follow existing policies and requirements related to waste management. In addition, EPA needs to decide whether to manage IDW and remedial waste internally or require the A&E contractor to manage it independently. Regardless of this decision, EPA needs to ensure that IDW and remedial wastes are managed and disposed of in accordance with federal, state and local environmental requirements.

Ensuring Property Access

During the Phase III EDDP planning process, EPA must ensure access to the property by contractors, regulators, and other external organizations. Since EPA's properties are restricted, it is important that all relevant contractors, regulators, and other external organizations have access to the subject areas of the property where remediation and decontamination activities are anticipated. To accomplish this, EPA will need to work closely with security to ensure that external organizations obtain the appropriate identification badges for their personnel prior to initiating work. Advanced planning will ensure work crews are not delayed during mobilization and operations on site.

IMPLEMENTATION STEP

The implementation part of the Phase III EDDP activities includes sampling to define the extent of contamination, remediation, and decontamination. This step involves the following activities:

- C Reviewing, commenting, and approving programmatic and technical documents developed by the A&E contractor
- C Providing oversight and management of the field work, including sampling and remedial actions
- C Reviewing and evaluating the results of the characterization sampling; determining remediation and decontamination goals and methodologies

- C Conducting meetings with internal EPA program offices, oversight and A&E contractors, and federal, state and local environmental regulators to discuss the results of the Phase III characterization sampling, and approaches for cleanup and decontamination activities
- C Reviewing and evaluating the results of the Phase III remediation and decontamination activities to determine conformance with remediation and decontamination goals, and compliance with environmental requirements
- C Conducting periodic meetings with internal EPA program offices, property managers and owners, the GSA, and regulators to discuss the status of the Phase III EDDP activities.

Further information on each of these activities is provided in the following subsections.

Approving Programmatic and Technical Documents

EPA must review, comment, and approve programmatic and technical documents developed by the A&E contractor. For Phase III activities, the programmatic documents will consist of the QMP, QAPP, and SSHP. If the same A&E contractor is used for Phase III that was used during Phase II, it is recommended that existing programmatic documents developed during Phase II be revised to include planned Phase III activities. A discussion of the importance and the relevance of the QMP, QAPP, and SSHP is detailed in Section 5 of this document.

The technical documents consist of the technical work plans, cost estimates, schedules, preliminary findings, and draft and final reports. The technical work plans will consist of a project Remedial Action Plan (RAP), which shall include a Phase III SAP. The main difference between the Phase II and Phase III SAP is the objective. The objective in Phase II is to confirm the presence or absence of contamination, whereas the objective of the Phase III SAP is to determine the extent and severity of the contamination. As such, the scope and number of samples performed in the Phase III characterization sampling is often more extensive than the Phase II sampling. It is critical that professional judgement be exercised to ensure excessive sampling is not performed, nor excessive costs incurred. Section 5 of this document details the information normally included in a project SAP.

Phase III characterization sampling and analysis (and the associated Phase III SAP) are not always required. In some cases, it is occasionally acceptable and reasonable to determine the extent of contamination based on Phase II sampling results, visual observations, screening, identified trends, and/or existing knowledge of the site. However, if assumptions are made regarding the extent of contamination, thorough confirmation sampling following the remedial actions is required to verify the assumptions and ensure remedial actions were effective and complete.

The RAP will document the planned remedial action strategy and planned Phase III activities. The RAP will include a discussion of the project background, identified constituents of concern, and established action levels; planned remedial actions and decontamination methods; and intended confirmation sampling to verify the remedial actions were successful and complete, as appropriate. If the extent of contamination is not fully delineated at the commencement of remedial action, the RAP should include strategies and procedures (e.g., visual observation, real-

time field screening, mobile laboratory services) to be used by the contractor to determine the extent of remedial actions.

Prior to EPA's approval of the Phase III technical documents, EPA and the oversight contractor will need to evaluate the technical approach to determine if the planned activities will accomplish EPA's project objectives. As part of this evaluation, it is important to consider the potential results that may be obtained from the planned Phase III activities, as well as the project objectives. Consideration may include:

- C Understanding project assumptions - *Have all assumptions been appropriately identified and assessed? Will the planned activities be effective if assumptions made are incorrect?*
- C Understanding value of projected results - *Will the proposed activities provide sufficient data to support No Further Action and conclude the EDDP? Does the potential exist for required additional Phase III remediation or long-term monitoring?*

Considering all potential outcomes of the planned Phase III activities, including characterization sampling, remedial actions, and confirmation sampling, is a critical step in determining whether the RAP is responsive to the objectives of the EDDP project.

The cost estimates and schedules will reflect the planned activities as described in the approved RAP, and the work performed and associated findings will be detailed in the draft and final Phase III reports. EPA should work closely with the A&E and oversight contractors to develop a realistic schedule for reviewing, commenting and approving all programmatic and technical documents. It is paramount that these documents be thorough and conform to current EPA guidelines and requirements, federal, state and local environmental requirements, and BMPs, while being responsive to the project objectives.

Oversight and Management of Sampling and Remedial Actions

As in Phase II, EPA will be acting strictly in an oversight role during Phase III sampling and remediation activities. The oversight contractor will serve as the primary liaison between the A&E contractor and the EPA, and will need to follow the direction and guidance of the EPA. Effective oversight will rely on the oversight contractor's knowledge of the background of the project area and results of the Phase II sampling activities; proposed sampling, laboratory analysis, and remediation methodologies; general and site-specific health and safety procedures; and industry standard operating procedures for environmental remediation. Assuming the Phase II oversight contractor was effective, it is normally beneficial to use the same oversight contractor for Phase III activities to capitalize on the contractor's institutional knowledge of the project.

During Phase III activities, the oversight contractor's activities will include comparing the A&E contractor's physical activities to the programmatic and technical documents, observing and documenting sampling and remediation procedures, and documenting any discrepancies in a log book. The EPA should address any discrepancies or concerns with the A&E contractor as soon as possible to prevent unanticipated problems or additional costs. Occasionally, the extent of required remedial action is not fully identified prior to commencement of remedial actions. In

such cases, one of the primary responsibilities of the oversight contractor will include assessing the A&E's contractor's ability to make reasonable and professional judgements regarding the appropriateness of remedial actions, based on field observations, site background, regulatory requirements, and BMPs.

Evaluating Sampling Results/Determining Goals and Methodologies

The results of the Phase III characterization sampling will be compiled and analyzed to fully delineate the physical extent and severity of the contamination. At this point, remedial options are evaluated and compared to site conditions, constraints, and project objectives to determine the best remedial alternative. The first step in this evaluation is to assess the risk posed to human health and the environment, and identify property liabilities. Site contaminants identified and delineated in the characterization sampling will be compared to established regulatory action levels, identified or site-specific background levels, and/or industry standards.

In the absence of established and applicable media criteria, it may be prudent to perform a risk assessment to develop appropriate risk-based clean-up levels. EPA has published a set of manuals for developing risk information at Superfund sites: *Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Volumes 1 and 2*. Because the Superfund remedial process closely relates to EPA's EDDP, it is appropriate to reference these guidance documents when assessing risk during the Phase III process.

When evaluating the appropriateness of regulatory, site-specific, or risk-based clean-up levels for EPA-owned or -operated properties, it is important that EPA's considerations include non-technical issues (i.e., public relations and awareness, future land use options) which may dictate the need for more stringent clean-up levels.

Following the Phase II and in the planning stage of the Phase III, preliminary remedial alternatives have been identified, and an initial screening of these alternatives has been conducted. Once the extent of contamination has been defined, these alternatives are a starting point for evaluating and selecting viable remedial alternatives. In general, the evaluation criteria consists of:

- C Overall protection of human health and the environment
- C Compliance with applicable, or relevant and appropriate requirements (ARARs)
- C Long-term effectiveness and permanence
- C Reduction of toxicity, mobility or volume through treatment
- C Short-term effectiveness
- C Implementability
- C Cost and schedule

- C Acceptance by federal, state, and local regulatory officials
- C Community acceptance.

When feasible, it is important to develop and assess a range of technically applicable alternatives to evaluate their relative feasibility among technical solutions that range from simple to complex. The selected remedial alternatives may be comprised of no action (i.e., natural attenuation), institutional controls (i.e., deed restrictions, perpetual federal ownership), technological solutions (i.e., remedial, decontamination, or demolition activities), or a combination of approaches.

Meetings with Involved Parties/Approaches for Cleanup and Decontamination

EPA will need to meet with internal program and regional offices, oversight and A&E contractors, and regulators on a regular basis to keep them informed on the status of Phase III characterization sampling, and the approach for clean-up activities. To varying degrees, these parties will have direct involvement in the decision-making process for Phase III remedial actions. It is the responsibility of the EDDP Project Manager and designated representatives to ensure that all involved parties comprehend the results of the Phase II and Phase III sampling, identified remedial alternatives, and project objectives and restrictions to facilitate appropriate decision-making. It is critical that all correspondence regarding the EDDP, particularly correspondence between EPA and regulators, be appropriately documented and retained by the EDDP Project Manager.

Evaluating Results/Conformance and Compliance

Reviewing and evaluating the results of the Phase III remediation and decontamination activities are critical parts of Phase III implementation. Results will typically fall into one of two categories: data collected at the completion of a remedial action intended to support no further action, and data collected to monitor the progress of a long-term remedial action. However, EPA's EDDP will typically involve short-term remedial actions. EPA will have to work closely with the A&E and oversight contractors to thoroughly understand the remedial efforts and sampling results in terms of the following factors:

- C Compliance with regulatory requirements and conformance to the RAP - *Was the work performed as planned? If there were deviancies, were they valid and do they impact the results of the Phase III?*
- C Confidence in representative results - *Do the confirmation sampling results provide adequate data to support no further action? Does further remediation or sampling need to be performed to achieve confidence in no further action?*
- C Risks to human health and the environment and property liabilities - *Have all risks been identified and mitigated? Do any property liabilities (long-term or short-term) remain?*

EPA will need to consider the results of the Phase III and all other factors independently and jointly before developing formal conclusions and recommendations, particularly before determining no further action is required.

Conducting Status Update Meetings

The EDDP Project Manager and lead representatives will need to continue conducting periodic meetings with internal program and regional offices, property managers and owners, GSA, and regulators on a regular basis to keep them informed on the status of Phase III remediation and decontamination activities. The EDDP Project Manager will lead, manage, and facilitate these meetings. Continued status updates will assist in maintaining confidence in the project and resolve critical technical and administrative issues.

As in earlier stages of the EDDP, the issues discussed in these meetings must be tailored to the role of each involved party, but will typically involve some or all of the following: the technical approach, identified property liabilities, project costs and budgets, recommendations, and schedules. Depending on the scope and impact of the remediation activities, it may be appropriate to involve neighbors, community members, and/or other local populations in discussions involving the results of the Phase III remediation activities. As always, it is critical that all correspondence regarding the EDDP, particularly correspondence between EPA and regulators and between EPA and non-EPA property managers and owners, be appropriately documented and retained by the EDDP Project Manager.

CLOSEOUT STEP

The closeout is the last step in the Phase III process. In this step, EPA managers need to ensure closure documentation is complete, submitted to and approved by the federal, state or local regulatory agencies, and all waste is managed in an environmentally compliant manner. The activities performed under this step include:

- C Developing the Phase III EDDP report based on the results of remediation and decontamination activities
- C Shipping the IDW and remediation waste off site to an authorized waste hauler and disposal facility
- C Discussing the results of the Phase III EDDP activities with internal EPA program offices, property managers and owners, the GSA, regulators, and any other relevant stakeholders.

Further information on each of these activities is provided in the following subsections.

Developing the Phase III EDDP Report

The purpose of the Phase III EDDP report is to document the results of the Phase III activities in a factual and scientific report. The report should include a summary of the following:

- Project background (i.e., results of the Phase I and Phase II)
- Description of the Phase III activities performed

- Data obtained during field activities and laboratory analysis
- Explanation of deviations from the technical work plans
- Define the extent of contamination
- Description of the selection and evaluation of remedial alternatives
- Assessment of risk
- Results of the remediation and confirmation sampling
- Summary of findings and conclusions.

The Phase III report is prepared when remediation is complete, the risk to human health and the environment is eliminated or reduced to acceptable levels, and all aspects of the Phase III is documented and serves as a record of EPA's actions to clean up the site contamination.

The appropriate personnel, which may include GSA representatives, EPA senior managers, EPA SHEMD and FMSD managers, and other involved parties, must be briefed on and review the conclusions of this report and subsequent recommendations. Their review must:

- C Evaluate the accuracy of the conclusions relative to the data gathered
- C Determine whether the Phase III was carried out in accordance with the RAP, and comprehend the basis and impacts of any deviations
- C Ensure consistency between field samples and QA/QC samples
- C Evaluate the field data against the appropriate and relevant criteria (i.e., regulations)
- C Approve or concur with the conclusions in the Phase III report, and subsequent recommendations for no further action.

A typical outline for a Phase III report is provided in Table 6 at the end of this section.

Management of EDDP-Generated Waste

Appropriate waste handling and disposal of IDW and remediation waste is critical to reducing EPA's long-term liabilities, particularly since hazardous waste is involved. EPA is liable for any improper handling, storage, or disposal of EDDP wastes, even when performed by non-EPA personnel (i.e., contractors).

It is at the discretion of the EDDP Project Manager and the SHEM Office whether EDDP-generated wastes will be managed by EPA under existing waste disposal procedures at the subject

facility, or if the wastes will be managed by the contractor. If the wastes are managed by the contractor, it is critical that EPA be involved in and approve the procedures for handling, storage, transportation, and disposal of all EDDP-generated wastes. This involvement should include the review and approval of all waste management documents (e.g., waste profiles, manifests) prior to submittal to any regulatory agency or disposal contractor. The facility SHEM Office should work directly with the EDDP Project Manager in establishing, reviewing, and approving appropriate waste storage, handling, and disposal procedures and paperwork. In addition, the contractor should be encouraged to utilize techniques that minimize waste generation, whenever feasible, without compromising project objectives or compliance with applicable regulatory requirements.

Discussing Results of Phase III Activities

Upon completion of the Phase III, the EDDP Project Manager and lead representatives will coordinate the presentation and discussion of the results of the Phase III with internal program offices, property managers and owners, GSA, regulators, and other relevant stakeholders. It may be appropriate to provide copies of the draft Phase III report to EPA program and regional offices for review and comment. The final report should be provided to property managers and owners, GSA, regulators, and other relevant stakeholders. It is important that the EDDP Project Manager identify the expected role and level of authority of each stakeholder when discussing Phase III results. Regulators will likely have the opportunity to comment and participate in the reporting and closure process, while other stakeholders may play a lesser role in any decision-making.

INDEPENDENT VALIDATION AND VERIFICATION

The IV&V process is EPA's insurance policy, from an environmental perspective, when vacating the property. To accomplish this, EPA will hire an independent A&E firm to perform selective sampling in areas that have been remediated or decontaminated. This is conducted to confirm that these activities were successful. It is important that a third party perform these activities to ensure that a complete and objective assessment is performed.

As with the previous Phase II and III EDDP activities, IV&V activities consist of three steps, including planning, implementation, and closeout. A discussion of the activities performed under each of these steps is provided below.

PLANNING STEP

The planning step of the process is a critical part of the overall IV&V activities. It establishes the foundation on which EPA will progress with this part of the process. Several activities are conducted in this step, including:

- C Establishing EPA's roles and responsibilities for the project
- C Reviewing and validating the Phase III findings and conclusions

- C Conducting meetings with internal EPA program and regional offices, oversight and A&E contractors, and federal, state and local environmental regulators
- C Reviewing and validating IV&V cost estimates
- C Complying with federal, state and local environmental requirements
- C Discussing DQO and QA/QC procedures
- C Developing technical and programmatic documents
- C Developing field oversight policies and protocols.

Further information on each of these activities is provided in the following subsections.

Establishing EPA's Roles and Responsibilities

EPA's roles and responsibilities during IV&V activities will involve continued leading and partnering with internal and external organizations to streamline this final stage of the EDDP. For the most part, the internal and external organizations involved in IV&V will remain the same as those involved in Phase III. However, a new A&E contractor may be introduced or the role of an existing subcontractor may be modified to perform the IV&V activities. The EDDP Project Manager and lead representatives will remain in their roles, and will continue to be directly responsible for leading, planning, organizing, managing, and completing all aspects of the IV&V.

Validating Phase III Findings and Conclusions

The Phase III report will serve as the roadmap for planning, implementing, and completing IV&V activities. However, scheduling limitations often require IV&V activities to commence prior to the completion of the final Phase III report. Typically, the A&E contractor that performed Phase III will brief EPA on the findings and conclusions of Phase III prior to issuance of the final report. The most important part of planning IV&V activities is developing a thorough understanding of the work performed in Phase III, and the results achieved.

Conducting Meetings

The EDDP Project Manager and lead representatives will continue to coordinate efforts with internal program and regional offices, property managers and owners, GSA, oversight and A&E contractors, and regulatory agencies. Continued coordination and communications with all relevant organizations is critical to the success of the project, particularly at the end of the project. Meetings and distribution of information will continue to be conducted independently with each organization due to potential conflicts of interest, confidentiality, and their roles and functions. Additionally, EPA may find that regulatory agencies may not be as involved in IV&V activities as they were in Phase III, particularly if permit or other established regulatory requirements were satisfied in Phase III. However, it is critical that EPA continue to build and nurture relationships

with all internal and external organizations through open communications, thorough IV&V planning, and a proactive attitude.

Validating Independent Cost Estimates

Another important aspect of the IV&V planning activities is reviewing and validating cost estimates for IV&V sampling and analysis activities. The cost estimates will be developed using the validated findings and conclusions of Phase III, and will likely be less variable than cost estimates developed during Phase II and Phase III due to a better understanding of site conditions and fewer project assumptions. EPA will use the IV&V cost estimates for budgetary planning. During this part of the planning process, EPA needs to closely review and validate technical scoping sheets, assumptions, and cost worksheets for each project area to ensure that cost estimates are accurate, defensible, and reflect the latest available information.

Complying with Environmental Requirements

EPA must adhere to all applicable federal, state and local environmental requirements during IV&V activities. Considering the focus of IV&V is on post Phase III validation sampling and analysis, these requirements will be similar to those identified in Phase II. Therefore, it is recommended that the requirements identified in Section 5 of this document be reviewed before continuing with the IV&V planning activities. In addition, all relevant EPA guidelines, ASTM standards, and BMPs will be adhered to, where appropriate.

Discussing DQO and QA/QC Procedures

DQOs are an extremely important part of the IV&V planning process. The same DQO principals that applied to Phase II and Phase III apply to IV&V activities. The EDDP Project Manager should work closely with the Quality Manager and lead program and regional office representatives to ensure DQOs satisfy regulatory requirements, and strike a balance between common sense, good judgement, and cost-effectiveness.

EPA also needs to ensure that QA/QC procedures are documented, in place, and communicated to all relevant organizations performing work on the project throughout the IV&V process. This can be accomplished through adhering to (and revising, as necessary) the QMP developed during Phase II and Phase III. A strong QMP will minimize the possibility of invalid data, data errors, indefensible data or inconsistencies, and is particularly critical during this final step of the EDDP.

The EDDP Project Manager and Quality Manager should continue to work in tandem to ensure DQOs and QA/QC procedures are met throughout IV&V activities.

Developing Technical and Programmatic Documents

EPA will need to develop a number of technical and programmatic documents during the IV&V planning process to streamline the administrative, contracting, and technical requirements associated with the project. The technical documents may include new contract documents or IAG documents, SOWs, schedules, and cost estimates. Programmatic documents developed and

refined during Phase II and Phase III may need to be revised or updated due to adjusted contractor roles and responsibilities. To ensure delays are minimized during IV&V activities, EPA should complete these documents as early in the planning stage as possible.

Developing Field Oversight Policies and Procedures

Another important aspect of the IV&V planning process is establishing or revising field oversight policies and procedures. The field oversight policies shall focus on the health and safety of EPA's employees and contractors based on the potential hazards that exist and the specific activities performed by the IV&V contractor. Considering a new contractor will be involved in this process, it is important that all available information on site conditions be provided to the contractor to ensure the safety of all personnel. Policies should focus on the roles and responsibilities of personnel involved in the process, BMPs, and documentation and reporting requirements for the project. The policies should also provide guidance for EPA employees and oversight contractors on performing IV&V oversight activities. The procedures include observing the A&E contractor's sampling activities; record keeping; and conformance with contracts, technical work plans, health and safety plans, and the overall project objectives.

IMPLEMENTATION STEP

The implementation step of the IV&V activities involves performing validation sampling. This step includes the following activities:

- C Reviewing, commenting, and approving programmatic and technical documents developed by the A&E firm conducting the sampling
- C Providing oversight and management of field work
- C Reviewing and evaluating the results of Phase III EDDP activities
- C Reviewing and evaluating the results of IV&V activities to validate and verify that remediation and decontamination activities achieved the desired results.

Further information on each of these activities is provided in the following subsections.

Approving Programmatic and Technical Documents

EPA must review, comment, and approve programmatic and technical documents developed by the A&E contractor. The programmatic documents will consist of the QMP, QAPP, and SSHP. The function and requirements of these documents are detailed in Section 5 of this document.

The technical documents consist of the technical work plan, cost estimates, schedules, and draft and final IV&V reports. The technical work plan will consist of a SAP, which will present the sampling strategy and planned IV&V activities. The main difference between the Phase II or Phase III SAPs and that of the IV&V SAP is the objective. The objective of Phase II is to confirm

the presence or absence of contamination, and the objective of the Phase III SAP is to determine the extent and severity of the contamination. In IV&V, the objective is to confirm that the characterization sampling and remedial actions were performed successfully, thereby minimizing or eliminating EPA's liabilities with the subject property. As such, the scope will include collecting samples in the areas of Phase II and III sampling and remediation, and will include biased and random samples. The IV&V SAP will detail the location, amount, and types of samples to be collected, as well as the sampling methodology; the constituents of concern, and the laboratory analytical methods to be used; and the Phase III action levels.

Prior to EPA's approval of the SAP, EPA and the oversight contractor will need to evaluate the technical approach to determine if the planned activities will accomplish EPA's sampling objectives. As part of this evaluation, it is important to examine Phase II and Phase III results and identify any potentially disputable conclusions or interpretations; if present, these need to be addressed in the IV&V sampling.

The cost estimates and schedules will reflect the planned activities as described in the approved SAP, and the work performed. Results and findings will be detailed in the draft and final IV&V reports. EPA should work closely with the A&E and oversight contractors to develop a realistic schedule for reviewing, commenting and approving all programmatic and technical documents. It is paramount that the documents be thorough and conform to current EPA guidelines and requirements, federal, state and local environmental requirements, and BMPs, while satisfying project objectives.

Oversight and Management of Field Work

As in Phases II and III, EPA will be acting strictly in an oversight role during IV&V activities. The oversight contractor will serve as the primary liaison between the A&E contractor and the EPA, and will need to follow EPA's direction and guidance. Effective oversight will rely on the oversight contractor's knowledge of the project, including the results of the Phase II sampling and Phase III remediation activities; proposed sampling, laboratory analysis, and remediation methodologies; general and site-specific health and safety procedures; and standard operating procedures for environmental investigation.

During IV&V activities, the oversight contractor's activities will include comparing the A&E contractor's physical activities to the programmatic and technical documents, observing and documenting sampling procedures, and documenting any discrepancies in a log book. The EPA should address any discrepancies or concerns with the A&E contractor as soon as possible to prevent unanticipated problems or additional costs.

Reviewing and Evaluating the Results of Phase III EDDP Activities

Reviewing and evaluating the results of the Phase III remediation and decontamination activities is a critical part of IV&V implementation. EPA will have to work closely with the A&E and oversight contractors to thoroughly understand the Phase III results in terms of the following factors:

- C Compliance with regulatory requirements and conformance to the Phase III RAP - *Was the work performed as planned? If there were deviations, were they valid and do they impact the results of the Phase III?*
- C Confidence in representative results - *Do the confirmation sampling results provide adequate data to support no further action? Can results be challenged?*
- C Confirmation of project assumptions - *Have all assumptions made during Phase II and Phase III been confirmed or invalidated?*

EPA's IV&V activities will provide a high degree of confidence that Phase III remediation activities were performed appropriately, completely, and successfully. However, it is critical that EPA consider the results of the Phase III, and identify any potentially disputable results so that they are addressed during IV&V activities.

Evaluating the Results of IV&V Activities

Reviewing and evaluating the results of Phase III remediation and decontamination activities complete the final part of the IV&V implementation. This is the last step in confirming or invalidating that no further action is required. The review of IV&V results is similar to reviewing Phase II or Phase III results in that the considerations include:

- C Conformance to the SAP - *Was the work performed as planned?*
- C Confidence in representative results - *Do the results provide adequate data to support no further action? Were QA/QC procedures implemented and followed?*

If the results support no further action, then activities can be performed to formally closeout the EDDP; however, if results indicate contamination is still present, then further Phase III EDDP activities are required.

CLOSEOUT STEP

The closeout is the last step in the IV&V process. In this step, EPA managers need to ensure that decontamination and remediation goals were achieved, and EPA's environmental liabilities or risks with the subject property are negligible. The activities performed under this step include:

- C Developing the IV&V report based on the results of the validation sampling
- C Shipping the sampling waste off site to an authorized waste hauler and permitted disposal facility
- C Discussing the results of the IV&V with internal EPA program and regional offices, property managers and owners, GSA, regulators, and any other relevant stakeholders.

Further information on each of these activities is provided in the following subsections.

Developing the IV&V Report

The purpose of the IV&V report is to document the results of the independent validation and verification of Phase III activities in a factual and scientific report. The IV&V report is completed when results of the IV&V verify Phase III remediation efforts are complete and the results support no further action. The report should provide a brief summary of the project background (i.e., Phase I, Phase II and Phase III), a summary of the methods used to develop the IV&V scope, a description of the IV&V activities performed, the data obtained during field activities and laboratory analysis, and a summary of findings and conclusions. A typical outline for an IV&V report is provided in Table 7 at the end of this section.

The appropriate personnel, which may include EPA Senior Managers and GSA representatives, must be briefed on the results of the IV&V and all other EDDP activities to concur that no further action is appropriate.

Management of Sampling Waste

As in Phase II and Phase III, appropriate waste handling and disposal are critical to reducing EPA's long-term liabilities, particularly when hazardous waste is involved. EPA is liable for any improper handling, storage, or disposal of EDDP-wastes, even when performed by non-EPA personnel.

It is at the discretion of the EDDP Project Manager whether EDDP-generated wastes will be managed by EPA under existing waste disposal procedures at an existing EPA facility, or if the wastes will be managed by the contractor. If the wastes are managed by the contractor, it is critical that EPA be involved in and approve the procedures for handling, storage, transportation, and disposal of all IV&V-generated waste. This involvement should include the review and approval of all waste management documents (e.g., waste profiles, manifests) prior to submittal to any regulatory agency or disposal contractor. The facility Safety, Health, and Environmental Management Office or SHEMD can provide the EDDP Project Manager with guidance and assistance in establishing, reviewing, and approving appropriate waste storage, handling, and disposal procedures, and paperwork.

The A&E contractor should be encouraged to utilize techniques that minimize the generation of wastes whenever feasible, and are consistent with the project objectives and applicable regulatory requirements.

Discussing IV&V Results

Upon completion of the IV&V, the EDDP Project Manager and lead representatives will coordinate the presentation and discussion of the results with internal program offices, property managers and owners, GSA, regulators, and other relevant stakeholders. Considering the IV&V report will provide additional data to support a no further action decision, it is recommended that

relevant stakeholders be provided a final, rather than draft, copy of the IV&V report for their records.

Table 6
Phase III Report Outline

1.0 Introduction	4.2.2.4 Field Deviations from Sampling and Analysis Plan
1.1 Summary of Findings from Phase I and II Investigations	4.2.3 Laboratory Analysis
1.2 Scope of Phase III	4.2.3.1 Laboratory Analysis/Data Quality Objectives
2.0 Site Maps/Building Plans	4.2.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
3.0 Sources of Contamination	4.2.3.3 Quality Assurance Sample Analysis Results
3.1 Description of Contaminant Sources	4.2.4 Sampling and Analysis Results
3.2 Locations of Contaminant Sources	4.2.4.1 Data Presentation including Tables
3.3 Approximate Date/Type/Quantity of Release	4.2.4.2 Discussion of Results
4.0 Sampling and Analysis Results	4.2.4.3 Maps, Cross-Sections, and Other Appropriate Diagrams Depicting Extent of Contamination
4.1 Soil Sampling	4.3 Surface Water/Sediment Sampling
4.1.1 Sample Types	4.3.1 Sample Types
4.1.1.1 Procedures for Each Type	4.3.1.1 Procedures for Each
4.1.1.2 Boring Logs	4.3.1.2 Physical and Chemical Field Screening Data Quality Objectives
4.1.1.3 Physical and Chemical Field Screening Data Quality Objectives	4.3.1.3 Field Analytical Procedures
4.1.1.4 Field Analytical Procedures	4.3.1.4 Deviations from Sampling and Analysis Plan
4.1.1.5 Field Deviations from Sampling and Analysis Plan	4.3.2 Sample Locations
4.1.2 Sample Locations	4.3.2.1 Objectives and Rationale
4.1.2.1 Objectives and Sampling Rationale	4.3.2.2 Sediment Sampling Depths
4.1.2.2 Distribution and Density	4.3.2.3 Field Deviations from Sampling and Analysis Plan
4.1.2.3 Deviations from Sampling and Analysis Plan	4.3.3 Laboratory Analysis
4.1.3 Laboratory Analysis	4.3.3.1 Laboratory Analysis/Data Quality Objectives
4.1.3.1 Laboratory Analysis/Data Quality Objective	4.3.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
4.1.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)	4.3.3.3 Quality Assurance Sample Analysis Results
4.1.3.3 Quality Assurance Sample Analysis Results	4.3.4 Sampling and Analysis Results
4.1.4 Sampling and Analysis Results	4.3.4.1 Data Presentation including Tables
4.1.4.1 Data Presentation including Tables	4.3.4.2 Discussion of Results
4.1.4.2 Discussion of Results	4.3.4.3 Maps and Other Appropriate Diagrams Depicting Contaminant Distribution
4.1.4.3 Maps, Cross-Sections, and Other Appropriate Diagrams Depicting Extent of Contamination	4.4 Building HVAC Systems Sampling
4.2 Groundwater Sampling	4.4.1 Sample Types
4.2.1 Sample Types	4.4.1.1 Procedures for Each
4.2.1.1 Procedures for Each Type	4.4.1.2 Physical and Chemical Field Screening Data Quality Objectives
4.2.1.2 Physical and Chemical Field Screening Data Quality Objectives	4.4.1.3 Field Analytical Procedures
4.2.1.3 Field Analytical Procedures	4.4.1.4 Deviations from Sampling and Analysis Plan
4.2.1.4 Deviations from Sampling and Analysis Plan	4.4.2 Sample Locations
4.2.2 Sample Locations	4.4.2.1 Objectives and Rationale
4.2.2.1 Objectives and Well Placement Rationale	4.4.2.2 Duct Work Sampling Intervals
4.2.2.2 Surveyed Well Locations, Depths, and Screened Intervals	4.4.2.3 Duct Outlet Sampling Throughput Volumes
4.2.2.3 Sampling Depths	4.4.2.4 Field Deviations from Sampling and Analysis Plan

4.4.3 Laboratory Analysis	5.2 Future Land-Use Options
4.4.3.1 Laboratory Analysis/Data Quality Objectives	5.2.1 Discussion on Future Land-Use Options
4.4.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)	5.2.2 Rationale for Selection of Future Land-Use Option
4.4.3.3 Quality Assurance Sample Analysis Results	5.2.3 Relationship Between Future Land-Use and Overall Risk at the Property
4.4.4 Sampling and Analysis Results	6.0 Final Technology or Alternative Selection and Implementation
4.4.4.1 Data Presentation including Tables	6.1 Final Technology or Alternative Selection
4.4.4.2 Discussion of Results	6.1.1 Description of Screening Process
4.4.4.3 Schematic Diagrams Depicting Contaminant Distribution	6.1.2 Description of Technologies or Alternatives Under Consideration
4.5 Building Surfaces Sampling	6.1.3 Comparative Analysis of Technologies or Alternatives
4.5.1 Sample Types	6.1.3.1 Overall Protectiveness of Human Health and the Environment
4.5.1.1 Procedures for Each Type	6.1.3.2 Compliance With ARARs
4.5.1.2 Physical and Chemical Field Screening Data Quality Objectives	6.1.3.3 Long-Term Effectiveness
4.5.1.3 Field Analytical Procedures	6.1.3.4 Reduction of Toxicity, Mobility, or Volume Through Treatment
4.5.1.4 Deviations from Sampling and Analysis Plan	6.1.3.5 Short-Term Effectiveness
4.5.2 Sample Locations	6.1.3.6 Implementability
4.5.2.1 Objectives and Rationale	6.1.3.7 Cost
4.5.2.2 Pipe Insulation Sampling Intervals	6.1.3.8 State Acceptance
4.5.2.3 Ambient Air Sampling Throughput Volumes	6.1.3.9 Community Acceptance
4.5.2.4 Field Deviations from Sampling and Analysis Plan	6.1.4 Detailed Discussion of Selected Alternatives
4.5.3 Laboratory Analysis	6.1.5 Implementation Plan and Schedule for Selected Alternatives
4.5.3.1 Laboratory Analysis/Data Quality Objectives	6.1.6 Statutory Determination for Selected Alternatives
4.5.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)	6.2 Technology or Alternative Implementation
4.5.3.3 Quality Assurance Sample Analysis Results	6.2.1 Description of Activities
4.5.4 Sampling and Analysis Results	6.2.1.1 Chronology of Activities
4.5.4.1 Data Presentation including Tables	6.2.1.2 Conformance with Implementation Plan
4.5.4.2 Discussion of Results	7.0 Conclusions and Recommendations
4.5.4.3 Schematic Diagrams Depicting Contaminant Distribution	7.1 Conclusions
4.6 Summary of Findings	7.1.1 Summary of Findings and Results
5.0 Risk and Future Land-Use Options	7.1.2 Discussion on Success in Meeting Remediation Goals and Objectives
5.1 Risk Assessment	7.2 Recommendations
5.1.1 Qualitative Risk Assessment	7.2.1 Discussion on follow-up Actions
5.1.1.1 Rationale for Performing Qualitative Risk Assessment	7.2.2 Discussion on Long-Term Monitoring or Implementation of Institutional Controls
5.1.1.2 Discussion of Contaminants of Concern and Pathways Considered	7.2.3 Statement of Site Closure
5.1.1.3 Results of Qualitative Risk Assessment	APPENDICES
5.1.2 Quantitative Risk Assessment	
5.1.2.1 Rationale for Performing Quantitative Risk Assessment	
5.1.2.2 Assessment of Carcinogens	
5.1.2.3 Assessment of Noncarcinogens	
5.1.2.4 Results of Quantitative Risk Assessment	
5.1.3 Assessment on Overall Risk of the Property	

Table 7
IV&V Report Outline

1.0 Introduction 1.1 Summary of Phase I, II, and III EDDP Activities 1.2 Scope of IV&V 2.0 Phase III Activities 2.1 Phase III Findings and Conclusions 3.0 Data Quality Objectives and QA/QC Procedures	4.0 IV&V Sampling and Analysis Results 4.1 Soil Sampling 4.2 Groundwater Sampling 4.3 Surface Water/Sediment Sampling 4.4 Building HVAC Systems Sampling 4.5 Building and Surfaces Sampling 5.0 Summary of Findings 6.0 Conclusions APPENDICES
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7. CONCLUSION

GENERAL DISCUSSION

This document provides guidance on participating in or performing EPA's EDDP on real property being considered for acquisition, transfer, or disposal. The EDDP provides a platform for EPA to determine the environmental condition of the property, including identifying suspected areas of contamination, confirming contamination, characterizing the extent and severity of the contamination, and performing management and mitigation measures, if required. The environmental condition of real property being transferred, acquired, or disposed of is of the utmost importance to EPA because it can cause future liability to the Agency if not properly characterized. To alleviate these concerns, EPA personnel involved in real property acquisition, transfer, or disposal should be familiar with the contents of this document.

REVIEW OF EPA's EDDP

The EDDP is a three-phased approach used by EPA to eliminate or minimize environmental risk or liability associated with real property acquisition, transfer, or disposal. The first phase is the preliminary survey and site investigation. This phase is used to identify suspected areas of contamination. It is also the cornerstone and building block for the rest of the EDDP. The second phase is confirmatory sampling. This phase is used to confirm the presence or absence of contamination; however, it does not characterize the extent and severity of the contamination. The third phase is the characterization and cleanup part of the process. This phase is used to characterize the extent and severity of the contamination, assess the risk of the property, and eliminate or reduce the risk of the contaminants through remediation or decontamination. Specific information relating to each of these phases is provided in Sections 4 through 6 of this document.

An important aspect of the EDDP is the continuity and flow of information from one phase to the next. Considering each of the three phases may be performed by an independent party, it is critical that EPA personnel involved in the process ensure a smooth transition from one phase to the next so that nothing is overlooked. To eliminate or minimize any concerns with the transition between phases, EPA must insist the EDDP reports are thorough, accurate, and consistent with these guidelines. Additionally, OA, program and regional offices, and OGC must provide adequate oversight during each phase to ensure the work performed by contractors is consistent with the statement of work, associated work plans, ASTM standards, BMPs, and federal, state, and local environmental requirements. Sections 4 through 6 of this document provide an in-depth discussion on the contents of each of the reports.

OTHER PROPERTY TRANSFER-RELATED ISSUES AND ACTIVITIES

Although the focus of this document is on EPA's EDDP, other property transfer-related issues and activities exist that can have a direct or indirect impact on real property acquisition, transfer, or disposal. These issues and activities include equipment deactivation and decommissioning, facility surveillance and monitoring, removal and management of chemicals and hazardous substances, permit or license transfer or termination, management of personal property and surplus equipment, and building restoration and improvements. Each of these issues and activities must be managed properly by the appropriate EPA office so that delays to real property acquisition, transfer, or disposal schedules are minimized. Specific information relating to each of these issues and activities is provided in Section 3 of this document.

RECOMMENDATIONS

This document should be used as a guidance document by appropriate EPA personnel and staff and EDDP contractors to assist the Agency in the implementation and management of the EDDP. Appropriate EPA personnel and staff and EDDP contractors should reference these guidelines, as early in the real property acquisition, transfer, or disposal process as possible, to properly prepare for all aspects of the EDDP.

EPA needs to communicate clearly and effectively, both internally and externally, to ensure all EDDP concerns are addressed. OA, program and regional offices, and OGC must work closely together throughout the EDDP to properly plan, schedule, implement, and assess the various activities. Additionally, EPA has to work hand-in-hand with its stakeholders, including other federal agencies, state entities and local municipalities, and the public, to ensure federal, state, and local environmental requirements are met.

Through referencing and utilizing the information discussed in this guidance document, EPA will comply with CERFA, 40 CFR Part 373, and ASTM standards, as well as eliminate or minimize its environmental liabilities or risks associated with real property acquisition, transfer, or disposal. In addition, EPA will continue to uphold its mission as stewards of the environment.

ENDNOTES

1. United States Department of Energy, Office of Environmental Management, *Decommissioning Resource Manual*, August 1995.
2. *Ibid.*
3. *Ibid.*
4. *Ibid.*
5. *Ibid.*
6. *Webster's College Dictionary*, 1st Edition, Copyright 1995, 1992, and 1991 by Random House.
7. *Ibid.*
8. Black's Law Dictionary, 5th Edition.
9. *Ibid.*
10. *Ibid.*
11. *Ibid.*
12. Memorandum, EPA Office of Administration Director (John C. Chamberlin) to Assistant Administrators, Regional Administrators, and OARM Directors, 29 May 1996, Management Responsibility for Transferring EPA Real Property.

Appendix A
List of Acronyms and Abbreviations

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Appendix A

List of Acronyms and Abbreviations

ALARA	As Low as Reasonably Achievable
ACBM	Asbestos-Containing Building Materials
ACM	Asbestos-Containing Materials
AEA	Atomic Energy Act
AEREB	Architecture, Engineering and Real Estate Branch
ASHERA	Asbestos Hazard Emergency Response Act
ALARA	As Low As Reasonably Achievable
ARAR	Applicable or Relevant and Appropriate Requirement
ASHARA	Asbestos School Hazard Abatement Reauthorization Act
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
CAA	Clean Air Act
CAMU	Corrective Action Management Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERFA	Community Environmental Response Facilitation Act
CESQG	Conditionally Exempt Small Quantity Generator
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CORRACTS	Corrective Actions (EPA Database)
CWA	Clean Water Act
CX	Categorical Exclusion
D&D	Decontamination and Decommissioning
DLA	Defense Logistics Agency
DOE	Department of Energy
DOT	Department of Transportation
EA	Environmental Assessment
EDDA	Environmental Due Diligence Audit
EDDP	Environmental Due Diligence Process
EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERNS	Emergency Response Notification System
FAA	Federal Aviation Administration
FMSD	Facilities Management and Services Division
FNSI	Finding of No Significant Impact
FS	Feasibility Study
GSA	General Services Administration
HAP	Hazardous Air Pollutants

HCFC	Hydrochlorofluorocarbon
HRS	Hazardous Ranking System
HSWA	Hazardous and Solid Waste Amendments
HVAC	Heating, Ventilation, and Air Conditioning
HWMF	Hazardous Waste Management Facility
IV&V	Independent Validation and Verification
LBP	Lead-Based Paint
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
MSDS	Material Safety Data Sheet
MVAC	Mobile Vehicular Air Conditioners
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NPDES	National Pollutant Discharge Elimination System
NPDWR	National Primary Drinking Water Regulations
NPL	National Priorities List
NRC	National Response Center
NRC	Nuclear Regulatory Commission
OA	Office of Administration
ODS	Ozone-Depleting Substance
OERR	Office of Emergency and Remedial Response
OFA	Office of Federal Activities
OFFRR	Office of Federal Facilities Reuse and Restoration
OGC	Office of the General Counsel
OPP	Office of Pesticide Programs
ORD	Office of Research and Development
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response
P2	Pollution Prevention
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyl
PDL	Predicted Dose Level
POTW	Publicly Owned Treatment Works
PRP	Potentially Responsible Party
PTM	Property Transfer Manager
QA/QC	Quality Assurance/Quality Control
RACM	Regulated Asbestos-Containing Materials
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RfD	Reference Dose
RFP	Request for Proposals
RI	Remedial Investigation
ROD	Record of Decision

RQ	Reportable Quantity
S&H	Safety and Health
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SF	Slope Factor
SFI	Sanborne Fire Insurance
SHEMD	Safety, Health and Environmental Management Division
SHEMP	Safety, Health Environmental Management Program
SI	Site Inspection
SPCC	Spill Prevention, Control and Countermeasures
SQG	Small Quantity Generator
TSDF	Treatment, Storage, or Disposal Facility
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank

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Appendix B

Definitions

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Appendix B

Definitions

Aboveground Storage Tank (AST)	Tanks and associated piping that are more than 90 percent, by volume, aboveground.
Blank Samples	A sample of distilled, de-ionized, contaminant-free water is collected, containerized, treated, and handled in the same manner as the samples. Blanks are used as an indicator of sample contamination throughout the entire process.
CERCLIS	CERCLA Information System, EPA's database and management system that inventories and tracks releases addressed or needing to be addressed by the Superfund program.
Cleanup	See remediation.
Composite Sample	A non-discrete sample composed of more than one specific sample collected at various sampling sites and/or times, combined and treated as one. Composite samples may give an average concentration or composition.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	The Act that authorizes EPA to clean up uncontrolled or abandoned hazardous waste site, and respond to accidents, spills and other emergency releases of hazardous substances. CERCLA provides EPA with enforcement authority to ensure that responsible parties pay the cleanup costs of remediating a site contaminated with hazardous substances.
Deactivation	The process of placing a facility in a safe and stable condition.
Decommissioning	The process of removing a facility from operation, followed by decontamination, entombment, dismantlement, or conversion to another use.
Decontamination	The removal of unwanted material (typically radioactive material or hazardous material residue) from facilities, soils, or equipment by washing, chemical action, mechanical cleaning, or other techniques.

Duplicate Samples	Two samples collected at the same time from the same location. The analysis of duplicate samples using the same procedure and instrument provides an indication of analytical variability and error.
ENFLEX	A database maintained by EPA's Safety, Health, Environmental Management Division Washington, D.C., consisting of safety, health, and environmental audit findings and corrective actions taken for all EPA facilities.
Environmental Baseline Survey (EBS)	A factual representation of the environmental conditions for all property at a facility, also identifying "uncontaminated" (within the meaning of CERCLA Section 120(h)(4), as amended by CERFA) portions of the property. An EBS is used by DoD as a foundation document for environmental cleanup and base closure. There are two types of EBSs, base-wide and site-specific. The EBS can facilitate re-use decisions, provide information about parcels that require further investigation or response actions, and provide detailed site evaluation to determine suitability for lease or transfer.
Environmental Due Diligence Audit (EDDA)	A systematic program for conducting investigations of real property transfers. The purpose of an EDDA program is to help minimize environmental liabilities associated with such transfers.
Environmental Due Diligence Process (EDDP)	A process developed and used by EPA to close, consolidate, or transfer facilities in which EPA has real property interests.
Environmental Due Diligence Project Manager	Responsible for leading and managing EPA's EDDP project at the subject facility and overseeing the EDDP review team and personnel support.
EDDP Review Team	Responsible for providing technical support to the EDDP Project Manager from the inception of the project to completion. Appendix G highlights the necessary qualifications of team members.
EPA Facility	Buildings and other structures, their functional systems and equipment, and other fixed systems and equipment installed therein; outside plants, including site development features such as landscaping, roads, walks, and parking areas; outside lighting and communication systems; central utility plants; utility supply and distribution systems; and other physical plant features. An EPA facility includes the entire property including interior and exterior structures operated by EPA and environmental media affected by EPA's operations.

Emergency Planning and Community Right-to-Know Act (EPCRA)	Title III of the Superfund Amendments and Reauthorization Act (SARA), which calls for facilities to report toxic releases.
Exposure Pathway	See Pathway of Exposure.
Facility	As defined by Section 101(9) of CERCLA, a facility means any building, structure, installation, equipment, pipe or pipeline, well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, in any site or area where a hazardous substance has been deposited, stored, disposed of, placed, or otherwise located. It does not include any consumer product in consumer use or any vessel.
Facility Manager	Responsible for facility life cycle management operations, including acquisition, transfer, and termination activities as it relates to real property. The facility manager coordinates with the EDDP Project Manager on all EDDP activities.
Feasibility Study	An analysis of remedial alternatives based on nine evaluation criteria as outlined in the National Oil and Hazardous Substances Contingency Plan.
Federal Real Property Transfer Regulation (40 CFR 373)	The regulation that requires any U.S. department, agency, or instrumentality that wishes to transfer real property owned by the U.S., where hazardous substances were stored for one year or more and known to have been released or disposed of, to include in the contract notice of the type and quantity of hazardous substance and notice of the time when storage, release or disposal took place, to the extent such information is available from a complete search of the agency files.
Field Sampling Plan (FSP)	A plan that defines in detail the sampling and data gathering activities to be used at a site. (See SAP.)
Grab Sample	A discrete sample that is collected at one point in time. It is representative of only one specific site at a specific time; as such, it is best used if the source of contamination is likely to be stable over a period of time and/or geographical area.
Graded Approach	An approach by which the level of analysis, documentation, and actions necessary to comply with a requirement are commensurate with (1) the relative importance to safety, safeguards, and security; (2) the magnitude of any hazard involved; (3) the life cycle stage of a facility; (4) the programmatic mission of a facility; (5) the particular characteristics of a facility; and (6) any other relevant factor.

Hazardous Material	As defined by DOT, a designated substance or material that has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce.
Hazardous Substance	Any substance EPA has designated for special consideration under the Clean Air Act, Clean Water Act, or the Toxic Substances Control Act; any hazardous waste under the Resource Conservation and Recovery Act; or other substances designated by EPA that may present substantial danger to human health and the environment.
Hazardous Waste	A solid waste that exhibits any one of the following criteria: (1) it identifies any one of the characteristics identified in Part 261, Subpart C (40 CFR §261.3 (a)(2)(i)); (2) it is listed in Part 261, Subpart D, and has not been excluded from the lists by a delisting petition (40 CFR §261 (a)(2)(ii)); (3) it is a mixture of a listed hazardous waste and a solid waste (40 CFR §261.3 (a)(2)(iv)); (4) it is derived from the treatment, storage, or disposal of a listed hazardous waste (40 CFR §261.3 (c)(2)(i)).
Health and Safety Plan	A site plan prepared during the scoping phase of remediation, construction, or closure. This plan describes the measures that will be taken to ensure health and safety at a site.
IV&V (Independent Validation and Verification)	Activities that commence after Phase III EDDP activities are complete to ensure cleanup and decontamination activities are successful at minimizing or eliminating the environmental contamination, liabilities, and risks associated with the subject property.
Manifest	The shipping document EPA form 8700-22 and, if necessary 8700-22A, originated and signed by the generator in accordance with the instructions.
Material Safety Data Sheet (MSDS)	A fact sheet developed for hazardous chemicals that defines the hazards and safety precautions required for use.
National Pollutant Discharge Elimination System (NPDES)	Section 402 of the Clean Water Act that establishes a permit for discharges to water and provides standards by which such permits may be granted.
National Priorities List (NPL)	EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action. This list is updated at least once a year.
Office of General Council (OGC)	Provides legal assistance in eliminating or minimizing EPA's liability in real property transfers.

Operation and Maintenance (O&M)	As per 40 CFR §300.435, measures required to maintain the effectiveness of response actions. O&M measures are initiated after the remedy has achieved the remedial action objectives and remediation goals in the Record of Decision (ROD), and is determined to be operational and functional.
Operation and Maintenance Plan	A plan developed for managing operations and maintenance at a facility.
Pathway of Exposure	The course a chemical or physical agent takes from a source to an exposed organism. Each pathway includes a source or release for a source, an exposure point, and an exposure route.
Phase I	The preliminary survey and site inspection performed to identify the site profile and the potential areas of environmental concern that may require further investigation. The major components include preliminary questioning, records search and review, site inspection and investigation, and report development.
Phase II	Further site investigations and limited environmental sampling to verify the suspected contamination found in the Phase I. The extent of contamination is determined through supplemental sampling analysis.
Phase III	The process of identifying and implementing selected remediation alternatives requiring remediation or cleanup; decontamination and decommissioning; or removal and disposal of the facility's buildings, equipment, and so on.
Pollution Prevention	An EPA initiative incorporating waste minimization into performance and contract requirements, in order to prevent and reduce hazardous waste generation at facilities.
Preliminary Survey	A Phase I activity consisting of completing the questionnaire and a document search and review to obtain basic information about the property. The preliminary survey is performed before conducting a visual site inspection and investigation of the facility and may be performed before or in concert with the records search and review.
Property	See Real Property.
Property Transfer	An act of two or more parties, or the law, by which the title or an interest, benefit, or right to property is conveyed from one person to another. This includes sale, lease, mortgage, escheat, eminent domain, and foreclosure.

Radon	A radioactive gas byproduct from the decay of radium, which is naturally occurring in some uranium.
RCRA Facility Assessment (RFA)	An investigation that characterizes the nature, extent, and rate of migration of contaminated releases identified in an assessment. Used to determine whether corrective action for a RCRA unit is needed or to define what additional data must be gathered to make this determination.
RCRA Facility Investigation (RFI)	The RCRA corrective action process that determines the extent of hazardous waste contamination. An RFI is comparable to a Superfund remedial investigation.
Real Estate Manager	Responsible for management and oversight of all real estate-related activities. The Real Estate Manager must be aware of the scope, goals, and management process involved in the EDDP.
Real Property	Permanent, fixed, and immovable property, such as lands, and rights arising out of, or connected with the property.
Real Property Interests	This refers to the benefits and rights inherent in the ownership of the physical real estate. It is the bundle of rights with which the ownership of real estate is endowed.
Release	As defined by Section 101(22) of CERCLA, any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discharging of barrels, containers, and other closed receptacle containing hazardous substance or pollutant or contaminant).
Remedial Action Plan (RAP)	A form of permit that authorizes the treatment, storage, and disposal of hazardous remediation waste at a remediation waste management site.
Remedial Investigation (RI)	A study to characterize the contamination at a site and to obtain information needed to identify, evaluate, and select cleanup alternatives.
Remediation	The process of cleaning up a site or controlling the hazardous nature of a site.
Reportable Quantity (RQ)	A quantity of a hazardous substance, as set forth in 40 CFR §302.4, that when released requires EPA notification.

Resource Conservation and Recovery Act (RCRA)	The statute that provides "cradle-to-grave" control of hazardous waste by imposing management requirements on generators and transporters of hazardous wastes and upon owners and operators of treatment, storage, and disposal facilities. RCRA also regulates underground storage tanks.
Sampling and Analysis Plan (SAP)	A plan consisting of a quality assurance project plan and a field sampling plan developed during the scoping of a project to guide in sampling.
Safety Health and Environmental Management Program (SHEMP) Manager	Responsible for managing the Safety, Health, and Environmental Management Program (SHEMP) at the facility. The SHEMP Manager coordinates with the EDDP Project Manager on all EDDP activities.
Site Inspection	An on-site investigation, conducted by a qualified auditor, to determine whether there is a release or potential release and the nature of associated threats. The purpose is to augment the data collected in the preliminary survey and generate, if necessary, sampling and other field data to determine if further action or investigation is appropriate.
Spiked Samples	A sample to which a known quantity of a particular contaminant has been added at known concentrations to determine the accuracy of the analytical method.
Split Samples	A sample that has been divided into equal portions and analyzed by another accepted analytical technique or a different qualified laboratory in order to compare results.
Stakeholder	Program representatives with a vested interest in the facility and its environmental condition, such as property owner or landlord, state environmental agency, future property owner, program representatives operating at the facility, and facility personnel and contractors.
Surveillance and Maintenance (S&M)	A program established during deactivation and continuing until facility operations and systems are phased out during decommissioning to provide a cost-effective manner for satisfactory containment of contamination; physical safety and security controls; and maintenance of the facility in a manner protective of workers, the public, and the environment. S&M includes routine maintenance and inspection of the facility in order to contain the known contamination, protect health and safety of workers and the public, and avoid impact on the environment.

Toxic Substance Control Act (TSCA)

The Act that gives EPA the authority to require testing of chemical substances, both new and old, entering the environment and to regulate them where necessary.

Treatment, Storage, and Disposal Facility (TSDF)

Facilities engaged in the treatment, storage, or disposal of hazardous waste. These facilities are the last link in the cradle-to-grave hazardous waste management system.

Underground Storage Tank (UST)

Tanks and associated piping that are more than 10 percent below the ground surface, and is used to contain a regulated substance.

United States Geological Service (USGS)

A government entity within the Department of Interior that maintains maps and studies of geologic conditions throughout the United States. The USGS also maintains aerial photographs of the United States.

Wetlands

Areas that are temporarily or permanently inundated by surface water or groundwater and support vegetation adapted for life in saturated soil.

Appendix C

Environmental Regulatory Overview

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Appendix C

Environmental Regulatory Overview

INTRODUCTION

As part of the environmental due diligence process (EDDP), the regulatory framework, permits, and status needs to be identified and clearly understood to ensure compliance. These requirements will dictate the scope of property transfer activities for the facility or a particular portion of the facility. The regulatory requirements for real property transfer may be one or a combination of the Atomic Energy Act (AEA); Resource Conservation and Recovery Act (RCRA); Clean Water Act (CWA); Safe Drinking Water Act (SDWA); National Environmental Policy Act (NEPA); Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); Toxic Substance Control Act (TSCA); or Clean Air Act (CAA). These laws have prescriptive requirements and protocols for facilities regulated, permitted, or licensed by these authorities. An overview of each regulatory requirement is provided below.

AEA AND NUCLEAR REGULATORY COMMISSION LICENSES

The Environmental Protection Agency (EPA) operates laboratories nationwide that may use nuclear material as part of their experiments. Depending on the laboratory's research mission and the extent to which nuclear materials are used, the laboratory obtains a license from the Nuclear Regulatory Commission (NRC) as part of its compliance with NRC regulations under the AEA. Typical uses of nuclear materials by EPA laboratories are presented in the following table. In most cases, the use of nuclear material is in a sealed source state. There is, however, unsealed by-product use at some of EPA's larger establishments, such as the Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, and the National Air and Radiation Environmental Laboratory in Montgomery, Alabama. The following table lists laboratory affiliations and how they may use radioactive materials. When facilities are being prepared for property transfer or consolidation, NRC licensees must terminate their licenses.

EPA Laboratory Radioactive Materials Uses

Laboratory Affiliation	Major Radioactive Materials Uses
Environmental Services Division Central Regional Laboratories (CRLs)	• Performing gas chromatography using ⁶³Ni foils in electron capture detector cells • X-ray fluorescence analysis with ¹⁰⁹Cd and ²⁴¹Am sealed sources • Liquid scintillation using ¹³³Ba and ¹³⁷Cs sources • Tracer studies with ¹⁴C and ³H
Office of Research and Development	• Performing gas chromatography using ⁶³Ni foils in electron capture detector cells • X-ray fluorescence analysis using ¹⁰⁹Cd and ²⁴¹Am sealed sources • Field measurements with ²⁴¹Am sealed sources • Liquid scintillation using ¹³³Ba and ¹³⁷Cs sources • Tracer studies with ¹⁴C and ³H • Use of various isotopic solutions for pollutant fate and transport studies, degradation kinetics evaluations, etc.
Office of Pesticide Programs (OPP)	• Performing gas chromatography using ⁶³Ni foils in electron capture detector cells

EPA Laboratory Radioactive Materials Uses

Laboratory Affiliation	Major Radioactive Materials Uses
Office of Air and Radiation	• Performing gas chromatography using ^{63}Ni foils in electron capture detector cells • Field measurements using ^{109}Cd, ^{241}Am, and other types of sealed sources • Whole body counting activities • Advanced radiation monitoring and research activities involving a wide range of by-product, source, and special nuclear materials • Liquid scintillation using ^{133}Ba and ^{137}Cs sources • Use of various isotopic solutions for pollutant fate and transport studies, degradation kinetics evaluations, etc.
Office of Enforcement (i.e., National Enforcement Investigation Center)	• Performing gas chromatography using ^{63}Ni foils in electron capture detector cells • Field measurements using ^{109}Cd, ^{241}Am, and other types of sealed sources

Overview of License Termination Process

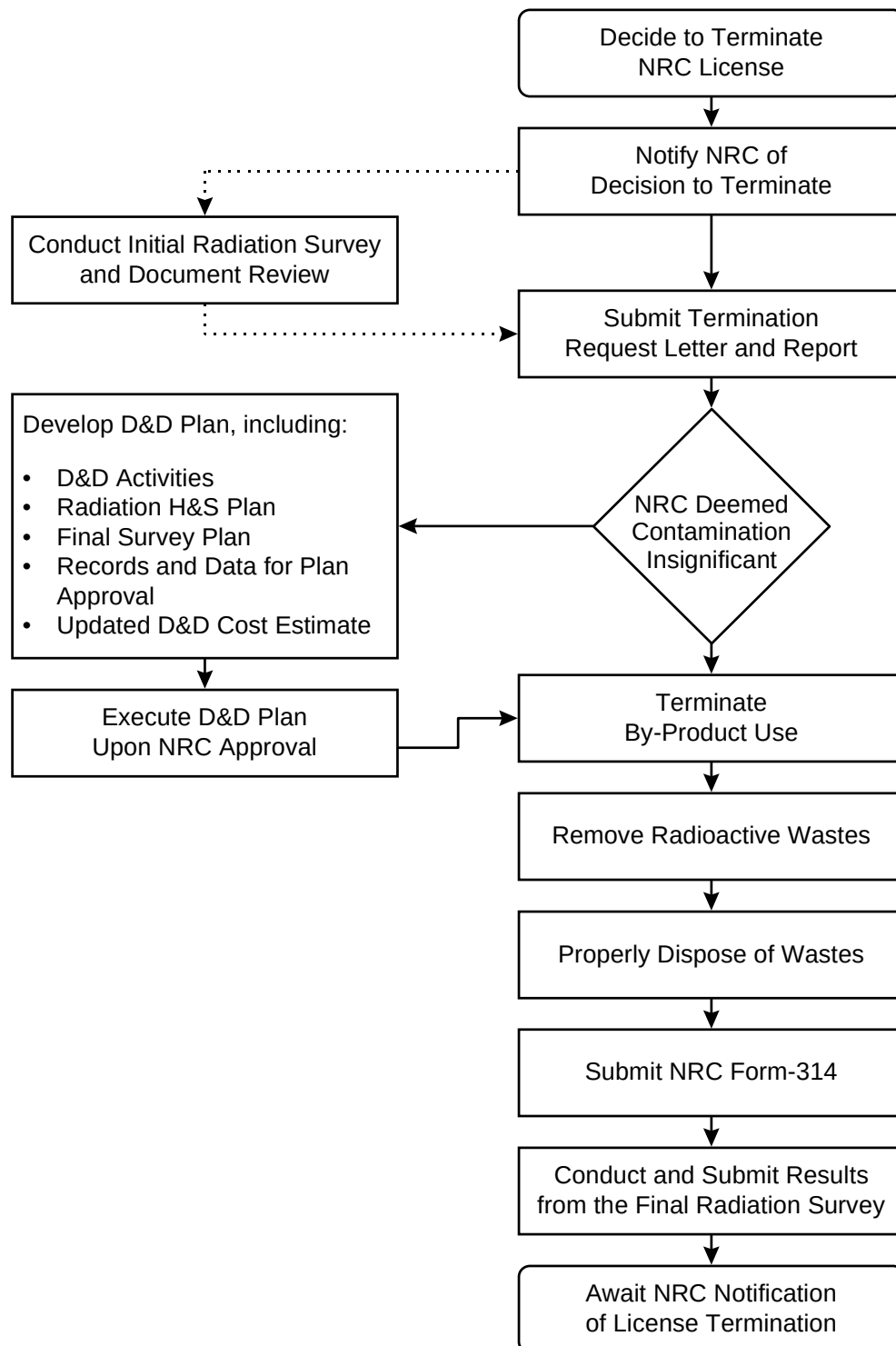
When a licensed facility terminates its operations and ceases to use or handle radioactive materials, the facility must notify the NRC to terminate its license. The licensee submits a request for termination to the NRC, and in cases where contamination is significant, the facility must develop a decontamination and decommissioning (D&D) plan to reduce radioactivity to acceptable levels.

After NRC approval of the licensee's termination request or D&D plan, the facility must carry out the D&D process if applicable. This process can be simple where only sealed sources or short-lived materials are handled, or it can entail extensive efforts for large-scale nucleotide users. A decision tree of required steps in the license termination process is shown on the following page. Though not required, an initial radiation survey and documentation review serve as good starting points. Results from these reviews should be included with the termination request letter to the NRC.

The NRC will only terminate the user's license by written notice after the user:

- Terminates the use of radioactive materials
- Properly removes and disposes of radioactive wastes
- Remediates the site, if D&D is required
- Submits NRC Form 314, a copy of which is provided on page C-4
- Conducts and submits the results of a final radiation survey to confirm decontamination.

To aid in the decontamination determination, the licensee submits the results of a radiation survey of the facility and common use areas to the NRC. If the results are satisfactory, the NRC provides written confirmation of license termination. The licensee remains under license to the NRC, and thus subject to NRC requirements, during D&D activities. After license termination, the facility is no longer subject to NRC requirements regarding further unrestricted use of the facility.

Decision Tree: NRC License Termination Process

CERTIFICATE OF DISPOSITION OF MATERIALS

NRC FORM 314 (9-96) 10 CFR 30 - 36(c)(1)(iv) 10 CFR 40 - 42(c)(1)(iv) 10 CFR 70 - 38(c)(1)(iv)		U.S. NUCLEAR REGULATORY COMMISSION APPROVED BY OMB: NO. 3150-0028 EXPIRES: 06/30/98 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THE MANDATORY INFORMATION COLLECTION REQUEST: 30 MINUTES. THE SUBMITTAL IS USED BY NRC AS PART OF THE BASIS FOR ITS DETERMINATION THAT THE FACILITY HAS BEEN CLEARED OF RADIOACTIVE MATERIAL BEFORE THE FACILITY IS RELEASED FOR UNRESTRICTED USE. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-8 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0028) OFFICE OF MANAGEMENT AND BUDGET WASHINGTON, DC 20503. NRC MAY NOT CONDUCT OR SPONSOR AND A PERSON IS NOT REQUIRED TO RESPOND TO A COLLECTION OF INFORMATION UNLESS IT DISPLAYS A CURRENTLY VALID OMB CONTROL NUMBER.	
CERTIFICATE OF DISPOSITION OF MATERIALS INSTRUCTIONS: ALL ITEMS MUST BE COMPLETED - PRINT OR TYPE SEND THE COMPLETED CERTIFICATE TO THE NRC OFFICE			
LICENSEE NAME AND ADDRESS 		LICENSE NUMBER 	
		LICENSE EXPIRATION DATE 	
A. MATERIALS DATE <i>(Check one and complete as necessary)</i>			
THE LICENSEE OR ANY INDIVIDUAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE LICENSEE CERTIFIES THAT: <i>(Check and/or complete the appropriate item(s) below.)</i> ☐ 1. NO MATERIALS HAVE EVER BEEN PROCURED OR POSSESSED BY THE LICENSEE UNDER THIS LICENSE. OR ☐ 2. ALL ACTIVITIES AUTHORIZED BY THE LICENSE HAVE CEASED AND ALL MATERIALS PROCURED AND/OR POSSESSED BY THE LICENSE NUMBER CITED ABOVE HAVE BEEN DISPOSED OF IN THE FOLLOWING MANNER. <i>(If additional space is needed, use the reverse side or provide attachments.)</i> Describe specific material transfer actions and, if there were radioactive wastes generated in terminating this license, the disposal actions including the disposition of low-level radioactive waste, mixed waste, Greater-than-Class-C waste, and sealed sources, if applicable. For transfers, specify the date of the transfer, the name of the license recipient, and the recipient's NRC license number or Agreement. State name and license number. If materials were disposed of directly by the licensee rather than transferred to another licensee, licensed disposal site or waste contractor, describe the specific disposal procedures <i>(e.g., decay in storage)</i>			
B. OTHER DATA			
☐ 1. OUR LICENSE HAS NOT YET EXPIRED; PLEASE TERMINATE IT. ☐ 2. A RADIATION SURVEY WAS CONDUCTED BY THE LICENSEE TO CONFIRM THE ABSENCE OF LICENSED RADIOACTIVE MATERIALS AND TO DETERMINE WHETHER ANY CONTAMINATION REMAINS ON THE PREMISES COVERED BY THE LICENSE. <i>(Check one)</i> ☐ NO. <i>(Attach explanation)</i> ☐ YES, THE RESULTS, <i>(Check one)</i> ☐ ARE ATTACHED, or ☐ WERE FORWARDED TO NRC ON <i>(Date)</i> ☐ 3. RECORDS PERTAINING TO DECOMMISSIONING, OFFSITE RELEASE, AND WASTE DISPOSAL HAVE BEEN: <i>(Check one)</i> ☐ TRANSFERRED TO A LICENSEE THAT TAKES OVER OPERATION OF LICENSED ACTIVITIES. ☐ FORWARDED TO THE NRC PRIOR TO LICENSE TERMINATION.			
4. THE PERSON TO BE CONTACTED REGARDING THE INFORMATION PROVIDED ON THIS FORM	NAME	TELEPHONE NUMBER <i>(Include Area Code)</i>	
5. MAIL ALL FUTURE CORRESPONDENCE REGARDING THIS LICENSE TO			
CERTIFYING OFFICIAL			
I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT			
PRINTED NAME AND TITLE	SIGNATURE	DATE	
WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTIONS.			

NRC FORM 314 (9-96)

PRINTED ON RECYCLED PAPER

Recent NRC efforts are being studied to streamline the licensing process, and extend it to the D&D process. NRC's Office of Nuclear Material Safety and Safeguards has undertaken a pilot program to determine the feasibility of performing computer-assisted review of license applications. This system presents consolidated licensing guidance on the Internet, and significantly reduces the turnaround time on license applications. Presently the system is capable of handling new portable gauge license application only. However, in the future, it is hoped that the system capabilities will be expanded to include other licensing classes and decommissioning and decontamination.

License Termination Letter

The NRC examines license termination on a case-by-case basis. There are no defined criteria provided for significant contamination determination and subsequent D&D plan development. A license termination request starts by submitting a notification of termination intentions to the NRC. This usually takes the form of an official letter that contains a description of the facility's nuclear material usage, spill records, site plans with pre- and post-construction modifications, a list of all regulated areas requiring documentation, and a previously prepared cost estimate for decommissioning. The letter on the next page provides an example NRC license termination request.

The facility may work with the NRC to identify additional information needs in making its determination for a decommissioning plan submittal. Because many of EPA's facilities use minor quantities of radioactive material, the information request generally will be straightforward and limited. For those larger radioactive material users, all information should be obtained from radiation safety officers' reporting requirements files.

Laboratory Decontamination Guidance

The NRC regulations, at 10 CFR Part 20, Subpart E, establish criteria for the remediation of contaminated sites or facilities that will allow their release for future use with or without restrictions. The criteria include a Total Effective Dose Equivalent limit of 15 mrem/year, meaning that the average individual should not be exposed above this level from residual activity within the decommissioned facility. The criteria also require a licensee to reduce any residual radioactivity to as low as reasonably achievable (ALARA).

The NRC developed the *Regulatory Guide on Release Criteria for Decommissioning* (NUREG-1500) to assist facilities in following acceptable procedures for determining the predicted dose level (PDL) from any residual radioactivity at the site. The criteria describes the basic features of the NRC's models and acceptable parameters to factor into PDL calculations.

The NRC has not developed specific guidance on acceptable procedures for decontaminating laboratory equipment. For most of EPA facilities, decontamination will use suitable solvents. Note that all solvent disposal must also conform strictly to requirements under CERCLA and RCRA. In cases where ductwork, drains, or fumehoods are contaminated beyond the

Sample NRC License Termination Request Letter

Sample EPA Facility
100 Environment Road
Region, State 20001

(Address to NRC regional office)
Division of Low-Level Waste Management and Decommissioning
Office of Nuclear Material Safety and Safeguards
Nuclear Regulatory Commission
100 Nuclear Road
Rockville, MD 20192

Dear Sir or Madam:

In accordance with 10 CFR Part 30, Subpart 36b, this letter shall serve as notice of intent to terminate NRC license XX- XXX-XXXX, which will return the property to unrestricted use. This NRC license enabled the facility to use, store, and dispose of unsealed, radioactive by-products which were used for scientific research and testing. Please find enclosed:

- A record of all spills or other unusual occurrences involving the spread of contamination
- As-built drawings and modifications of buildings where the unsealed sources were used and stored and locations of possible inaccessible contamination
- A list of all regulated areas that require documentation
- Cost estimates initially performed to implement a decommissioning plan (if necessary).

This facility has experienced no spills or other unusual occurrences and has detected no residual radioactive readings from an initial site survey, per recommended procedures. The facility expects NRC to conclude that a decommissioning plan is not required because contamination should be deemed insignificant.

Upon NRC's response to this termination request, the facility will proceed with termination of by-product use, properly dispose of remaining materials, and conduct a final radiation exit survey in anticipation of NRC's own exit survey validation.

If you have any questions about this termination request, please contact the Radiation Safety Officer at (800) 555-1000.

Sincerely,

Radiation Safety Officer

Enclosures

decontamination abilities of certain solvents, they may have to be decommissioned, removed and disposed of as low-level radioactive waste.

Conducting a Final Radiation Exit Survey

The extent of residual contamination will depend on the type and quantity of nuclear material used at the facility. The NRC has developed a guidance document, entitled *Manual for Conducting Radiological Surveys in Support of License Termination* (NUREG/CR-5849), to assist all types of facilities in executing final radiation exit surveys. This document contains procedures for conducting radiological surveys to demonstrate that residual radioactive material satisfies release criteria. Survey methodologies describe the state-of-the-art instrumentation and procedures for conducting radiological surveys. The document also incorporates statistical approaches for survey design, evaluation, and quality assurance.

Resources

In preparing for facility transfer or closure, the following resources may assist in complying with NRC regulations and NRC closure protocols.

- 10 CFR Part 30 Subparts 35 & 36
- Manual Chapter: *NRC Protocols for Decommissioning a Facility* (NRC Internal Draft)
- NUREG-1500, *Working Draft Regulatory Guide on Release Criteria for Decommissioning: Staff Draft*
- NUREG-1501, *Background as a Residual Radioactivity Criterion for Decommissioning* (Draft)
- NUREG-5512, *Residual Radioactive Contamination from Decommissioning*
- NUREG/CR-5849 *Manual for Conducting Radiological Surveys in Support of License Termination*
- Regulatory Guide 1.86, *Termination of Operating License for Nuclear Reactors*
- Task DG-3001, *Records Important for Decommissioning for Licensees under 10 CFR Parts 30, 40, 70, and 72*
- NRC-7590-01, *Action Plan to Ensure Timely Cleanup of Site Decommissioning Management Plan Sites*

Numerous examples of laboratory closure materials are available through the NRC's public document room, 2120 L Street, NW, Washington, DC 20555.

RCRA

This section focuses on RCRA Subtitle C and the applicable closure requirements associated with hazardous waste management activities under EPA's EDDP. In addition to these

guidelines, the state and local environmental authority should also be consulted to determine if additional or more stringent requirements exist. To ease the complexity and confusion of complying with RCRA, as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984, all applicable hazardous waste requirements will be referred to as RCRA requirements from this point forward.

Subtitle C

The RCRA Subtitle C regulations embody a “cradle-to-grave” philosophy in that hazardous waste is managed from the time it is generated through its ultimate disposal. Hazardous waste must always be managed by a responsible party, be it the generator; transporter; or treatment, storage, or disposal facility (TSDF). Operations at EPA facilities or laboratories are generally limited to generator functions; however, there may be instances where facilities or laboratories are designated as TSDFs. Due to EPA’s operations, only RCRA generator and TSDF closure requirements will be discussed further.

Generators

There are three types of hazardous waste generators:

- Conditionally exempt small quantity generators (CESQG), which generate less than 100 kilograms (kg) of nonacute hazardous waste or less than 1 kg of acute hazardous waste in a calendar month
- Small quantity generators (SQGs), which generate between 100 kg and 1,000 kg of nonacute hazardous waste or less than 1 kg of acute hazardous waste in a calendar month
- Large quantity generators (LQGs), which generate greater than 1,000 kg of nonacute hazardous waste or 1 kg or more of acute hazardous waste in a calendar month.

Generators must conduct closure activities based on their size (i.e., CESQG, SQG, or LQG) and the type of unit (e.g., containers, tanks, or containment buildings) the waste is stored in on-site. These activities involve removing and managing residues and waste, rinsing and decontaminating temporary storage units, and decontaminating equipment. These closure activities are codified in 40 CFR Parts 261, 262, and 265.

TSDFs

EPA facilities or laboratories can also be designated as TSDFs, depending on their activities and the amount of time hazardous waste is stored on-site. There are various types of TSDFs used to manage hazardous waste, including containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, injection wells, corrective action management units (CAMUs), drip pads, miscellaneous units, and containment buildings. The definitions of each of these units is codified in 40 CFR §260.10.

There are two sets of closure requirements for TSDFs under RCRA, including the general requirements and the unit-specific requirements. The general closure requirements include performance standards, the closure plan, time allowed for closure, disposal or decontamination of equipment, structures, soil, and closure certification. The unit-specific closure requirements include removal and management of all wastes and residues, decontamination of containment systems and the unit, and decontamination of structures and equipment. If a facility is designated as an interim status TSDF (defined in 40 CFR Part 265), the general closure requirements in 40 CFR Part 265, Subpart G, and the unit-specific closure requirements in 40 CFR Part 265, Subparts I through R, W or DD apply. If the facility is designated as a permitted TSDF (defined in 40 CFR Parts 264 and 270), the requirements in the facility permit apply. These requirements should be reviewed, referenced, and complied with during the EDDP, if applicable.

Additionally, if protection of human health or the environment is still in question after closure activities have been completed, the facility cannot “clean close” the unit and must conduct post-closure care activities. Clean close is not defined under RCRA; however, the March 19, 1987 Federal Register (52 FR 8706) provides language which, in essence, states clean closure is achieved through removing all remaining wastes and residues from the TSDF, or ensuring the contaminants do not pose a threat to human health or the environment. Clean closure is typically left to the discretion of the federal or state enforcement authority. If clean closure is not possible, the facility must perform post-closure care. These activities include the sampling and monitoring of environmental media such as groundwater, surface water, soil, or sediments. Once again, there are general requirements and unit-specific requirements. These requirements should be referenced if “clean closure” is not feasible. These post-closure care requirements are codified in 40 CFR Part 265, Subparts G, I through R, S, or WW for interim status facilities, and the permit for permitted facilities.

Underground Storage Tanks (USTs)

Approximately five million USTs across the United States contain petroleum and other chemicals potentially hazardous to human health and the environment. Many of these tanks and associated piping systems are not protected from corrosion or overfill protection and, therefore, are leaking product or have lost product while in service.

HSWA, Subtitle I of RCRA, established a comprehensive program for new and existing USTs of certain size, use, and which hold regulated substances. A regulated substance is a CERCLA hazardous substance excluding hazardous wastes and petroleum as defined in 40 CFR §280.12.

USTs currently in use must meet technical standards to ensure that regulated substances will not leak or spill out of the tank and cause contamination. Specifically, all USTs must have spill, overfill and corrosion protection by December 22, 1998, or be closed and/or replaced. To prevent spills during delivery of regulated substances, by December 1998, USTs must have catchment basins to contain spills. A tank can often be overfilled, causing a large-volume spill. To prevent this from occurring, USTs must have overfill protection devices, such as automatic shutoff devices, and overfill alarms by the December 1998 deadline. Federal regulations also

require corrosion protection for USTs because unprotected steel USTs can corrode and release substances through corrosion holes.

The requirements of 40 CFR Part 280 are currently applicable to about 1.2 million USTs. However, there are some statutory exclusions to the definition of UST under the federal regulatory program, including:

- Farm or residential tanks of 1,000 gallons or less capacity used for storing motor fuel for non-commercial purposes
- Tanks used for storing heating oil for consumptive use on the premises where stored
- Septic tanks
- Pipeline facilities regulated under a federal or state pipeline safety act, surface impoundments, pits, ponds, or lagoons
- Stormwater or wastewater collection systems
- Flow-through process tanks
- Liquid trap or associated gathering lines directly related to oil or gas production and gathering operation
- Storage tanks situated in an underground area (such as a basement, cellar, or tunnel) if the storage tank is situated upon or above the surface of the floor.

If an EPA facility with a regulated UST is closing, a determination must be made on future use of the UST, as well as whether the UST is the source of any contamination. If the decision is to close the UST, the appropriate closure requirements must be conducted in accordance with the regulations promulgated at 40 CFR Part 280, Subpart G.

An UST may be considered suspect or an area of potential contamination in the EPA Phase I EDDP report for a variety of reasons, such as lack of information on the tank contents and status or physical evidence of stressed or stained vegetation. In addition, a former UST location may also be considered suspect unless documentation, such as sampling results, a letter documenting the state's approval, or a state-certified closure report, is made available during the Phase I EDDP confirming the "clean closure" of a former UST. In cases when the UST or former UST location is considered suspect, the Phase II sampling and analysis plan should incorporate a strategy for characterizing the suspected area. Representative sampling should be conducted accordingly to characterize the soil and other surrounding media of the tanks and pipelines, to determine whether the tanks and pipelines contain product, to characterize the contents of the tanks and pipelines, to verify the integrity and operability of the tank and pipelines. When an UST is suspect, this general approach to characterizing an UST location should be applied to all USTs, regulated and non-regulated.

UST Closure

There are two types of closure for USTs per 40 CFR Part 280, including temporary and permanent closure. When deciding which closure option to follow, facility owners and operators should consider whether there is a potential for future use of the UST, the use planned for the facility, and the condition of the surrounding land in general.

During temporary closure, tanks may either continue to store regulated substances or be emptied. Temporary closure of an UST may last up to 12 months before having to be permanently closed. When an UST system is temporarily closed, owners and operators must continue to comply with normal operating requirements, such as the corrosion protection and release detection requirements of 40 CFR Part 280, Subpart D. Release detection is not required if the UST system is empty, meaning that all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (1 inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system (40 CFR §280.70(a)).

When an UST system is temporarily closed for three months or more, owners and operators must comply with additional requirements. Vent lines must be left open and functioning, and all other lines, pumps, manways, and ancillary equipment must be capped and secured (40 CFR §280.70(b)).

If an UST system is temporarily closed for more than 12 months, it must be permanently closed. Permanent closure includes emptying and cleaning the UST by removing all liquids and accumulated sludges. All permanently closed tanks must also be either removed from the ground or filled with an inert solid material. Owners and operators must test for the presence of a release from the UST before the completion of closure by conducting a site assessment. Records of the site assessment must be maintained for three years after the tank is closed. If EPA is the owner or operator and is vacating the facility, the site assessment records should be forwarded to EPA Headquarters Facilities Management and Services Division (FMSSD) and Safety, Health and Environmental Management Division (SHEMD) to be maintained in the official Property Transfer Program Document Management System.

Sampling and measurement methods must be appropriate for the characteristics of the site and the regulated substance. If contaminated soils, contaminated groundwater, or free product liquids or vapors are discovered, owners and operators must begin corrective action in accordance with Subpart F of 40 CFR Part 280.

Release Reporting

Owners and operators of UST systems must report any suspected or known releases from an UST within 24 hours or another appropriate time period specified by the implementing agency (i.e. EPA Region or state). The implementing agency may direct the owner or operator to determine whether the release has caused any off-site contamination. A suspected release must be investigated within seven days through either a system test or a site check. If a release is confirmed, the owner or operator must begin corrective action.

Corrective Action

Releases from USTs pose a serious environmental and human health threat in the United States. Because USTs, by definition, are largely hidden from view, areas surrounding USTs must be inspected carefully for any signs of contamination. The federal corrective action regulations for USTs found at 40 CFR Part 280, Subpart F provide a flexible framework for owners/operators and implementing agencies to work within and achieve cleanup levels protective of human health and the environment. Corrective action consists of a series of steps which vary depending on the severity of the release.

Short-Term Corrective Actions

Once a release is detected, immediate response activities such as release reporting, immediate containment, and monitoring of explosive hazards should be taken (40 CFR §280.61). Following the immediate response activities, the facility begins abatement measures (40 CFR §280.62(a)). Examples of such measures are:

- Performing a site check to evaluate the extent of the release
- Containment of the regulated substance to prevent continued release
- Continued monitoring and mitigation of explosive hazards
- Mitigating hazards posed by soils excavated during response activities
- Determining the presence of free product in groundwater.

The owner or operator must submit a report to the implementing agency within 20 days of confirmation of the release describing the extent of initial abatement activities (40 CFR §280.62(b)). The owner or operator must submit a more detailed site characterization report to the implementing agency within 45 days of confirmation of release (40 CFR §280.63(b)). After reviewing the results, the implementing agency may decide that the release warrants further response activities. If further corrective action is required, the owner or operator must submit detailed corrective action plans, including provisions to remediate contaminated soils, groundwater, and surface water to the implementing agency (40 CFR §280.66).

Long-Term Corrective Actions

EPA's regulations for the UST corrective action program do not specify cleanup levels or administrative procedures; these determinations are left to the discretion of the implementing agency (generally, the state). The federal regulations require that state or local cleanup programs be protective of human health and the environment. Although the corrective action technologies are not specified in the federal regulations, there are several commonly employed remediation options for soil and groundwater contamination. Available options for soil remediation include in situ soil vapor extraction, in situ bioremediation, excavation and off-site treatment, and natural attenuation. Technologies typically selected for groundwater remediation include in situ air sparging with soil vapor extraction, pump and treat, and biosparging.

Resources

The following resources may assist in complying with closure requirements under RCRA.

- Underground Storage Tanks; Technical Requirements: Final rule. September 23, 1988, Federal Register (53 FR 37082)
- *What Do We Have Here? An Inspector's Guide to Site Assessment at Tank Closure-Video and Companion Booklet*, Video, 510-K-92-006, Booklet, 510-K-92-006
- *Tank Closure Without Tears - Video and Companion Booklet*, Video, 510-V-92-817, Booklet 510-K-92-817
- *RCRA Orientation Manual*, 1990 Edition, EPA/530-SW-90-036

CLEAN WATER MANAGEMENT

This section discusses how to address CWA and SDWA requirements if the Phase I EDDP finds suspected areas of contamination regulated by water management programs. This section specifically addresses requirements under the federal CWA and SDWA programs. Individual state programs should be consulted to determine the applicability of different or more stringent regulatory standards.

Clean Water Act Regulatory Guide

Topic	Action Involved	Regulatory Citation
Oil Discharges	Reporting is required for discharges of oil into navigable waters that: • Violate water quality standards • Cause a film or sheen on the water or shoreline	40 CFR Part 110
Spill Prevention Control and Countermeasures (SPCC) Plan	SPCC plans must be developed when petroleum is being stored in quantities greater than 42,000 gallons underground, 1,320 gallons total aboveground, or 660 gallons in any single aboveground container.	40 CFR Part 112
Hazardous Substance Release Reporting	Reporting is required for releases of hazardous substances that exceed CWA reportable quantities (listed in 40 CFR Part 116) within a 24-hour period.	40 CFR Part 117
National Pollutant Discharge Elimination System (NPDES) Permits	NPDES permits are required for point source discharges of wastewaters into navigable waters of the U.S.	40 CFR Part 122
Stormwater Discharge Permits	These requirements apply to stormwater discharges from specific activities into navigable waters (e.g., EPA facilities having RCRA permits, new construction involving more than five acres of land).	40 CFR §122.26

Clean Water Act Regulatory Guide

Topic	Action Involved	Regulatory Citation
National General Pretreatment Standards	Discharges of wastewater and sanitary waste to the sewer system are subject to the National General Pretreatment Standards, which prohibit discharges of certain wastes to the sewer system.	40 CFR §403.5(b)
National Categorical Pretreatment Standards	These standards regulate discharges of wastewater to the sewer system from specific categories of industrial activities.	40 CFR Parts 405-471
Local Pretreatment Standards	Discharges of wastewater and sanitary wastes to the sewer system will be regulated by a municipal discharge permit or a local sewer use ordinance issued by the local publicly owned treatment works (POTW).	Municipal Discharge Permit or Local Sewer Use Ordinance
§404 Dredging Permits	Potential discharges, water quality impairment, hydrological, and navigational impacts associated with dredge and fill activities require review, approval, and permitting by the U.S. Army Corps of Engineers.	40 CFR §144.31

In addition to CWA requirements, the facility may be subject to water management activities regulated under the SDWA. The table above summarizes the major regulatory programs under the CWA that may impact EPA facilities.

Safe Drinking Water Act Regulatory Guide

Topic	Action Involved	Regulatory Citation
General applicability of SDWA	This subpart establishes key definitions under the national primary drinking water regulations (NPDWR) program, scope of coverage, variances and exemptions, and regulatory effective dates.	40 CFR Part 141, Subpart A
Maximum contaminant levels (MCLs) for organic, inorganic, turbidity, and certain radioactive material	Public drinking water systems providing water for widespread consumption must meet specific maximum contaminant levels to ensure drinking water quality and protect public health.	40 CFR Part 141, Subpart B and Subpart G
Monitoring and analytical requirements for public water systems	Periodic testing and monitoring for coliform bacteria, turbidity, and certain organic and inorganic contaminants is a key aspect of EPA's NPDWR program. The effective dates for these monitoring requirements has been phased in over a period of time.	40 CFR Part 141, Subpart C
Reporting, public notification, and recordkeeping	Reporting and public notification must be conducted for noncompliance with SDWA requirements for public water systems.	40 CFR Part 141, Subpart F
Filtration and disinfection	Specific filtration and disinfection requirements are established for public water systems and supplied by a surface water source or groundwater influenced by surface water sources.	40 CFR Part 141, Subpart H

Safe Drinking Water Act Regulatory Guide

Topic	Action Involved	Regulatory Citation
Control of lead and copper in drinking water	New action levels of 0.015 mg/l for lead and 1.3 mg/l for copper were established in 1991. If these values are exceeded at the tap in 10 percent of the public water system subject to monitoring programs, corrective actions must be initiated.	40 CFR Part 141, Subpart I
Underground Injection Control	Discharges or introduction of wastewaters, industrial wastes, and hazardous wastes into injection wells require specific approvals and permits.	40 CFR Parts 146-149

Per Executive Order 12088, Federal Compliance with Pollution Control Standards, October 13, 1978, EPA facilities are required to comply with applicable regulations under CWA and SDWA. For example, the National Vehicle Fuel and Emissions Laboratory in Ann Arbor operates oil/water separators, and the Annapolis Central Regional Laboratory previously used septic systems prior to connecting to the municipal sewage treatment works. These facilities would be subject to CWA and SDWA requirements. The Phase I Report will have identified situations such as these examples that may prompt further review under the Phase II EDDP.

National Pollutant Discharge Elimination System Permits (NPDES)

When transferring EPA real property, any permits acquired to operate the facility must be terminated or transferred. Permit termination (40 CFR §122.64) generally will follow prescribed administrative procedures. For a federal NPDES permit, a notice of termination must be filed with the CWA Permitting Division. Contact the Office of Water, Permits Division, at 202-260-9545, for more information if a federal permit needs to be terminated. If a state NPDES permit requires termination, contact the Department of Environmental Quality or equivalent agency where the permit was obtained.

In addition to administrative procedures, any equipment used for wastewater treatment to fulfill NPDES permit conditions must be decontaminated, such as cleaning out and sampling any sludge (as with elementary neutralization tanks) and disposing of equipment or waste products in accordance with pertinent federal and state solid and hazardous waste management rules. Additional information on equipment decontamination and decommissioning is provided in Section 3 of this document.

If stormwater discharges, discharge points, or discharge transport pipelines are noted as a potential concern in Phase I, then sampling activities should be conducted as part of Phase II to determine the cause of the problem, and the remedy should be addressed in Phase III. Sections A-06 and A-07 of these guidelines should be referenced for additional information on planning, implementing, and reporting the sampling and analysis activities associated with stormwater discharges, discharge points, or discharge transport pipelines.

Potable Water

Although most EPA facilities are served by public water systems and typically are not subject to SDWA regulations for delivery of treated drinking water, facilities that have on-site wells supplying water for consumption by an average of at least 25 people daily for at least 60 days of the year are subject to requirements applicable to nontransient, noncommunity water systems. If the facility is considered a drinking water supplier, it is required to be within the federal and state maximum contaminant levels (MCLs) for any pollutants in its potable water. If the Phase I determines that the facility is a drinking water supplier and that the water supply is likely polluted, the Phase II activities will consist of drinking water sampling and documentation.

Septic Systems

Administrative closure procedures for septic systems need to be addressed with state authorities and the local municipality. Although not directly part of CWA or SDWA requirements, some municipalities have septic tank abandonment procedures that are administered through the local health department. For example, when a sanitary system is attached to a municipal system, the existing septic tank is required to be “caved-in” and filled with an inert material. This will ensure that the abandoned tank does not present a safety issue when transferring the property. In general, there may not be any Phase II sampling activities associated with the septic system unless the facility Phase I investigation indicated discharges of industrial wastewaters or other nonsanitary wastes.

Wells and Groundwater

Federal and state requirements may be most applicable to underground injection control wells. Accordingly, the Phase II should document any sampling activities to verify adherence of past practices to pertinent standards. The facility should ensure that the potential for wells to become a route of transport for contaminants is eliminated.

If groundwater sampling is needed because of suspected contamination, Phase II analysts may use existing wells, install monitoring wells, or use hydropunch or other sampling methods. Any activities performed and their results should be documented.

Wetlands

Requirements for dredging or filling wetlands are issued and enforced by the Army Corps of Engineers under Section 404 of the CWA. State Section 404 programs can be enforced on waters not susceptible to interstate commerce, including tidal waters and wetlands. If the facility obtained a Section 404 permit, it must be terminated with the issuing authority and any dredging and filling activities must cease. Cases of contamination resulting from these activities and associated sampling operations would likely fall under the federal or state Superfund statutes.

Spill Prevention, Control, and Countermeasures (SPCC) Plan

Some areas with suspected contamination may stem from oil stored on-site. If the facility stored more than 42,000 gallons underground, 1,320 gallons aboveground total, or 660 gallons in any single container aboveground, then the facility should have an SPCC plan in place in accordance with 40 CFR Part 112. The Phase II investigation should include a review of the SPCC plan to determine what engineering controls and systems are in place; an analysis of this equipment to identify whether it is functioning effectively to eliminate the potential for future spills if oil is still stored on-site; and an inspection to make sure that any incidental spills that may have occurred were cleaned up properly.

Resources

The following resources may be helpful in obtaining further information about clean water management:

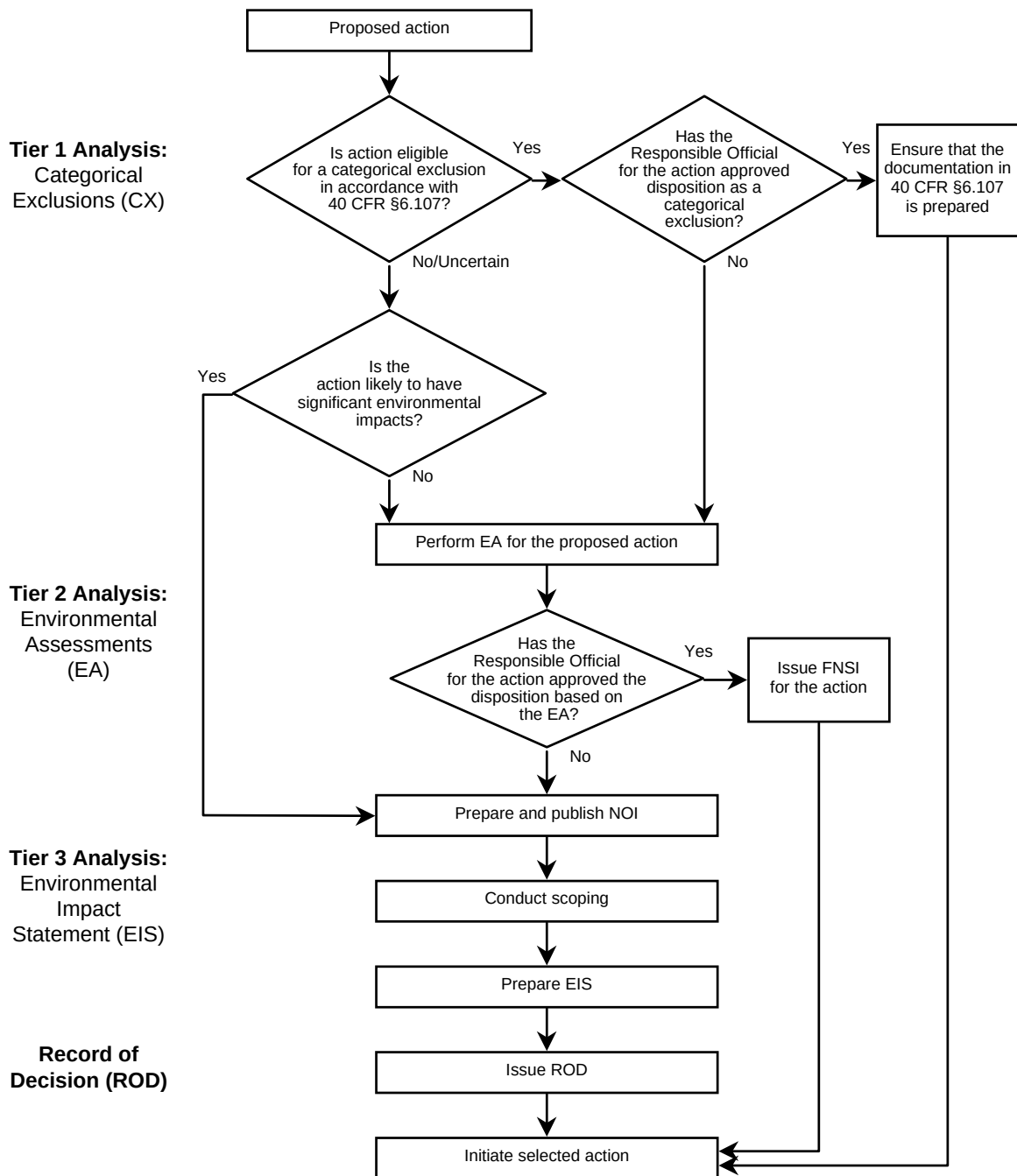
- SDWA Hotline: hotline-sdwa@epamail.epa.gov
- Office of Water Resources Center: 202-260-7786, or waterpubs@epamail.epa.gov
- Oil Pollution Act information exchange under the EPA RCRA/Superfund/Emergency Planning and Community Right-to-Know Act (EPCRA) Hotline: 1-800-424-9346, or 703-412-9810 for the Washington, DC, metropolitan area
- Wastewater Sampling Computer-Based Training and Manual, a set of six computer-based training modules and complementary manual being developed for Region 1 by the EPA SHEMD Multimedia Laboratory in conjunction with the Office of Water. Contact the Multimedia Laboratory at 202-260-2215.

National Environmental Policy Act (NEPA)

The substantive and procedural requirements of NEPA must be followed for all major federal actions, including some activities under EPA's EDDP.

In regard to EPA real property transfers, potential major federal actions applicable for NEPA review include lease termination, building consolidation, mission change, or construction of a new facility or laboratory. In working with the General Services Administration (GSA) and other federal agencies to execute the NEPA process, the Responsible Official, such as the EDDP Project Manager or Laboratory Director, should investigate the potential completion of NEPA documentation by other federal agencies. If NEPA documentation does not exist for the proposed real property transfer, then EPA should initiate the NEPA process.

The NEPA Process



The EPA and other federal agencies follow a three-tiered procedural review process when an action that could affect the environment is proposed. The *NEPA Process Chart* on the next page gives an overview of the process. Tier 1 determines whether the project qualifies for a categorical exclusion (CX). Tier 2 determines whether the project qualifies for a finding of no significant impact (FNSI) after performing an environmental assessment (EA). If no significant impacts are discovered in the EA process, the project qualifies for a FNSI. If significant impacts

are discovered in the EA process, an Environmental Impact Statement (EIS) must be prepared. Tier 3 entails preparing an EIS and issuing a Record of Decision (ROD).

Some examples of real property transfer activities that require the preparation of NEPA document include, but are not limited to, activities that:

- Significantly affect the pattern and type of land use or growth and distribution of human population
- Conflict with local, regional, or state land use plans or policies
- Significantly affect cultural resource areas, endangered or threatened species, or environmentally important natural resource areas such as wetlands, floodplains, or coastal waters
- Significantly have an adverse effect upon local ambient air quality, noise level, surface water or groundwater quality or quantity, water supply, aquatic life, wildlife, and their natural habitats.

The *Draft NEPA/EDDP Review Form for EPA Real Property Transfer or Closure Booklet* contains a form and helpful instructions for executing the NEPA/EDDP. The form will be finalized after EPA determines if a proposed rule will amend the current criteria for categorical exclusions under 40 CFR §6.107(d) or if the EPA's Office of the General Counsel (OGC) will issue a broad definition of a CX determination. The results of the Phase I and II EDDP will assist in determining the appropriate level of NEPA review and documentation through the disclosure and characterization of environmental conditions of the property.

Until the NEPA/EDDP form is finalized and a final rule is promulgated, the following provides a suggested approach for identifying the NEPA requirements and applicability when closing or addressing environmental contamination at an EPA property transfer project. At a minimum, the PTM, laboratory director, or Phase II or III oversight official should consult with EPA's Office of Federal Activities (OFA), OGC, other NEPA specialists, and FMSD to determine the appropriate and required NEPA activities. The *Draft NEPA/EDDP Review Form for EPA Real Property Transfer or Closure Booklet* should be completed in concert with the consultation of these NEPA representatives. The PTM, laboratory director, or Phase II and III oversight official will be responsible for ensuring the NEPA review process is executed including, but not limited to, evaluation, document development, public notification, and mitigation measures. Finally, all supporting materials, reports, and NEPA documentation should be submitted to EPA Headquarters (FMSD/SHMD) to be maintained indefinitely in the official Property Transfer Program Document Management System.

CERCLA

This section discusses how to address CERCLA requirements if the Phase I EDDP finds suspected areas of contamination regulated under Superfund. Federal facilities such as EPA laboratories can clean up hazardous substance contamination pursuant to CERCLA, but the cleanup may not be financed through the Superfund. Superfund was created to pay for response actions where the responsible parties cannot be found or are unable to pay. Superfund financing is reserved for non-federal facilities on the National Priorities List (NPL). The NPL is a group of sites with hazardous substance contamination substantial enough to warrant federal attention and money for cleanup. Congress required EPA to create the NPL to identify the most serious sites, ensuring that Superfund monies are spent on the most serious problems. The purpose of the NPL is to notify the public of sites that need remedial action and may present a long-term threat to public health or the environment. Federal facilities may be placed on the NPL even though they cannot receive Superfund money.

Removal actions and enforcement actions are not limited to NPL sites. CERCLA authority may be used for responding to releases of hazardous substances into the environment. Understanding these terms is essential to understanding the scope of CERCLA. The definitions of these terms are provided in Section 101 of CERCLA.

In some cases the EDDP Project Manager may need to determine whether a CERCLA response is warranted. The removal site evaluation process provides flexibility to determine whether a CERCLA response is warranted or another appropriate federal or state response is available. For example, a CERCLA response may not be necessary for a facility licensed by the NRC and being closed in conformance with an NRC-approved decommissioning plan, for a facility being closed in compliance with a RCRA permit or order, or if a release or a substantial threat of a release is not present at the facility or the amount of hazardous substances present does not warrant federal response.

Under CERCLA section 120, each Federal agency is responsible for carrying out most response actions at facilities under its own jurisdiction, custody, or control. Section 120(a) states that Federal departments, agencies, and instrumentalities are subject to CERCLA just like nongovernment entities, including CERCLA's liability provisions. Pertinent guidelines, rules, regulations, and criteria apply in the same manner and to the same extent, with the exception of requirements pertaining to bonding, insurance, and financial responsibility.

Special requirements and timetables are established under Section 120. For example, section 120(c) requires establishment by EPA of a Federal Agency Hazardous Waste Compliance Docket that lists Federal facilities that have reported managing hazardous substances or releases of hazardous substances. Section 120(h) is presented in Appendix D and addresses in detail, guidelines for the property transfer by Federal agencies.

Release Reporting, Removal, and Remedial Authority

CERCLA gave EPA the authority to require reporting of certain releases of hazardous substances and the authority to require cleanup of those releases through a short-term removal

action and/or a long-term remedial action. CERCLA response actions should be determined on a site-by-site basis, and in consultation with EPA enforcement officials and the state environmental agency, as appropriate. CERCLA response actions include removal (emergency, time-critical, or non-time-critical) and remedial actions.

Discovery and Notification of a Release

In order for a site to be considered eligible for Superfund response, a release of a hazardous substance must be discovered and reported to the government. If a release of hazardous substances is discovered during Phase II EDDP activities, the owner or operator may need to make a notification about the release and can be held liable for any contamination. Personnel in charge of the facility should carefully examine any records on-site for information about what types of chemicals have been used at the facility and which may have been released. If a hazardous substance has been released into the environment in a quantity equal to or greater than its reportable quantity (RQ) (specified in the list of hazardous substances found in 40 CFR §302.4) within a 24-hour period, upon discovery the owner or operator of the facility must immediately notify the National Response Center. This involves a notification to the National Response Center by telephone at (800) 424-8802 providing detailed information about the facility and the nature of the release (40 CFR §302.6). If the owners/operators are unsure of whether a RQ of the hazardous substance was released and whether it occurred within a 24-hour period, they should still report the release to the National Response Center as a precautionary measure (55 FR 8676; March 8, 1990). Even if a release does not warrant notification, this does not mean the owner or operator of the facility will not be held liable for the release and any cleanup costs pursuant to the release.

Following a screening process, sites where hazardous substance releases were reported are listed in Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS), a comprehensive national database that inventories and tracks releases which may need to be addressed by the Superfund program. All sites entered into CERCLIS are carefully evaluated to determine whether contamination poses a great enough threat to warrant federal response and/or inclusion on the NPL.

After discovery or notification of a hazardous substance release, EPA conducts a preliminary assessment (PA) to decide if the release is a threat to human health and the environment. If further investigation is warranted, EPA will conduct a site inspection (SI). The information gathered during the PA and the SI is used to develop a Hazard Ranking System (HRS) score. The HRS evaluates relative risks to human health and the environment posed by uncontrolled hazardous waste sites by assessing four pathways of potential human exposure to contamination (i.e., groundwater, surface water, soil and air). EPA uses a site's HRS score to determine if it should be placed on the NPL.

Removal Actions

If a release presents a serious immediate threat, EPA may take a removal action to stabilize or clean up the release. Typical removal actions include removing leaking tanks or drums of hazardous substances, installing security measures such as a fence at a site, or providing a

temporary alternate source of drinking water to local residents. A removal action may be taken at any time necessary during the response process.

There are three types of removal actions (emergency, time-critical, and non-time-critical), each with different regulatory requirements, depending on the urgency of the need for a response to the release. All removal actions have a time and spending restriction of 12 months and \$2 million, respectively. The time and spending limits may be exceeded when continuing the removal action is necessary to prevent, limit, or mitigate an immediate risk to public health or the environment which will not be acted upon by another party; or when continuing the removal action is consistent with a remedial action that will be taken at the site.

An emergency removal action requires on-site activities to commence within hours of the lead agency's determination that a removal action is appropriate.

A time-critical removal action occurs when, based on the site evaluation, the lead agency determines that a removal action is appropriate and that there is less than six months available before on-site activities must be initiated. For time-critical removal actions, the community must be involved and an administrative record of the removal action must be created (40 CFR §§300.415(n)(2)/300.820(b)).

Non-time-critical removal actions are those where EPA determines a removal action is appropriate and a planning period of more than six months is available before on-site activities must commence. In accordance with §300.415(b)(4), the lead agency must conduct an engineering evaluation/cost analysis (EE/CA) for a non-time critical removal action. The EE/CA is an analysis of removal alternatives for a site. More information on the procedures and activities involved in conducting an EE/CA can be found in EPA's document entitled *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA* (Office of Solid Waste and Emergency Response (OSWER) Directive 9360.0-32). Specific administrative record requirements for non-time-critical actions are specified in 40 CFR §300.820(a).

Remedial Actions

If a hazardous substance release does not pose an immediate threat to human health and the environment, EPA may take a remedial action after further evaluation of the site. Remedial actions are long-term and aimed at achieving a permanent remedy. Examples of typical remedial actions include removing buried drums from a site, thermally treating wastes, pumping and treating groundwater, and applying innovative technologies such as bioremediation to contaminated soil.

A remedial action has two main phases: the remedial investigation/feasibility study (RI/FS) phase, and the remedial design/remedial action (RD/RA) phase. The purpose of the RI/FS is to study conditions at the site, identify contaminants, and evaluate cleanup alternatives. The RI entails collecting and analyzing information to determine the nature and extent of contamination at the site. Specific alternatives are then evaluated during the FS. After the RI/FS, EPA focuses on designing the selected cleanup alternative in the remedial design stage. The remedial action stage follows, with a varying timeframe according to the complexity of the remedy.

A site is considered “completed” or cleaned up once the chosen remedy is operational and functional and meets its designated environmental, technical, legal and institutional requirements. At this stage, operation and maintenance activities are implemented to monitor the effectiveness of the remedy and to ensure that no new threat to human health and the environment arises. EPA is responsible for reviewing operation and maintenance activities conducted by the Regions or state.

Liability

CERCLA imposes liability when there is a release or threatened release of hazardous substances. CERCLA Section 107(a) casts an extremely broad net in defining the scope of persons who can be liable for paying the costs of responding to a release of hazardous substances. The types of parties that can be held liable are (1) the current facility or vessel owners or operators, (2) former facility or vessel owners or operators, (3) those who arrange for treatment or disposal of hazardous substances at a facility, and (4) those who accept hazardous substances for transport to treatment or disposal sites.

There are three defenses to liability outlined in CERCLA Section 107(b):

- An act of God
- An act of war
- An act or omission of a third party who is not an employee or agent of the defendant, and does not have a contractual relationship with the defendant.

The third-party defense, often called the “innocent landowner” provision, rebuts the presumption of liability associated with ownership of the land by claiming the landowner made a good faith effort to discover any contamination. In addition, the third-party defense may come into play where a person is the victim of a so-called “midnight dumper.” To the third-party defense the court scrutinizes the defendant's relationship to the property, specifically whether the defendants knew or had reason to know of the disposal of hazardous substances at the facility. The elements of the defense are found in CERCLA Sections 107(b)(3) and 101(35). The defendant raising the third-party defense must be free of both actual or inferred knowledge and any contractual relationship concerning the property, except as allowed under Section 101(35)(A).

If during closure of an EPA facility, hazardous substance contamination is discovered, but EPA is clearly not responsible for the release it is possible that the Agency may not be held liable for cleanup of the contamination. Determinations will be made on a site-specific basis, and there are some EPA policies to protect persons who were not responsible for contamination on their property. For example, the “Policy Towards Owners of Property Containing Contaminated Aquifers” states the Agency's positions that, subject to certain conditions where hazardous substances have come to be located on or in a property solely as the result of subsurface migration in an aquifer from a source of sources outside the property, EPA will not take enforcement actions against the owner of such property to require the performance of response actions or the payment of response costs (60 FR 34790; July 3, 1995).

Enforcement

CERCLA is a strict liability statute, which means that responsible parties are liable without regard to negligence or fault. The concept of joint and several liability applies in situations where more than one potentially responsible party (PRP) is involved and it is difficult to determine each PRP's contribution to the release. In these situations, the courts have held that an owner, operator, waste generator or transporter may be held liable for the entire cost of site cleanup, unless each party's contribution can be identified. Although EPA cannot take enforcement actions against other Federal agencies or itself pursuant to CERCLA, federal facilities often have their own mandates for responding to hazardous substance releases. EPA should take on cleanup responsibilities, setting an example to other facilities with hazardous substance contamination.

Community Involvement

Community involvement opportunities are tailored to each Superfund site and an integral part of every Superfund response. The National Contingency Plan (NCP) provides the public with the opportunity to comment on, and provide input to, decisions about response actions. Interested persons are provided with accurate and timely information about response plans and progress, and their concerns about planned actions are heard by the lead agency.

CERCLA/RCRA Interface

If an EPA facility which is closing has chemical contamination, a response action may be taken pursuant to CERCLA or RCRA regulations. The authority chosen will depend on factors such as the timeliness of a response, and the substances involved. If CERCLA authority is used for the cleanup the EPA facility will need to follow procedures under the CERCLA regulations to ensure proper cleanup of the site. If the hazardous substance released is also a RCRA hazardous waste, EPA may use RCRA authority rather than CERCLA authority when cleaning up the site. Generally, sites that may be cleaned up under RCRA or certain other laws will not be placed on the NPL.

Resources

The following resources may assist in complying with closure requirements under CERCLA:

- *CERCLA/Superfund Orientation Manual*, EPA/542/R-92/005, October 1992
- *Questions and Answers on Release Notification Requirements and Reportable Quantity Adjustments*, EPA/540-R-94-005, January 1995.

TSCA

By enacting TSCA on October 11, 1976, Congress established a number of requirements and authorities for identifying and controlling toxic chemical hazards to human health and the environment. This section will focus on TSCA polychlorinated biphenyl (PCB) regulations and

the Asbestos Hazard Emergency Response Act (AHERA) as they pertain to EPA property transfer and the Phase II EDDP.

PCBs

PCBs are a group of industrial chemicals that were widely used as coolants, insulating materials, and lubricants in electrical equipment such as transformers and capacitors. PCBs were used from their introduction in the mid-1920s until 1979 when the manufacture and distribution of PCBs in the U.S. was severely restricted due to adverse health effects from exposure.

PCBs are oily liquids or solids, clear to light yellow in color, with no smell or taste. Because of PCBs' widespread distribution and persistence in the environment, they may not only be found in use, but also in general storage items and products or as contamination from prior spills or leaks. It is critical that all PCBs and PCB-containing materials and equipment that may be in service or in storage at the facility are properly identified, managed, and in some cases mitigated. The following are commonly encountered PCB-containing materials:

- Transformers
- Small capacitors (contain < 3 pounds of dielectric fluid)
- Large capacitors (contain 3 pounds or more of dielectric fluid)
- Hydraulic fluids
- Fluorescent lighting fixtures (ballasts)
- Microscopy mounting media and immersion oil
- Lab samples
- Liquid-cooled electric motors
- Switches
- Voltage regulators
- Vacuum pumps.

PCBs were also used in paints, inks, lubricants, sealants, plasticizers, and carbonless copy paper.

If there is suspected PCB contamination identified from the Phase I investigation, the proper procedures for characterizing the extent of contamination should be made part of the sampling and analysis plan for Phase II activities. The following EPA documents, *Verification of PCB Spill Cleanup by Sampling and Analysis* (EPA 560/5-85-026) and the *Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup* (EPA 560/5-86-017), provide insight on sampling methods used to characterize PCB contamination. There are also field screening techniques to test for the presence of PCBs, such as Clor-N-Soil and Chlor-N-Oil, but laboratory analysis should be instituted to confirm PCB concentration before any remediation or disposal actions are taken. The field screening techniques are a good indicator used for confirming the presence of PCBs rather than performing an all-encompassing PCB sampling event, which can be costly. For additional sources of information on PCB sampling, refer to Resources at the end of this section.

PCB Spills

Disposal of PCBs is defined in 40 CFR §761.3 as intentionally or accidentally discarding, throwing away, or otherwise completing or terminating the useful life of PCBs and PCB-containing materials. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB-containing materials. Any release of PCBs to the environment greater than 50 parts per million (ppm) is considered a prohibited act of disposal as defined in the regulations. Facilities are required to report spills of more than 10 pounds (4.56 kg) of PCBs of concentrations of 50 ppm to the EPA regional office. Spills of greater than 1 pound (0.45 kg) must be cleaned up.

The federal regulations stipulate a Spill Cleanup Policy at 40 CFR Part 761, Subpart G, that is applicable to spills which occurred after May 4, 1987. For old spills that were discovered after the effective date of this policy (e.g., discovered as a result of a Phase I investigation) but could have occurred before the effective date of the policy, cleanup requirements are established at the discretion of EPA, usually through its regional offices.

There are two types of PCB spills: a low-concentration spill from a source concentration of PCBs from 50 to 500 ppm, and a high-concentration spill from a source of 500 ppm or greater. In the event that the source of a PCB spill is unknown, the spill is cleaned up based on the concentration of the contaminated material.

- For low-concentration spills, refer to the cleanup requirements at 40 CFR §761.125(b)
- For high-concentration spills, refer to the cleanup requirements at 40 CFR §761.125(c).

It is important to contact the local or state environmental authority. In many cases, the local and state authorities have cleanup requirements that are more stringent than federal regulations. Most likely, this is reflected in the definition of “PCB contaminated.” TSCA’s range is 50 to 500 ppm, whereas some states define this as 5 to 500 ppm.

Compliance with the Spill Cleanup Policy may prevent enforcement action and any need for additional cleanup under TSCA. However, if the cleanup is required under RCRA, CERCLA, or other statutes, then different standards, other than those imposed by TSCA may be applicable.

Disposal Requirements

A uniform hazardous waste manifest, EPA Form 8700-22, must be prepared if PCB waste is being transported off-site. For each shipment of manifested PCB waste a disposal facility accepts, the owner or operator of the facility must prepare a Certificate of Disposal. Refer to 40 CFR §§761.60 and 761.218 for specific disposal requirements.

The Agency has developed a Quick Reference Fact Sheet, Lighting Fixture Management Options, EPA No. EPA/200-f-94-008, containing information on the management of fluorescent light fixture ballasts containing PCBs. The fact sheet contains statutory requirements, management options, packing, labeling, transporting, storing, recordkeeping, and management

costs. Also, the Office of Administration has an internal memorandum for the disposal of lighting fixtures that should be referenced. The subject memorandum, Lighting Fixture Disposal Guidance Strategy, dated June 15, 1995, provides guidance to encourage energy-efficient lighting upgrades while minimizing any potential impacts on the environment.

Resources

The following resources may assist in complying with TSCA regulations.

- 40 CFR Part 761, Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
- *PCB Q & A Manual*, EPA, Office of Pollution Prevention and Toxics, 1994
- 40 CFR Part 761 Subpart G, PCB Spill Cleanup Policy
- Lighting Fixture Management Options, Quick Reference Fact Sheet, EPA No. EPA/200-F-94-008, September 1994
- TSCA Assistance Informational Hotline (202) 554-1404

Asbestos

Under TSCA, EPA regulates the use of asbestos in commerce and has issued standards for both controlling its handling and restricting its use. Congress amended TSCA in 1986 by adding a new Title III, AHERA, which required EPA to conduct a study to determine the extent of human health risks posed by asbestos in public and commercial buildings. The EPA responded in February 1988 by sending Congress a study on asbestos-containing materials (ACM) in public buildings. On November 28, 1990, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) was enacted. Section 15 of ASHARA amended AHERA to require accreditation for any person who inspects for ACM in a public or commercial building, or who designs or conducts a response action with respect to friable ACM in such a building.

AHERA defines “public and commercial buildings” as the interior space of any building which is not a school building, except that the term does not include any residential apartment building of fewer than 10 units or detached single-family homes. Interior space includes exterior hallways connecting buildings, porticos, and mechanical systems used to condition interior space. Examples of public and commercial buildings are government-owned buildings, colleges, museums, airports, hospitals, churches, preschools, stores, warehouses, and factories.

Federal regulations define an inspection to mean those activities undertaken to specifically determine the presence and/or location, or to assess the condition of friable or non-friable asbestos-containing building material (ACBM) or suspected ACBM by either visual or physical examination, or by collecting samples of such material. Therefore, if asbestos surveys or sampling is conducted at an EPA facility, the individual(s) performing the survey/sampling should be accredited. Training requirements include:

- Individuals performing asbestos related work must take a four-day, 32-hour EPA-approved training course consisting of topics such as potential health effects of asbestos exposure, the use of personal protective equipment, and state-of-the-art work practices
- A contractor/supervisor must take a five-day, 40-hour EPA-approved course
- Inspectors take a three-day course
- Management planners take a two-day course
- Project designers take a three-day course.

ASHARA does not require building owners to conduct inspections for asbestos-containing materials in public and commercial buildings. However, should the owner decide to conduct an inspection, then he or she must use an inspector who is accredited.

CLEAN AIR ACT AND NESHAP

In addition to TSCA, regulations under other laws apply to asbestos. The Clean Air Act requires U.S. EPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants known to be hazardous to human health. The U.S. EPA established National Emission Standards for Hazardous Air Pollutants (NESHAP) and promulgated the asbestos NESHAP in 40 CFR Part 61, Subpart M. The subpart addresses demolition and renovation of facilities, and asbestos waste transport and disposal. The regulations require owners/operators to notify the applicable state and local agencies and/or U.S. EPA regional offices before demolition or renovation of a building occurs which contain a certain threshold amount of asbestos.

Although the NESHAP has not been revised to alter its applicability to friable and nonfriable ACM, nonfriable asbestos materials are now classified as either Category I or Category II material:

- *Category I* material is defined as asbestos-containing resilient floor covering, asphalt roofing products, packings and gaskets. Asbestos-containing mastic is also considered a Category I material
- *Category II* material is defined as all remaining types of non-friable ACM not included in Category I that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable asbestos-cement products such as transite are an example of Category II material.

The asbestos NESHAP specifies that Category I materials which are not in poor condition and not friable prior to demolition do not have to be removed, except where demolition will be by intentional burning. However, regulated asbestos-containing materials (RACM) and Category II

materials that have a high probability of being crumbled, pulverized, or reduced to powder as part of demolition must be removed before demolition begins.

Surveys and Sampling

If ACM is identified as a suspected area of concern in the Phase I EDDP report, the ACM in the building must be disclosed to the future occupant. Prior to real property transfer, all available information on the existence, extent, and condition of ACM should be incorporated into the EDDP reports or other appropriate documents to be provided to the landlord or future occupant. The EDDP reports should include:

- Reasonably available information on the type, location, and condition of asbestos in any building or improvement on the property
- Any results of testing for asbestos
- A description of any asbestos control measures taken for the property
- Any available information on costs or time necessary to remove all or any portion of the remaining ACM; however, special studies or tests to obtain this material are not required
- Results of a site-specific update of the asbestos inventory performed to revalidate the condition of ACM.

If the presence of asbestos is suspected and an asbestos survey has not been performed or is not available, an asbestos survey should be completed. The occupancy agreement will determine who is responsible for performing the survey. If EPA owns or is responsible for the management of the facility, then EPA will perform the survey. If EPA is a tenant to a landlord, such as GSA, then the landlord is responsible for performing any surveys. However, the landlord may choose not to perform a survey at the time EPA vacates the facility.

The resources provided to perform an asbestos survey at an EPA- owned or managed facility will depend on the scope of the survey. If an asbestos survey exists but it is limited or dated, then the scope of additional surveying is probably small scale, and therefore, the EPA program operating at the facility will be responsible. However, if an asbestos survey has not been performed and there are many areas of suspected ACM, then FMSD and SHEMD should be contacted for assistance in developing a statement of work and identifying funding resources. In some cases, EPA may opt not to perform an asbestos survey and disclose the suspected asbestos to the future occupant.

ACM should be remedied prior to real property transfer only if it is of a type and condition that is not in compliance with applicable laws, regulations, and standards, or if it poses a threat to human health at the time of transfer of the property. An agreement may be reached with the landlord or future occupant on the appropriate asbestos abatement measures to be taken.

If asbestos is suspected, it is important that the potential health risk is appropriately addressed in the sampling and analysis plan, and in particular, the health and safety plan. Therefore, individuals performing any demolition or renovation activities as part of Phase II or III activities are aware of the potential hazards during abatement. As mentioned previously in this section, all individuals performing asbestos surveys or sampling must be certified in accordance with AHERA. There are a number of resources listed at the end of this section to help plan for asbestos sampling and pre-abatement activities. The manual, *Demolition Practices Under the Asbestos NESHAP* (EPA 340/1-92-013), can assist in planning for demolition activities.

Resources

The following resources may assist in complying with closure requirements concerning asbestos.

- 40 CFR §1910.1001, which applies to all occupational exposures to asbestos in all industries covered by the Occupational Safety and Health Act, except for construction work as defined in 29 CFR §1910.12(b). Exposure to asbestos in construction work is covered by 29 CFR §1926.1101
- 40 CFR Part 763, Asbestos Abatement Projects
- EPA 340/1-92-013, *Demolition Practices Under the Asbestos NESHAP*. This manual is designed to assist the asbestos NESHAP inspector in identifying practices that normally do or do not make Category I nonfriable ACM become RACM
- 29 CFR §1926.58, Asbestos Standard of the Occupational Safety and Health Administration
- EPA Region 5 Asbestos Program Overview which can be accessed via the Internet at “<http://www.epa.gov/reg5foia/asbestos/index.html>”
- Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance, EPA Publication No. 340/1-90-018, December 1990
- *Managing Asbestos In Place*, EPA Publication No. 20-T-2003, July 1990.

Appendix D
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Appendix D

Copy of 40 CFR Part 373 and CERCLA Section 120(h)

PART 373—REPORTING HAZARDOUS SUBSTANCE ACTIVITY WHEN SELLING OR TRANSFERRING FEDERAL REAL PROPERTY

Sec.

- 373.1 General Requirement.
- 373.2 Applicability.
- 373.3 Content of notice.
- 373.4 Definitions.

AUTHORITY: Section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S. C. 9601 *et seq.*

SOURCE: 55 CFR 14212, Apr. 16, 1990, unless otherwise noted.

§ 373.1 General requirement.

After the last day of the six month period beginning on April 16, 1990, whenever any department, agency, or instrumentality of the United States enters into any contract for the sale or other transfer of real property which is owned by the United States and at which, during the time the property was owned by the United States, any hazardous substance was stored for one year or more, known to have been released, or disposed of, the head of such department, agency, or instrumentality must include in such contract notice of the type and quantity of such hazardous substance and notice of the time at which such storage, release, or disposal took place, to the extent such information is available on the basis of a complete search of agency files.

§ 373.2 Applicability.

(a) Except as otherwise provided in this section, the notice required by 40 CFR 373.1 applies whenever the United States enters into any contract for the sale or other transfer of real property which is owned by the United States and on which any hazardous substance was stored for one year or more, known to have been released, or disposed of.

(b) The notice required by 40 CFR 373.1 for the storage for one year or more of hazardous substances applies only when hazardous substances are or have been stored in quantities greater than or equal to 1000 kilograms or the hazardous substance's CERCLA reportable quantity found at 40 CFR 302.4, whichever is greater. Hazardous substances that are also listed under 40 CFR 261.30 as acutely hazardous wastes, and that are stored for one year or more, are subject to the notice requirement when stored in quantities greater than or equal to one kilogram.

(c) The notice required by 40 CFR 373.1 for the known release of hazardous substances applies only when hazardous substances are or have been released in quantities greater than or equal to the substance's CERCLA reportable quantity found at 40 CFR 302.4

§ 373.3 Content of notice

The notice required by 40 CFR 373.1 must contain the following information:

(a) The name of the hazardous substance; the Chemical Abstracts Services Registry Number (CASRN) where applicable; the regulatory synonym for the hazardous substance, as listed in 40 CFR 302.4, where applicable; the RCRA hazardous waste number specified in 40 CFR 261.30, where applicable; the quantity in kilograms and pounds of the hazardous substance that has been stored for one year or more, or known to have been released, or disposed of, on the property, and the date(s) that such storage, release, or disposal took place.

(b) The following statement, prominently displayed: "The information contained in this notice is required under the authority of regulations promulgated under section 120(h) of the Comprehensive Environmental Response, Liability, and Compensation Act (CERCLA or "Superfund") 42 U.S.C. section 9620(h)."

§ 373.4 Definitions.

For the purpose of implementing this regulation, the following definitions apply:

(a) *Hazardous substances* means that group of substances defined as hazardous under CERCLA 101(14), and that appear at 40 CFR 302.4.

(b) *Storage* means the holding of hazardous substances for a temporary period, at the end of which the hazardous substance is either used, neutralized, disposed of, or stored elsewhere.

(c) *Release* is defined as specified by CERCLA 101(22).

(d) *Disposal* means the discharge, deposit, injection, dumping, spilling, leaking or placing of any hazardous substance into or on any land or water so that such hazardous substance or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwater.

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION,
AND LIABILITY ACT (42 U.S.C. §9620)—SECTION 120(h)**

(h) Property transferred by Federal agencies

(1) Notice

After the last day of the 6-month period beginning on the effective date of regulations under paragraph (2) of this subsection, whenever any department, agency, or instrumentality of the United States enters into any contract for the sale or other transfer of real property which is owned by the United States and on which any hazardous substance was stored for one year or more, known to have been released, or disposed of, the head of such department, agency, or instrumentality shall include in such contract notice of the type and quantity of such hazardous substance and notice of the time at which such storage, release, or disposal took place, to the extent such information is available on the basis of a complete search of agency files.

(2) Form of notice; regulations

Notice under this subsection shall be provided in such form and manner as may be provided in regulations promulgated by the Administrator. As promptly as practicable after October 17, 1986, but not later than 18 months after October 17, 1986, and after consultation with the Administrator of the General Services Administration, the Administrator shall promulgate regulations regarding the notice required to be provided under this subsection.

(3) Contents of certain deeds

After the last day of the 6-month period beginning on the effective date of regulations under paragraph (2) of this subsection, in the case of any real property owned by the United States on which any hazardous substance was stored for one year or more, known to have been released, or disposed of, each deed entered into for the transfer of such property by the United States to any other person or entity shall contain—

- (A) to the extent such information is available on the basis of a complete search of agency files—
- (i) a notice of the type and quantity of such hazardous substances,
 - (ii) notice of the time at which such storage, release, or disposal took place, and

(iii) a description of the remedial action taken, if any;

(B) a covenant warranting that—

- (1) all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer, and
- (ii) any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States; and

(C) a clause granting the United States access to the property in any case in which remedial action or corrective action is found to be necessary after the date of such transfer.

The requirements of subparagraph (B) shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to such real property. For purposes of subparagraph (B)(i), all remedial action described in such subparagraph has been taken if the construction and installation of an approved remedial design has been completed, and the remedy has been demonstrated to the Administrator to be operating properly and successfully. The carrying out of long-term pumping and treating, or operation and maintenance, after the remedy has been demonstrated to the Administrator to be operating properly and successfully does not preclude the transfer of the property.

(4) Identification of uncontaminated property

- (A) In the case of real property to which this paragraph applies (as set forth in subparagraph (E)), the head of the department, agency, or instrumentality of the United States with jurisdiction over the property shall identify the real property on which no hazardous substances and no petroleum products or their derivatives were stored for one year or more, known to have been released, or disposed of. Such identification shall be based on an investigation of the real property to determine or discover the obviousness of the presence or likely presence of a release or threatened release of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil, on the real property. The identification shall consist, at a minimum, of a review of each of the following sources of information concerning the current and previous uses of the real property:
- (i) A detailed search of Federal Government records pertaining to the property.
 - (ii) Recorded chain of title documents regarding the real property.
 - (iii) Aerial photographs that may reflect prior uses of the real property and that are reasonably obtainable through State or local government agencies.
 - (iv) A visual inspection of the real property and any buildings, structures, equipment, pipe, pipeline, or other improvements on the real property, and a visual inspection of properties immediately adjacent to the real property.
 - (v) A physical inspection of property adjacent to the real property, to the extent permitted by owners or operators of such property.
 - (vi) Reasonably obtainable Federal, State, and local government records of each adjacent facility where there has been a release of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil, and which is likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil, on the real property.
 - (vii) Interviews with current or former employees involved in operations on the real property.

Such identification shall also be based on sampling, if appropriate under the circumstances. The results of the identification shall be provided immediately to the Administrator and State and local government officials and made available to the public.

- (B) The identification required under subparagraph (A) is not complete until concurrence in the results of the identification is obtained, in the case of real property that is part of a facility on the National Priorities List, from the Administrator, or, in the case of real property that is not part of a facility on the National Priorities List, from the appropriate State official. In the case of a concurrence which is required from a State official, the concurrence is deemed to be obtained if, within 90 days after receiving a request for the concurrence, the State official has not acted (by either concurring or declining to concur) on the request for concurrence.
- (C) (i) Except as provided in clauses (ii), (iii), and (iv), the identification and concurrence required under subparagraphs (A) and (B), respectively, shall be made at least 6 months before the termination of operations on the real property.
- (ii) In the case of real property described in subparagraph (E)(i)(ii) on which operations have been closed or realigned or scheduled for closure or realignment pursuant to a base closure law described in subparagraph (E)(ii)(L) or (E)(ii)(II) by the date of the enactment of the Community Environmental Response Facilitation Act, the identification and concurrence required under subparagraphs (A) and (B), respectively, shall be made not later than 18 months after such date of enactment.
- (iii) In the case of real property described in subparagraph (E)(i)(II) on which operations are closed or realigned or become scheduled for closure or realignment pursuant to the base closure law described in subparagraph (E)(ii)(II) after the date of the enactment of the Community Environmental Response Facilitation Act, the identification and concurrence required under subparagraphs (A) and (B), respectively, shall be made not later than 18 months after the date by which a joint resolution disproving the closure or realignment of

- the real property under section 2904(b) of such base closure law must be enacted, and such a joint resolution has not been enacted.
- (iv) In the case of real property described in subparagraphs (E)(i)(II) on which operations are closed or realigned pursuant to a base closure law described in subparagraph (E)(ii)(III) or (E)(ii)(IV), the identification and concurrence required under subparagraphs (A) and (B), respectively, shall be made not later than 18 months after the date on which the real property is selected for closure or realignment pursuant to such a base closure law.
- (D) In the case of the sale or other transfer of any parcel of real property identified under subparagraph (A), the deed entered into for the sale or transfer of such property by the United States to any other person or entity shall contain—
- (i) a covenant warranting that any response action or corrective action found to be necessary after the date of such sale or transfer shall be conducted by the United States; and
- (ii) a clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary after such date at such property, or such access is necessary to carry out a response action or corrective action on adjoining property.
- (E) (i) This paragraph applies to—
- (I) real property owned by the United States and on which the United States plans to terminate Federal Government operations, other than real property described in subclause (II); and
- (II) real property that is or has been used as a military installation and on which the United States plans to close or realign military operations pursuant to the base closure law.
- (ii) For purposes of this paragraph, the term “base closure law” includes the following:
- (I) Title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Public Law 100-526; 10 U.S.C. 2687 note).
- (II) The Defense Base Closure and Realignment Act of 1990 (part A of title XXIX of Public Law 101-510; 10 U.S.C. 2687 note).
- (III) Section 2687 of title 10, United States Code.
- (IV) Any provision of law authorizing the closure or realignment of a military installation enacted on or after the date of enactment of the Community Environmental Response Facilitation Act.
- F) Nothing in this paragraph shall affect, preclude, or otherwise impair the termination of Federal Government operations on real property owned by the United States.
- (5) Notification states regarding certain issues**
- In the case of real property owned by the United States, on which any hazardous substance or any petroleum product or its derivatives (including aviation fuel and motor oil) was stored for one year or more, known to have been released, or disposed of, and on which the United States plans to terminate Federal Government operations, the head of the department, agency, or instrumentality of the United States with jurisdiction over the property shall notify the State in which the property is located of any lease entered into by the United States what will encumber the property beyond the date of termination of operations on the property. Such notification shall be made before entering into the lease and shall include the length of the lease, the name of person to whom the property is leased, and a description of the uses that will be allowed under the lease of the property and buildings and other structures on the property.

Appendix E
Examples of EPA Laboratory and Facility Equipment
or Operations That May Require
Deactivation and Decommissioning

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Appendix E
Examples of EPA Laboratory and Facility Equipment or Operations
that May Require Deactivation and Decommissioning

Hazardous Materials and Waste	
- acid waste drain and neutralization pit - biological species testing chemicals - central hazardous waste accumulation areas - chemical adoption program storage areas - chemical storage areas - containers/pipes for film processing racks - containers/pipes for used fix solution (silver) - containers/pipes for bleach replacement for color film processor - elementary neutralization systems	- graphics operations - hazardous materials/waste storage building - lead-based paint - pathological/infectious waste treatment devices - pesticide storage areas - refrigeration systems and equipment - refrigerant recovery systems - satellite hazardous waste accumulation areas
Tanks, Containers, and Other Storage	
- acute hazardous waste containers - compressed gas cylinder storage - compressed gas cylinders - control tanks - corrosive solution containers - culture and bioassay tanks - drum storage area surfaces - effluent collection container - fuel oil tank - hazardous waste containers - head tanks - indoor drum storage area - indoor drum storage area - oil/water separators	- medical waste containers - modular hazardous waste storage facility - organic solvent containers - outdoor solvent storage building - paint and supply storage areas - radioactive storage facility - satellite accumulation area, surfaces - staging area - storage cabinets, sheds, surfaces - surplus property storage facility - underground and aboveground storage tanks - vehicular storage/maintenance areas and surfaces
Environmental Media (Soil, Groundwater, Wetlands)	
- acid neutralization pits - chemical groundwater injection studies - effluent discharge pipe systems - sewer system	- test streams - test stream sediment - testing trailers and mobile laboratories
Radioactive Materials	
- test streams - test stream sediment - test plots and research media - inductively coupled plasma atomic emission - sealed sources/isotope solutions - radiological waste/materials storage areas - radiological treatment systems	- atomic absorption spectrophotometer - gas chromatograph with electron capture - radioactive contaminated floors, wall, items - radioisotope fume hood - radioisotope glove boxes - radiological fume hood air ducts

**Examples of EPA Laboratory and Facility Equipment or Operations
that May Require Deactivation and Decommissioning (continued)**

Polychlorinated Biphenyls	
- PCB-contaminated ballast, animal bedding/ cages	- PCB lysimeters
- PCB-contaminated samples & waste containers	- PCB transformers or electrical equipment
- pesticide storage cabinets	- PCB waste storage areas
	- test plots and research media
Asbestos	
- asbestos analysis equipment	- asbestos samples
- asbestos-containing material	
Indoor Air	
- laboratory exhaust vents	- vent pipes
- laboratory exposure chambers	
Laboratory Equipment and Pilot/Bench-Scale Experiments	
- acid wash bath equipment/wastewater	- inductively coupled plasma atomic emission spectroscopbers
- atomic absorption spectrophotometer	- ion-exchange system
- boiler	- mass spectrometer
- five-chamber chemical combustor apparatus	- ozone regeneration system
- fluid modeling facility	- radioactive contaminated floors, walls, items
- laboratory fume hood stacks	- sanitary treatment plant
- laboratory fume hoods	- scintillation counting devices
- gas chromatographs with electron capture detectors	- sealed sources/isotope solutions
- glassware washing areas	- solvent extraction and distillation flasks
- HPLC instrumentation	- wastewater treatment system and piping
	- wipe test equipment
Building Systems	
- boilers	- NPDES effluent pipes
- building water supply system	- oil-fired steam boiler
- emergency power generators	- pathological incinerator
- exhaust stacks	- rotary kiln incinerator system
- fluorescent lights and ballast	- sanitary sewer system and drains
- furnace equipment	- scrubber water accumulation tanks
- HVAC systems (CFCs, cooling tower)	- septic system
- natural gas-fired boilers	- wastewater treatment system
Other	
- drinking fountains failing to meet lead standards	- spill-control equipment
- dry system drainage	- sumps
- fire extinguishers/suppression equipment	- water deionizing systems
- fire-detection equipment	- wet laboratory building
- personal protective equipment	- wood and metal shops

Considerations for Equipment Deactivation and Decommissioning

“Deactivation” is the process of placing a facility and its systems in a safe and stable condition until the closure activities are completed to protect workers, the public, and the environment. All major processes, equipment, and operations at the Environmental Protection Agency (EPA) facility should be deactivated during Phase II if they have not already been deactivated. Filters and other such removable and replaceable equipment that contain radioactive or hazardous materials must be removed and disposed of properly. The process systems should be cleaned and all process materials removed, including hazardous and nonhazardous sludges and residues. Laboratory experiments and associated containers and equipment should be properly ceased, dismantled, and discarded. Deactivation is particularly important if environmental contamination or hazards will not be addressed until after the lease is terminated or the facility is vacated. Other examples of deactivation activities include:

- Removing fuel and other products from storage tanks
- Draining and/or de-energizing non-essential systems
- Emptying and flushing all process systems and pipelines
- Removing all radioactive, hazardous, and chemical materials
- Discontinuing all non-essential utility services, including electric, gas, fuel oil, propane, steam
- Removing and dismantling all temporary and portable structures, including trailers, laboratories, and equipment
- Decontaminating, cleaning, removing, or disposing of large portable containers.

The facility should document the deactivation activities performed in a brief report to quantify and identify the equipment deactivated, the final equipment condition, and the method of deactivation. All operation and maintenance manuals and technical drawings of equipment and process left in place at the facility should be included as attachments to the report. This documentation will support future closure activities conducted during Phases II and III, and will prevent duplicating effort by eliminating uncertainties about equipment condition. Also, a documented deactivation will provide stakeholders and future property recipients with information on the safe and stable condition of the process and facility systems. The scope of deactivation is not intended to include the removal of contamination that is part of the buildings’ infrastructure, such as asbestos, or the decontamination of complex laboratory equipment or process components contaminated with radiological or hazardous substances. These complex and laborious activities should be performed only after sampling and analysis has identified the extent of contamination and evaluated closure alternatives.

Under certain circumstances, the situation may arise where deactivation activities are not performed or documented. These circumstances may include a facility without experienced

personnel or an authorized contract to perform deactivation. If deactivation activities are not performed or documented, a surveillance and monitoring evaluation should be performed. Surveillance and monitoring includes routine maintenance and inspection of the facility and related property with verified or suspected environmental and safety hazards. Additional information on surveillance and monitoring is provided in Section A-03 of this document.

Ozone-Depleting Substances (ODSs)

Because they deplete stratospheric ozone, chlorofluorocarbons (CFCs) have been banned from production in the United States through the 1990 Clean Air Act (CAA) Amendments. The ban officially took effect January 1, 1996, and extends with different phaseout dates to other ozone-depleting chemicals such as halons, hydrochlorofluorocarbons (HCFCs), and some chlorinated solvents. CFCs have been used by the Agency as refrigerants in large and small refrigeration systems throughout the nation at the Agency's research facilities and program offices.

In July 1992, ozone-depleting substances (ODS) refrigerant venting became illegal during the service, maintenance, repair, or disposal of appliances or industrial process cooling equipment. EPA compliance officers conduct random inspections of facilities using CFCs to ensure the facilities are operating in strict compliance with federal regulations. Offenders, whether public or private, are assessed fines up to \$27,500 per day per violation (61 FR 69360; December 31, 1996). To date, no federal facilities have been fined for violations of these requirements.

Federal regulations governing the use of ODSs in commerce do not require sellers of equipment or facilities with CFC-containing equipment to provide documentation of the sale of CFCs as is required of free-product ODS distributors. Also, these regulations do not require the removal of CFCs or HCFCs from refrigeration or process cooling equipment before a transfer of real property. However, the regulations mandate that the liability for violations occurring before actual property transfer fall to the prior owner of the CFC-containing equipment. Therefore, EPA facilities must protect against leakages or improper venting of ODS material. In this way, EPA guards against undue liability from the transfer of ODS-containing equipment in property transfer activities.

EPA's Use of CFCs and HCFCs

EPA's CFC use falls predominantly within the refrigeration usage area. EPA uses the largest amount of CFCs in in-house systems such as central plant chillers. In 1993, EPA began a program to remove CFCs from these systems and replace the CFCs with HFC-134a in most systems where practicable. EPA's most predominant use of CFCs is in small systems, such as refrigerators and freezers. As part of its pollution prevention efforts, EPA is examining opportunities to replace CFCs used in these small appliance applications. For more information on EPA's efforts to reduce the Agency's use of CFCs, refer to *EPA's Pollution Prevention Report to Congress 1996* or *EPA's CFC Management Reference Manual*, which can be obtained by contacting EPA's Facilities Management and Services Division (FMSSD) or Safety, Health and Environmental Management Division (SHEMD).

Requirements for ODS Removal

For large, non-hermetically sealed ODS-containing equipment (such as a central plant and backup chillers), the Agency's policy is to remove the refrigerant and place it in a secure and stable state. To accomplish the removal of ODSs from facility chillers, the facility needs to have the proper certified recycling equipment, certification for technicians, and knowledge of storage and transportation procedures. Additional information on these evacuation requirements can be found in the following section of this appendix, *Evacuation Requirements and Equipment Specifications*.

Small systems that are hermetically sealed do not need to undergo special deactivation procedures. If they are being disposed of locally, the EPA facility will need to provide documentation to the disposal agent that the refrigerants have been recovered according to EPA requirements. The disposal agent will keep this record on file. EPA may recover used refrigerants before disposal and must follow the procedures outlined below to recycle used refrigerants.

Evacuation Requirements and Equipment Specifications

In the past, a major contributor to ozone depletion has been the release of used refrigerants, into the environment, from evacuation equipment during changeout of refrigerants. To prevent or minimize the amount of refrigerants venting into the environment during this process, the Clean Air Act Amendments of 1990 required the use of approved and certified refrigerant recovery and recycling equipment.) When evacuating refrigeration equipment except for Mobile Vehicular Air Conditioners (MVACs) or small equipment, evacuation equipment must be able to remove the refrigerant according to the relative vacuum levels presented in the table below under the conditions of ARI Standard 740-1993, Performance of Refrigeration Recovery, Recycling, and/or Reclaim Equipment (see Appendix B of 40 CFR Part 82). Under the 1990 Amendments to the CAA, private citizens are authorized to seek civil penalties for violations of the Act. Plaintiffs must provide at least 60 days notice of the action to the Administrator, the state, and the alleged violator (CAA §304). To reinforce how serious Congress is about enforcement of the CAA, it has authorized EPA to pay a "bounty" of up to \$10,000 to anyone who provides information that leads to a "criminal conviction or a judicial or administrative civil penalty" (CAA §113 (f)).

**Evacuation Levels Required of Certified
Recovery or Recycling Equipment**

Types of Appliances	Inches of Mercury Vacuum	
	Equipment manufactured before 11/15/93	Equipment manufactured after 11/15/93
High-pressure systems containing less than 200 pounds of HCFC-22	0	0
High-pressure systems containing more than 200 pounds of HCFC-22	4	10
Other high-pressure systems containing less than 200 pounds of refrigerant	4	10
High-pressure systems containing more than 200 pounds of refrigerant	4	15
Very high-pressure systems	0	0
Low-pressure systems	25 (mm Hg absolute)	25 (mm Hg absolute)

Evacuation equipment may also be certified if an approved third party can demonstrate that the equipment is able to meet specific requirements outlined in 40 CFR Part 82, Subpart F. Each piece of equipment certified by EPA must be labeled as such by the manufacturer or importer of the equipment. Effective November 15, 1993, evacuation technicians cannot use equipment that has not been certified according to the requirements set forth in 40 CFR Part 82, Subpart F.

When removing refrigerants from small appliances, the evacuation equipment must be able to recover 90 percent of the refrigerant if the system is functioning and intact and the evacuation equipment was manufactured before November 15, 1993. When the small appliance is intact and functioning, and the evacuation equipment was manufactured after November 15, 1993, the evacuation equipment must be able to recover 80 percent of the refrigerant. When the compressor of the appliance is not functioning, the evacuation equipment must be able to recover 80 percent of the refrigerant. All evacuation equipment used for small appliance refrigerant recovery must be able to evacuate to four inches of mercury vacuum. For further details on evacuation and equipment specification requirements, please refer to 40 CFR Part 82, Subpart F.

Types of Technician Certification

Effective November 14, 1994, persons who maintain, service, repair, or dispose of appliances except MVACs must receive special EPA-approved refrigerant handling certifications. There are four types of certification depending on the type of ODS-containing appliance serviced. They are:

- Type I, for persons who maintain, service, or repair small appliances
- Type II, for persons who maintain, service, repair, or dispose of high- or very high-pressure ODS-containing appliances except MVACs and small appliances
- Type III, for persons who maintain, service, repair, or dispose of low-pressure appliances

- Universal, for persons who maintain, service, repair, or dispose of any type of low- or high-pressure ODS-containing appliance.

Technicians must be able to provide proof of certification to EPA inspection officials and may need to be recertified at some future date as determined by the EPA Administrator.

Storage and Transportation Requirements

EPA does not regulate the storage or transportation of refrigerants under the 1990 CAA Amendments. These handling requirements are regulated by the Occupational Safety and Health Administration (OSHA) and the Department of Transportation (DOT). OSHA requires that in-plant handling, storage, and use of compressed gases must follow the guidance established in the Compressed Gas Association's Pamphlet P-1-1965, which has been incorporated by reference into 29 CFR §1910.6. The filling and transportation of compressed gas refrigerants is regulated by DOT in 49 CFR Parts 171 to 177. These requirements cover:

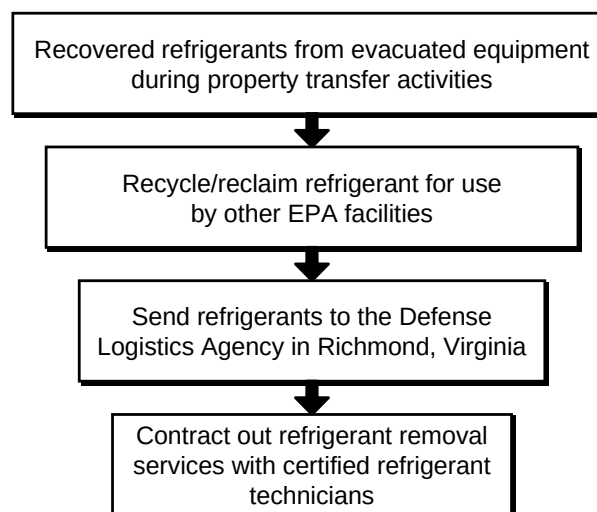
- Compressed gases transportation requirements (49 CFR §173.315)
- Charging of cylinders with liquefied compressed gases (49 CFR §173.304)
- Exemptions for the transportation of refrigerating machines and precharging tubes (49 CFR §173.307).

Hierarchy of ODS Transfer Options

Deactivation activities will result in the accumulation of used CFC refrigerants at facility locations. The Agency has established a priority system to ensure that recovered refrigerants are either efficiently reused or properly disposed of. The following flow chart demonstrates the Agency's hierarchy for refrigerant reuse.

The Agency's recommended option is first to recycle or reclaim the unused refrigerants. Recycling and reclaiming refrigerant ensures that the facilities have an adequate supply of refrigerant to meet their present and future needs. The next recommended option is evacuating the refrigerant from the equipment and having it transported off-site to the Defense Logistics Agency (DLA) in Richmond, Virginia. This option allows the Agency to retain control over the removal procedures and to transfer the refrigerant to the military's refrigerant Defense Reserve

Priority of Actions for Reuse of Old Refrigerants



for use by the Defense agencies or to set up a refrigerant bank for EPA. DLA has been operating the Defense Reserve since 1993 and now stores between 10 million and 15 million pounds of ODSs. DLA provides recovery cylinders free of charge to agencies that are donating to the refrigerant Defense Reserve. The last recommended option is to initiate a contract with a certified technician or reclamation company to remove the refrigerant from the equipment. If the last option is chosen, the facility must maintain documentation of all transactions involving the transfer of refrigerant off-site. Although complete records of disposal actions are not required by law, it is advisable to maintain these records to demonstrate a clear line of custody.

Resources

Refer to the following resources for further information.

- Compressed Gas Association, Pamphlet P-1-1965
- 40 CFR Part 82, Protection of Stratospheric Ozone
- 49 CFR Parts 171-177, Hazardous Materials Regulations
- 29 CFR Part 1910, Occupational Safety and Health Standards
- EPA publication, *608: The Refrigerant Recycling Rule*, 1994
- EPA publication, *Disposing of Applications with Refrigerants: What You Should Know*, 1993
- Defense Logistic Agency, *Procedures for Turning in Ozone-Depleting Substance to the Defense Reserve*, July 8, 1994.

Appendix F
Office of Administration Letter on Management Responsibility for Transferring EPA Real
Property

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Appendix F

OA Letter on Management Responsibility for Transferring EPA Real Property

MAY 29 1996

MEMORANDUM

SUBJECT: Management Responsibility for Transferring EPA Real Property ^{Signed}

FROM: John C. Chamberlin, Director
Office of Administration

TO: Assistant Administrators
Regional Administrators
OARM Directors (Cincinnati and RTP)

The purpose of this correspondence is to outline the management challenges in transferring real property: managing and avoiding potential environmental liability by complying with the Community Environmental Response Facilitation Act (CERFA). New construction, lease termination, and changes in program mission may result in an EPA decision to terminate its interest in real property and vacate owned or leased laboratories and other facilities. In transferring real property, EPA program offices must consider the related administrative, personal property relocation, real estate, and environmental requirements.

Facilities management and the program offices are responsible for meeting this challenge, specifically by providing the resources required to implement an environmental due diligence process (EDDP). The EDDP is a three-phased approach developed to comply with CERFA and associated regulations detailed in 40 CFR 373. The three-phased EDDP is currently described in an interim draft document titled, Guidelines for Transferring EPA Real Property and Complying with CERFA. These guidelines, which can be obtained by contacting Facilities Management and Services Division (FMSD) or Safety, Health, and Environmental Management Division (SHEMD), provide additional information on the EDDP responsibilities discussed below.

OA Review
2/1

Once an EPA program office determines that a leased or owned property should be transferred, the senior program manager must provide written notice of this decision to the Office of Administration. The notification initiates the EDDP, which will identify, document, manage, and mitigate the environmental liability for that facility to comply with CERFA. After receiving notification, FMSD and SHEMD will jointly conduct Phase I of the EDDP, which is a preliminary environmental survey and site inspection. Because Phase I is a six- to twelve-month process, program offices must submit notification well in advance of vacating the property. Before EPA vacates any property, FMSD and SHEMD will conduct a pre-vacancy inspection as part of the Phase I EDDP. A pre-vacancy inspection will evaluate whether all personal property has been relocated, all hazardous materials and surplus chemicals have been removed, and all laboratory and facility equipment and systems have been safely shut down. If the Phase I identifies suspected environmental contamination, Phases II and III, sampling and cleanup of any environmental contamination, will be conducted and will be a cooperative effort between FMSD, SHEMD, and the program offices.

The program offices will be responsible for managing and funding sampling and cleanup activities resulting from the program's research activities. Examples of these sampling and cleanup activities may include, but are not limited to, removing and disposing of hazardous materials and surplus chemicals; decontaminating laboratory equipment, cabinets, and surfaces; safe shutdown of all equipment, processes, and operations; and the cleanup of test plots, streams, sediments, and other research media. The program offices are also responsible for relocating all personal property before vacating the premises in coordination with the EDDP. The cost incurred for relocating any personal property left behind is the responsibility of the program offices. The Office of Administration will be responsible for funding facility-related environmental contamination associated with, but not limited to, storage tank systems, buildings and major structures, sewer systems, and utilities. All EDDP sampling and clean up of environmental contamination, regardless of cost, should be coordinated with the Office of Administration/FMSD and SHEMD to eliminate any duplication of effort and to ensure the appropriate allocation of resources.

The scope of real property transfer and environmental conditions will be unique for each EPA facility. A successful real property transfer will require that responsible parties discuss and concur on an action plan that addresses the specific conditions at each EPA-occupied facility. If you have any questions or would like to discuss this correspondence, please

contact Howard Wilson (SHEMD) at 202/260-1646 or Butch Mellen (FMSD) at 202/260-2160.

cc: Rich Lemley
Butch Mellen
Julius C. Jimeno
Howard Wilson
Ann M. Linnertz
Nathaniel Lewis
SHEMP Managers
Facility Managers

bcc: OA Reading File
FMSD Reading File
AEREB Reading File
Booz-Allen
Official File

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Appendix G
Qualifications for Environmental Due
Diligence Process Personnel and Managers

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Appendix G

Qualifications for Environmental Due Diligence Process Personnel and Managers

INTRODUCTION

The Environmental Protection Agency (EPA) is responsible for ensuring personnel and managers are adequately trained and qualified to oversee, perform, or manage the environmental due diligence process (EDDP). EPA must ensure that only qualified contractors perform EDDP activities. In addition, EPA's OA must select an EDDP Project Manager to manage Phase I EDDP activities. The discussions in this appendix assume that due to their primary roles and responsibilities and to the specific and technical nature of activities, the facility manager and Safety, Health and Environmental Management Program (SHEMP) manager will not be designated as the EDDP Project Manager or provide direct oversight of the project. However, it is expected that they will play a supporting role during the entire EDDP. Specific criteria for personnel involved in the EDDP are discussed below.

EDDP PROJECT MANAGER

Personnel performing as the EDDP Project Manager should have either:

- Performed as a SHEMP manager for five years and have a good understanding of the *Guidelines for Acquiring and Transferring EPA Real Property and Complying with the Community Environmental Response Facilitation Act (CERFA)*; and/or
- A degree in a scientific discipline relevant to the EDDP (e.g., environmental engineering, environmental science, geology, chemistry, biology, forestry) and have a good understanding of the *Guidelines for Acquiring and Transferring EPA Real Property and Complying with the Community Environmental Response Facilitation Act (CERFA)*; and/or
- Provided oversight for at least three Phase I EDDPs, environmental due diligence audits (EDDAs), Resource Conservation and Recovery Act (RCRA) or base closures; or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedial investigations/actions.

PHASE I EDDP REVIEW TEAM

Internal or contract personnel performing Phase I site inspections should have at least 12 hours of training in Phase I site assessments or environmental due diligence audits and have both:

- Conducted or participated in at least five EDDPs, environmental due diligence audits (EDDAs), or any combination of these; and

- A degree in a scientific discipline relevant to the EDDP (e.g., environmental science, geology, chemistry, biology, forestry).

Unless there is a comparable internal training program, out-of-agency training is acceptable. Training must include instructions on visual site inspections, record searches, and site owner and personnel interviews.

PHASE I EDDP REVIEWER

Personnel assigned to review Phase I EDDP activities or reports must have similar qualifications as those of the EDDP Project Manager. In addition, EDDP Phase I Reviewers must work in coordination with Facilities Management and Services Division (FMSD) and Safety, Health and Environmental Management Division (SHEMD) personnel.

PHASE II AND III OVERSIGHT PERSONNEL

Personnel who provide oversight for Phases II or III activities must have at least 16 hours of training in environmental closures or have conducted, participated in, or reviewed at least five RCRA or base closures, environmental due diligence audits, CERCLA remedial investigations/remedial actions, Phase I site assessments or any combination, and also have had any additional training deemed necessary by FMSD and SHEMD.

Appendix H
Phase I EDDP Contractor Specifications

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Appendix H

Phase I Environmental Due Diligence Process Contractor Specifications

INTRODUCTION

This section contains the minimum specifications that must be met by any contractor selected to perform Phase I EDDPs for EPA property transfers or closures.

SPECIFICATIONS

General. When selecting a contractor to assist the EPA in performing Phase I EDDPs consider the following general practices:

- Include an explicit scope of work as part of the request for proposals (RFP) and contract
- Conduct interviews with the contractors who meet the standard RFP criteria (including the specific individuals who will be doing the work)
- Review standard work product as part of the proposal process
- Thoroughly verify all professional references.

Criteria. Use the following specific criteria to evaluate potential Phase I contractors.

(1) Firm Experience.

- i. Years: Three (total, all activities)
- ii. Subject Matter Expertise:
 - Environmental science and engineering, including the following disciplines: geology, asbestos management, hazardous materials management, and hydrogeology. Regulatory expertise is also required.
 - Two years of experience conducting Phase I site assessments.
 - Capability to perform Phase II. Requires disciplines such as toxicology, industrial hygiene, chemistry/ risk assessment, and three years experience in conducting Phase II site assessments.

(2) Project Manager Experience.

- i. Years: Five
- ii. Subject Matter Expertise: Environmental Sciences
- iii. Degree: MS or Ph.D.
- iv. Phase I Experience: Two years of experience within the last five years.

- (3) **Team Member Experience.**
- i. Years: Three
 - ii. Subject Matter Expertise: Environmental Sciences
 - iii. Degree: MS or BS
 - iv. Professional Affiliations: Professional Engineer or Geologist Registration preferred, but not necessary.
 - v. Phase I Experience: Two years of experience, within the last three years.
- (4) **Indemnification and Insurance.** The contractor must:
- i. Be willing to indemnify the EPA for the result of its professional and other negligence
 - ii. Possess a minimum limitation of liability to \$1 million
 - iii. Carry limits of errors and omissions insurance of at least \$1 million
 - iv. Carry limits of general liability insurance of at least \$1 million
 - v. Carry workers compensation insurance
 - vi. Provide certificates of insurance (evidencing coverage) for each of the coverages.
- (5) **Conflicts of Interest.** Consultants must not have more than 50 percent of their work coming from developers or real estate leasing groups, the Environmental Protection Agency, or state.
- (6) **Report Quality.**
- i. Report experience should show a similar approach to conducting Phase I as outlined in EPA's guidelines for transferring real property and complying with CERFA.
 - ii. Reports should be readable and comprehensible by the lay person.
 - iii. Reports should explain all conclusions and explain the relevancy and implication of findings to the EPA. Regulatory and some legal issues also should be explained.
- (7) **Size of the Firm.** The contractor must have adequate staff in place to conduct Phase I. It is anticipated that each Phase I will require 1.5 junior staff and 1 senior/project management staff during the course of Phase I.
- (8) **Client Experience.** The contractor shall have at least three years experience conducting Phase I EDDPs.
- (9) **Locations.** The contractor must be easily accessible to the EPA group reviewing the Phase II work assignment.
- (10) **Information Protection.** The contractor must have a program in place for ensuring the confidentiality of information provided by the government. Elements shall include specific standards for labeling information as proprietary and policies for protection of the information, including disciplinary procedures for employees found infringing upon the policy. The contract between the EPA and the contractor must provide that the contractor shall not disclose information obtained from the EPA or related to its relationship with the EPA to third parties without the express consent of the EPA.
-

- (11) **Cost.** Cost shall be reasonable and within the prevailing rates charged by similarly situated contractors.
- (12) **Minority/Woman-Owned Business.** The EPA, as well as other federal agencies, are committed to hiring minority or woman-owned business where all technical qualifications are met.

Evaluation and Balancing. The following factors shall be considered:

- (1) **Primary Criteria.**
- i. Firm and individual consultant experience (i.e., education, work)
 - ii. Insurance and indemnification
 - iii. Report quality
 - iv. Conflict of Interest
- (2) **Secondary Criteria.**
- i. Location
 - ii. Size
 - iii. Confidentiality and document retention programs
- (3) **Additional Criteria to be Considered.**
- i. Use of Subcontractors
 - ii. Formal quality control programs
 - iii. Cost
 - iv. Minority/woman-owned business status

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Appendix I
Pre-Environmental Due Diligence Process Questionnaire

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Appendix I

Pre-Environmental Due Diligence Process Questionnaire

Answer the following questions to the best of your knowledge. If a question does not apply, or if you are unsure of the answer, please indicate so in your response. If possible, please identify which participant responded to the question or set of questions. This will assist in the verification of suspected contamination during the site inspection, investigation, and interview process.

1. List all the personnel involved in the completion of this survey. Include names of any individuals who have experience in operations at your site. This list of contacts will be used to arrange interviews during the site inspection and investigation.
2. Where is the property located (complete address, longitude/latitude, parcel number, or legal description if available)?
3. What is the basis for current Environmental Protection Agency (EPA) real property interests at this location?
4. Is the site located on or near any waterways, schools, or recreational facilities?
5. How large is the property (acreage)?
6. Does the property contain new buildings, improvements, or other modifications since EPA's occupancy?
7. How large are the new structures? What are the ages of the buildings? How are they being used?
8. Who are the current owners and operators? Identify the main contacts for further inquiries.
9. What are the current uses of the subject property?
10. Who were the past owners and operators of the property?
11. What were the past uses of the property? (To the best of your knowledge)
12. Is the current owner or operator aware of any present or past underground or aboveground storage tanks located on or adjacent to the subject property? If yes, can the owner/operator demonstrate that the tanks have been properly closed, installed, certified or that existing tanks are not currently leaking? If underground storage tanks (USTs) or aboveground storage tanks (ASTs) exist, complete the UST questionnaire in Appendix O.

13. Is the owner/operator aware of any landfill (public or private) operators on or adjacent to the subject property? If yes, identify the waste types that were disposed of within the landfill.
14. Is the owner/operator aware of any hazardous substances (e.g., polychlorinated biphenyls (PCBs), asbestos) in any structures, equipment (electrical/mechanical), or on the premises?

Appendix J
United States Geological Survey Offices

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Appendix J United States Geological Survey Offices

Anchorage, AK

Anchorage-ESIC
U.S. Geological Survey
4230 University Drive, Rm. 101
Anchorage, AK 99508-4664
Toll Free Number: 1-888-ASK-USGS
(from Alaska only)
Telephone (907) 786-7011
FAX: (907) 786-7050
E-mail: gfdurocher@usgs.gov

Menlo Park, CA

Menlo Park-ESIC
U.S. Geological Survey
Building 3, MS 532, Rm. 3128
345 Middlefield Road
Menlo Park, CA 94025-3591
Telephone: (650) 329-4309
FAX: (650) 329-5130
TDD: (650) 329-5092
E-mail: wmcesic@usgs.gov

Denver, CO

Denver-ISIC
U.S. Geological Survey
Box 25286, Building 810
Denver Federal Center
Denver, CO 80225
Telephone: (303) 202-4200
FAX: (303) 202-4188
E-mail: infoservices@usgs.gov

USGS Information Services
(Map and Book Sales)
Box 25286
Denver, CO 80225
Telephone: (303) 202-4700 or
1-888-ASK-USGS
FAX: (303) 202-4693

USGS Information Services
(Open-File Report Sales)
Box 25286
Denver, CO 80225
Telephone: (303) 202-4700
FAX: (303) 202-4188

Reston, VA

Reston-ESIC
U.S. Geological Survey
507 National Center
Reston, VA 20192
Toll Free Number: 1-888-ASK-USGS
Telephone: (703) 648-5953
FAX: (703) 648-5548
TDD: (703) 648-4119
E-mail: esicmail@usgs.gov

Rolla, MO

Rolla-ESIC
U.S. Geological Survey
1400 Independence Road, MS 231
Rolla, MO 65401-2602
Telephone: (573) 308-3500
FAX: (573) 308-3615
E-mail: momcesic@usgs.gov

Sioux Falls, SD

Sioux Falls-ESIC
U.S. Geological Survey
EROS Data Center
Sioux Falls, SD 57198-0001
Telephone: (605) 594-6151
FAX: (605) 594-6589
TDD: (605) 594-6933
E-mail: custserv@edcmail.cr.usgs.gov

Washington, DC

Washington DC-ESIC
U.S. Geological Survey
U.S. Department of the Interior
1849 C Street, NW, Rm. 2650
Washington, DC 20240
Telephone: (202) 208-4047
E-mail: ask@usgs.gov

Spokane, WA

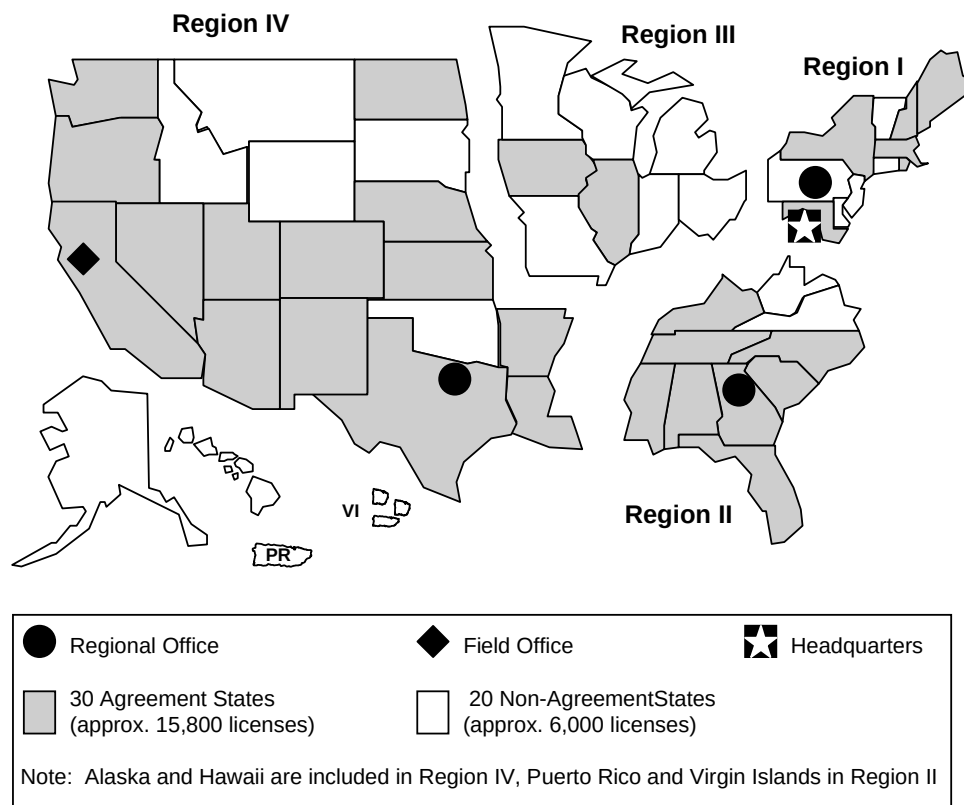
Spokane-ESIC
U.S. Geological Survey
U.S. Post Office Building, Rm. 135
904 West Riverside Avenue
Spokane, WA 99201
Telephone: (509) 353-2524
FAX: (509) 368-3130
TDD: (509) 368-3133
E-mail: esnfic@usgs.gov

Appendix K
Nuclear Regulatory Commission Regional Offices

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Appendix K

Nuclear Regulatory Commission Regional Offices



Headquarters

US Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

or

Two White Flint North
11545 Rockville Pike
Rockville, MD 20852-2738
301-415-7000, 1-800-368-5642

Region I

476 Allendale Road
King of Prussia, PA 19406-1415
610-337-5000, 1-800-432-1156

Region II

61 Forsyth Street, SW, Suite 23T85
Atlanta, GA 30303
404-562-4400, 1-800-577-8510

Region III

801 Warrenville Road
Lisle, IL 60532-4351
630-829-9500, 1-800-522-3026

Region IV

611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064
817-860-8100, 1-800-952-9577

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Appendix L
EPA Toxic Substances Control Act Regional Offices

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Appendix L
EPA Toxic Substances Control Act Regional Offices

Region I	Pesticides, Toxics, & Radiation	(617) 918-1535
Region II	Pesticides & Toxic Substances	(212) 637-3000
Region III	Air, Radiation, and Toxics Branch	(215) 814-2654
Region IV	Air, Pesticides, and Toxics Management Division Pesticides and Toxic Substances Branch	(404) 562-9077
Region V	Toxics Program Section	(312) 353-2000
Region VI	Toxics Section	(214) 665-6714
Region VII	Toxic Substance Prevention & Planning	(913) 551-7020
Region VIII	Toxics Program	(303) 312-6312
Region IX	Toxics Program	(415) 744-1087
Region X	Solid Waste & TSCA Unit	(206) 553-1716

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Appendix M
EPA Regional Asbestos Coordinator's Offices

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Appendix M
EPA Regional Asbestos Coordinator's Offices

EPA Region I

(CT, MA, ME, NH, RI, VT)
One Congress Street
Suite 110, Mailcode CPT
Boston, MA 02114
(617) 918-1524

EPA Region II

(NJ, NY, Puerto Rico, Virgin Islands)
290 Broadway
21st. Floor
New York, NY 10007-1866
(212) 637-4042

EPA Region III

(DE, MD, PA, VA, WV)
3WC32
1650 Arch Street
Philadelphia, PA 19103
(215) 814-2164

EPA Region IV

(AL, FL, GA, KY, MS, NC, SC, TN)
61 Forsyth Street, SW
Atlanta, GA 30303
(404) 562-8977

EPA Region V

(IL, IN, MI, MN, OH, WI)
77 West Jackson Boulevard
Chicago, IL 60604
(312) 886-6003

EPA Region VI

(AR, LA, NM, OK, TX)
1445 Ross Avenue
Dallas, TX 75202-2733
(214) 665-2295

EPA Region VII

(IA, KA, MO, NE)
901 N. 5th Street
Kansas City, KS 66101
(913) 551-7602

EPA Region VIII

(CO, MT, ND, SD, UT, WY)
999 18th Street
Suite 500
Denver, CO 80202
(303) 312-6204

EPA Region IX

(AZ, CA, HI, NV,
American Samoa, Guam)
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-1122

EPA Region X

(AK, ID, OR, WA)
1200 6th Avenue
Seattle, WA 98101
(206) 553-1757

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Appendix N
Site Survey and Investigation Guidelines

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Appendix N

Site Survey and Investigation Guidelines

The guidelines below can be used in performing a site investigation during Phase I of the environmental due diligence process (EDDP). Answers to the questions can be helpful in identifying potential environmental issues that should be addressed before transferring real property

General Information

1. Is the property located in an area designated as a wetland, wilderness, or historical area?
2. Are any rivers, streams, springs, lakes, or ponds located near or on the property?
3. What are the zoning requirements or intended future use for the property?

Adjacent Property

4. What are the zoning requirements or intended future use for adjacent properties?
5. Who are the adjacent property owners? What activities take place at all adjacent properties (e.g., commercial tenants handling hazardous waste, military or industrial research, machinery repair, landscaping, mining/quarrying, oil/gas extraction, manufacturing, agriculture)?
6. Who are the adjacent property main contacts for further inquiries and coordination?
7. Is the current owner/operator aware of any present or past underground or aboveground storage tanks being located adjacent to the subject property? If yes, can the owner/operator demonstrate that the tanks have been properly closed, installed, certified or that existing tanks are not currently leaking? If underground storage tanks (USTs) or aboveground storage tanks (ASTs) exist complete UST questionnaire in Appendix O.

Records and Documents

8. Is (or has been) the subject property on the National Priorities List (NPL) of Superfund sites? *The Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) reports can be obtained from the Resource Conservation and Recovery Act (RCRA)/Superfund Industry Assistance Hotline (800-424-9810), the CERCLIS Helpline (202-260-0056), the EPA Regional Office, or from the state environmental agency.*
9. Have or are nearby properties (within two miles of the site) been on the NPL?

10. Have there been any fuel leaks in the area? *The State Environmental Agency Site Lists, which is similar to CERCLIS, contain information on smaller fuel leak sites.*

Permits, Surveys, Violations

11. Has the facility possessed any environmental permits in the past or present? Indicate Y/N.
___ air quality; ___ hazardous waste treatment, storage or disposal facility;
___ public owned treatment works; ___ sanitary sewer; ___ USTs
___ National Pollutant Discharge Elimination System; ___ stormwater discharge
12. Has the facility been cited for permit violations or environmental noncompliances? If yes, provide a brief description of all violations or noncompliance.
13. Have soil or groundwater studies been performed on the subject property or adjacent properties? *These reports and test results should be available from the owner/operator of the properties.*
14. Does the local fire department have record of any violations (impacting human health and the environment) of the owner/operator facility? Provide a list or brief description.
15. Has an indoor air quality survey been performed recently? If so, when and what were the results?
16. Has a radon survey been performed recently? If so, when and what were the results?
17. Has a radiological survey been performed recently? If so, when and what were the results?
18. Has an asbestos inspection or survey been performed at the facility before or during occupancy? Are reports available documenting the inspection results? Briefly describe the results or provide the inspection report. *The report can be obtained from the owner or operator of the facility.*
19. Has an UST survey been performed by a qualified engineer? If so, when and what were the results?
20. Were aerial photographs taken prior to EPA occupying the property? *The United States Geological Survey (USGS) in Reston, Virginia, maintains aerial photographs of the United States.*
21. Has a lead-based paint survey been performed recently? If so, when and what were the results?
22. Has a RCRA facility assessment or investigation been performed in the past or present? Provide a brief description.

Hazardous Materials Usage/Releases

23. Are any automotive or industrial batteries or paints handled or used in large volumes greater than five gallons?
24. Are any industrial drums (15-55 gallons) used, handled, or stored at the facility? If so approximately how many?
25. Was the site ever used for or by commercial tenants handling hazardous waste, military or industrial research, machinery repair, landscaping, mining/quarrying, oil/gas extraction, manufacturing, or agriculture?
26. Are hazardous substances disposed of on-site, injected into groundwater, or discharged into drains, septic systems, ponds, or lagoons?
27. Are there any ponds or collection pits on-site? If yes, what do they contain?
28. Are the signs of stressed vegetation (browened, burned out) or stained soil?
29. Are any leaks, spills, or stains present on the property or in any buildings?
30. What hazardous materials are or have been used, treated, or otherwise handled on-site? *This information can be obtained from material safety data sheets (MSDS) or from the local fire department.*
31. Has there been any history of hazardous or municipal solid waste disposal on-site?
32. Have there been on-site or off-site releases?
33. Are there any drinking water or groundwater monitoring wells on-site?

Storage Tanks

34. Have or are wells, dry wells, or septic tanks operating? Are there any abandoned wells or septic tanks?
35. Are any underground storage tanks on the property, close proximity to EPA's facility, or on the adjacent property? If yes, complete the UST questionnaire in Appendix O.
36. Are any aboveground storage tanks on or near the property? If so, describe the construction, age, capacity, and contents of the tank(s).
37. Is there staining around any of the storage tanks?
38. Does the AST have secondary containment?

Polychlorinated Biphenyl (PCB) Transformers

39. Are any of the following transformers on-site? Indicate Y or N. ____ electrical transformer; ____ electrical capacitors; ____ hydraulic systems; ____ waste oil tank; ____ other (specify)
40. Has or is any of the equipment leaking or damaged? If leaks or damages have occurred in the past, provide a brief description of the incident and actions taken.

Asbestos

41. When was each building on-site constructed? *Note any construction prior to 1987 that may contain asbestos.*

Pesticides

42. Are or were pesticides used, stored, or manufactured at the site?
43. Has there ever been a spill of pesticides at the site?

Radioactive Materials and Waste

44. Are or were radioactive materials used, stored, or manufactured at the site? Is a Nuclear Regulatory Commission (NRC) license available for review?
45. Has there ever been a radioactive materials release or violation at the site?
46. What engineering controls for radioactive materials are or have been used?
47. Is or has a liquid radioactive waste storage and treatment system been operated at the facility?
48. Is or has liquid radiological waste been discharged to the sanitary sewers?
49. Were or are radiological materials used, or stored in rooms, areas or work surfaces constructed of porous materials, tile floors, concrete, or other surfaces with cracks, crevices, and seams?

Laboratory Operations, Analysis, and Experiments

50. Are or have experiments been conducted in the soils, groundwater, man-made streams, or sediments at the site? Provide a brief description of each experiment.
51. What laboratory bench or pilot-scale operations or experiments have been or are conducted that involve engineering systems or equipment exposure to hazardous materials? Provide a description of each.

52. What treatment systems have been or are in operation including, but not limited to, waste water, water, incinerators, solvent recovery/recycling, elementary neutralization, sanitary?
53. Are or have laboratory activities been conducted in temporary structures or mobile trailers? Provide a description of the structure and associated activities.
54. Are EPA-owned mobile equipment or temporary structures on site that may require removal, decommissioning, shutdown, or decontamination because of exposure to hazardous or radiological materials? Provide a list and brief description.

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Appendix O
Underground Storage Tank and
Aboveground Storage Tank Questionnaire

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Appendix O

Underground Storage Tank and Aboveground Storage Tank Questionnaire

This questionnaire can be used to obtain important information on underground storage tanks (USTs) and aboveground storage tanks (ASTs) on real property slated for transfer.

Owner and Operator Determination - *If there is more than one UST at the facility complete the attached matrix to answer questions 1 and 2.*

1. Who is the owner of the UST(s)? _____

2. Who is the operator of the UST(s)? *Operator* means any person in control of, or having responsibility for, the daily operation of the UST system. Provide the individual's name, organization, and/or relationship to owner. _____

3. Who submits the required notifications and reports (e.g., certification of installation, corrective action plans, release reports) to the implementing agency? See 40 CFR §§280.22 and 280.34 for notifications and reports. _____

4. Who maintains the documentation generated from UST notification and reporting activities? Where are they kept? _____

5. Who oversees and tracks product delivery and inventory control? Provide the individual's name, organization, and/or relationship to owner. See 40 CFR §§280.40 and 280.43. _____

6. Who performs operation and maintenance of the UST equipment and systems? Provide the individual's name, organization, and/or relationship to owner. _____

UST Profile - *If there is more than one UST at the facility complete the attached matrix to answer questions 7-13.*

7. How many USTs are at the facility? _____ What is the UST capacity in gallons? _____
8. What is the tank constructed of? What is the piping system constructed of?
Indicate "T" for tank and "P" for piping.

___ steel with cathodic protection

- ☐ fiberglass
- ☐ fiberglass-reinforced plastic
- ☐ steel-fiberglass-reinforced-plastic composite
- ☐ other metal
- ☐ steel w/o protection
- ☐ steel with corrosion protection
- ☐ vaulted steel
- ☐ unknown
- ☐ other _____

9. What product is stored in the UST? _____
10. Has the tank been upgraded to meet current standards? ☐ Yes ☐ No
11. What method(s) have been used to detect product releases?
Indicate "T" for tank and "P" for piping.
- ☐ Inventory control process
 - ☐ Vapor monitoring
 - ☐ Manual or automatic tank gauging
 - ☐ Groundwater monitoring
 - ☐ Tank tightness testing
 - ☐ Interstitial monitoring
 - ☐ Other approved method
12. Is the tank used for storing heating oil for consumptive use on the premises where stored?
☐ Yes ☐ No
13. What equipment (e.g., emergency power generators) does the UST serve? _____
14. Where are the tanks located relative to one another? Please attach site maps, facility layouts or provide descriptions relative to facility buildings. _____

15. Are the USTs in close proximity to water retention ponds, surface impoundments, sewer and utility lines, storm/waste water lines, surface water, or stormwater drains?
☐ Yes ☐ No If yes, please describe. _____

UST History

17. Has there been a release associated with this tank? ☐ Yes ☐ No
Who is responsible for release detection records and where are they maintained? _____

18. Has an investigation or corrective action been taken for this tank? ☐ Yes ☐ No
Identify the specific corrective action taken.

- ☐ Passive remediation (e.g., vapor recovery)
 - ☐ Soil removal
 - ☐ Inert fill material
 - ☐ Other _____
-

19. Is this a replacement tank? ☐ Yes ☐ No
20. Have UST closure activities been performed in the past on these or other tanks at this facility? ☐ Yes ☐ No

Groundwater Monitoring

21. Are groundwater monitoring wells in place? ☐ Yes ☐ No
When and where were they installed? _____

22. Are monitoring well data, results, and reports available for the last two years?
☐ Yes ☐ No

Multiple USTs Matrix To Answer Questions 1, 2, 7-13

Tank ID	#1 and #2 Owner/ Operator	#7 Capacity	#8 Tank Material ¹	#8 Piping Material ¹	#9 Product Stored	#10 UST Upgraded (Y/N)	#11 Release Detection Method ²	#12 Stores Heating Oil (Y/N)	#13 Equipment Served

¹ Choose from the following: steel with cathodic protection (scp); fiberglass (f); fiberglass-reinforced plastic (frp); steel-fiberglass-reinforced-plastic composite (sfrpc); other metal; steel w/o protection (sw/op); steel with corrosion protection (sw/cp); vaulted steel (vs)

² Choose from the following: inventory control process; vapor monitoring; manual or automatic tank gauging; groundwater monitoring; tank tightness testing; interstitial monitoring; other approved method

Appendix P
Phase II and III Environmental Due Diligence
Process Contractor Procurement Specifications

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Appendix P
Phase II and III Environmental Due Diligence
Process Contractor Procurement Specifications

The following specifies qualifications for a Phase II environmental due diligence process (EDDP) contractor. The language is extracted from Federal Aviation Administration (FAA) Order 1050.19, *Environmental Due Diligence Audits in the Conduct of FAA Real Property Transactions*.

a. General. Phase II EDDPs are considerably site-specific. Therefore, it is impracticable to prepare specific, minimum contractor specifications for the conduct of these activities. However, like the procurement approach for Phase I EDDPs, when selecting a contractor to assist the EPA in performing Phase II EDDPs, the Agency shall consider the following general requirements:

- An explicit scope of work shall be included as part of the request for proposals (RFP) and contract.
- Interviews shall be conducted with the contractors who meet the standard RFP criteria (including the specific individuals who will be doing the work).
- A recent work product on a related activity shall be reviewed as part of the proposal process.
- All professional references shall be thoroughly verified.

b. Criteria. As stated above, the site-specific nature of the Phase II EDDP precludes the issuance of detailed procurement specifications. The following general criteria shall be used when evaluating the potential Phase II EDDP contractors.

(1) Firm Experience.

- i. Years: 10 (total, all activities)
- ii. Subject Matter Expertise:
 - Environmental science and engineering including, but not limited to, the following disciplines: hazardous site remediation, toxicology, risk assessment, chemistry, geology, hydrogeology, asbestos, hazardous materials management, and industrial hygiene. Regulatory expertise also shall be required.
 - Five years of experience in conducting Phase II EDDPs or related activities.

(2) Project Manager Experience.

- i. Years (10)
- ii. Subject Matter Expertise: Environmental Sciences
- iii. Degree: M.S. or Ph.D.
- iv. Professional Affiliations: Professional Engineer's or Geologist's Registration

v. Phase II Experience: two years of experience within the last three years.

(4) Indemnification, Insurance and Bonding. Insurance and bonding are highly dependent upon the nature and scope of the work to be performed. It is therefore not practical to provide specific levels of coverage. Generally, the contractor shall:

- Be willing to indemnify the EPA for the results of its professional and other negligence
- Possess adequate bonding, including bid bonding, performance bonding, and payment bonding
- Carry limits of errors and omissions insurance
- Carry limits of general liability insurance
- Carry workers compensation insurance
- Provide certificates of insurance (evidencing coverage) for each of the coverages.

(5) Conflicts of Interest. Consultants shall not have greater than 50 percent of their work coming from developers or real estate leasing group, the Environmental Protection Agency, or State environmental agencies.

(6) Report Quality.

i. Report experience should show a similar approach to conducting Phase II EDDPs as outlined in EPA's EDDP Guidelines.

ii. Reports should be readable and comprehensible by the lay person.

iii. Reports should explain all conclusions and explain the relevancy and implication of findings to the EPA. Regulatory and some legal issues also should be explained.

(7) Size of the Firm. The contractor shall have demonstrated capabilities to adequately staff and conduct two Phase II EDDPs concurrently for EPA.

(8) Client Experience. The contractor shall have some experience in working with Federal agencies, although it does not need to be 100 percent of their experience.

(9) Location. While the primary contractor shall be easily accessible to EPA Headquarters, to minimize costs, the contractor shall also have staff in the areas likely to be the location of Phase II activities.

(10) Information Protection. The contractor shall have in place a program for ensuring the confidentiality of information provided by the Government. Elements shall include specific standards for labeling information as proprietary and policies for protection of the information, including disciplinary procedures for employees found infringing upon the policy. The contract between the EPA and the contractor must provide that the contractor shall not disclose information obtained from the EPA or related to its relationship with the EPA to third parties without the express consent of the EPA.

(11) Cost. Cost shall be reasonable and within the prevailing rates charged by similarly situated contractors.

(12) Minority/Woman-Owned Business. The EPA, as well as other Federal agencies, are committed to hiring

minority or woman-owned businesses, where all technical qualifications are met.

c. Evaluation and Balancing. The following factors shall be considered:

(1) Primary Criteria.

- i.** Firm and individual consultant experience (years)
- ii.** Firm and individual consultant expertise (education, work experience)
- iii.** Insurance and indemnification
- iv.** Report quality
- v.** Use and quality of subcontractors
- vi.** Conflict of interest

(2) Secondary Criteria.

- i.** Location
- ii.** Size
- iii.** Confidentiality and document retention programs.

(3) Additional Criteria to be Considered.

- i.** Formal quality control programs
- ii.** Cost
- iii.** Minority/woman-owned business status.

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