ORDER 1050.19A

ENVIRONMENTAL DUE DILIGENCE AUDITS IN THE CONDUCT OF FAA REAL PROPERTY TRANSACTIONS

June 2002

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

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Initiated By: AEE-200

FOREWORD

Consistent with the Federal Aviation Administration's mission to be the national and international leader in aviation environmental issues, while fostering a safe, secure and efficient aviation system, is the need for an effective process to acquire real property free from environmental liabilities. The Environmental Due Diligence Audit (EDDA) program provides a comprehensive framework for ensuring that the FAA adheres to all applicable environmental regulations and best practices associated with property acquisitions and disposals while maintaining the necessary infrastructure to promote aviation safety and growth.

This Order prescribes policy, delegates authority and assigns responsibility for ensuring agency compliance with the provisions of the EDDA program. It also directs the Office of Environment and Energy to issue necessary guidelines and procedures needed to manage the program.

This Order provides direction to personnel involved in performing, managing or overseeing EDDA's in support of real property transactions. This Order also provides direction on the preparation and review of EDDA reports, including results interpretation. The policies and procedures set forth herein are intended solely for the guidance of employees and agents of the FAA. They are not intended to, nor do they constitute a rulemaking by the FAA. They may not be relied upon to create a right or benefit, substantive or procedural, enforceable at law or in equity, by any person.

Each office may supplement this broad coverage with guidelines, instructions, or protocol specific to its needs.

Due to the evolving and dynamic nature of EDDA practices, the EDDA Order cannot remain static. Recognizing that program improvement is a vital element in the program's effectiveness and responsiveness to FAA personnel, users have the opportunity to offer suggestions for improvement to this directive through the use of FAA Form 1320-19, Directives Feedback Information.

Administrator

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CHAPTER 1. GENERAL REQUIREMENTS

1-1. PURPOSE.

a. This Order establishes the Federal Aviation Administration (FAA) policy, procedures and responsibilities and implementation guidelines for performing Environmental Due Diligence Audits (EDDAs) in order to minimize potential environmental liabilities related to real property transfer. A list of acronyms is provided in Appendix 1.

1-2. DISTRIBUTION.

a. This Order is distributed to the division level in Washington, with branch level distribution in the Offices of the Chief Counsel, Budget and Airport Planning and Programming; NAS Implementation Program (ANI); NAS Transition and Implementation Service; and to the division level in the regions.

1-3. CANCELLATION.

a. Order 1050.19, Environmental Due Diligence Audits in the Conduct of FAA Real Property Transactions, dated August 22, 1994, is canceled.

1-4. EXPLANATION OF CHANGES.

a. This revision significantly changes the August 1994 version of 1050.19. A summary of the fundamental changes is provided in the following paragraphs.

(1) Section 1-11 was added to clarify the Environmental Due Diligence Audit process and Sections 2.5 through 2.7 were added to emphasize the decision making aspects of the process for managers and implementers.

(2) Conformance with the latest versions of ASTM E-1527 is now required, to provide "all appropriate inquiry", pursuant the Small Business Liability Relief and Brownfields Revitalization Act, signed 1/11/02 which amends the Comprehesive Environmental Response, Compensation, and Liability Act of 1980. .

(3) For Section 1-7, Technical Reviewers (TR) must have EDDA training and either a relevant degree with a fundamental understanding of EDDAs, or practical experience. Site Assessors (SA) must have EDDA training and practical experience.

(4) A Phase I EDDA is preferred for all acquisitions of off-airport properties. Use of the Hazardous Substance Contamination Clause (HSCC) or the EDDA screen (ASTM 1528- latest version) may be permitted after appropriate Technical Reviewer (TR), AXX-400, and AXX-50 coordination and approval, and legal sufficiency review by AXX-7. Examples of site transactions which may be considered for the EDDA screen include: small technical equipment, MTI Reflectors, ASOS, AWOS, and LLWAS (others as appropriate to scope of project). Although, the HSCC is an option, it will not provide "all appropriate inquiry" required for the CERCLA "Innocent Landowner Defense". This should be considered very carefully when using the HSCC option exclusively.

(5) EDDAs conducted as part of a disposal action can be customized to verify and/or update findings of an EDDA conducted prior to FAA occupancy of the site. An Exception may be granted with AXX-7, TR, and program office approval for sites where the activities at the site **did not** include usage or storage of any hazardous substances and materials (except gel cell batteries) or generate hazardous waste.

(6) Properties where the HSCC, Transaction Screening, EDDA's or Exceptionsare approved are still required to comply with 29CFR Part 1910, 29CFR Part 1926. The project engineers are responsible for design changes to take into consideration health and safety issues raised during and after construction. These design changes may be necessary to reduce the potential for injury or illness. See Appendix 2 for a chart where health and safety issues are related to the EDDA process.

1-5. CLAUSES AND LETTERS.

a. The following clauses and letters will be referenced in this Order and must be used in the implementation of this document.

(1) HAZARDOUS SUBSTANCE CONTAMINATION CLAUSE – The following liability limitation clause has been developed for use in the acquisition of property (by lease) for the establishment of an airway facility on airport property. If a sponsor does not agree to this clause in the lease, an EDDA would be necessary for any new facility requirements. There are limited exceptions to this, which are described further in section 1-12. For specific details regarding application of this clause, as well as the most current text to be included in the clause, please contact the Real Estate Policy Branch of the Office of Acquisitions (ASU-140) or refer to the FAA Acquisition System Toolset (FAST).

(i) The Government agrees to remediate, at its sole cost, all hazardous substance contamination on or about the leased premises that is found to have occurred as a direct result of the installation, operation and/or maintenance of the (Specify Type of Facility or equipment). The Lessor agrees to remediate or have remediated, at its sole cost, any and all other hazardous substance contamination found on or about the leased premises. The Lessor also agrees to save and hold the Government harmless for any and all costs, liabilities and/or claims by third parties that arise out of hazardous contamination found on the leased premises which are not directly attributable to the installation, operation and/or maintenance of the (Specify Type of Facility or equipment).

b. Technical Review Letters: All EDDAs and screening transaction questionnaires, (Phase I, Phase II and Phase III), will be reviewed by a designated qualified TR. The TR will review the content and completeness of the EDDA report against the technical requirements of this Order. If the report is determined by the TR to be complete and in accordance with this Order, then the TR will complete a technical conformance statement. A sample technical conformance statement follows: "The EDDA Report for the Property at (_____) has been reviewed according to the requirements of Order 1050.19A. The review is complete and based on my evaluation of the report, this letter is provided to document that the EDDA report meets all of the technical requirements of Order 1050.19A".

c. Memoranda: A memorandum must be included in the transaction file for cases where an EDDA is not conducted. The memorandum must explain the rationale for not conducting the EDDA and also indicate that coordination between the TR, AXX-7, and real estate did occur.

1-6. AUTHORITY TO ISSUE CHANGES TO THIS ORDER

a. The Administrator reserves the authority to establish or change policy, delegate authority, or assign responsibility as necessary.

b. Changes proposed by an organizational element within FAA must be submitted to the Office Environment and Energy (AEE). The changes will be evaluated for incorporation by the Director of AEE or a designee.

c. The Director of AEE has the authority to add new chapters or change existing chapters that are proposed by organizational elements of FAA after appropriate coordination with internal stakeholder organizations.

1-7. PROFESSIONAL QUALIFICATIONS AND TRAINING.

a. Each organization covered by the Responsibilities paragraph (1-9) shall ensure that FAA personnel and managers are adequately trained and qualified to oversee and manage the EDDA process. They shall also ensure that only qualified contractors perform EDDAs (See Appendix 3 for contractor qualifications).

b. FAA TR reviewing Phase I EDDAs shall, at a minimum, meet the following:

(1) Have successfully completed at least 16-hours of environmental due diligence classroom training or an equivalent approved FAA/industry recognized EDDA program and has received on-the-job training from a qualified TR by conducting or reviewing five or more EDDAs; or

(2) Have a degree in a scientific discipline relevant to the EDDA process (e.g., environmental science, geology, chemistry, biology, forestry, engineering); 16-hours of EDDA training as described in (1) above; and, a functional understanding of how an EDDA is researched and compiled.

c. A qualified SA who performs a Phase I must meet the requirements for personnel performing a Phase I EDDA in section 1-7b(1) and any additional training determined necessary by the Regional Program Manager for Environment and Safety (RPMES) or TR.

d. All personnel who provide oversight for Phase II and Phase III investigations shall meet the requirements in 1-7b(1) above and also have had the Contracting Officer's Technical Representative (COTR) training. Additionally, personnel should have the requisite experience for overseeing these types of investigations.

e. The RPMES is the region's technical expert on environmental contamination matters. Before Phase II or III investigations are conducted, the program requesting transaction (PRT) or TR shall consult with the RPMES for guidance (e.g. review and comment on the scope of work (SOW)).

f. TRs and SAs should be involved with EDDAs as a fundamental aspect of their positions.

1-8. DEFINITIONS

a. Definitions have been provided in Appendix 4.

1-9. RESPONSIBILITIES.

a. Compliance with the policies of this Order is the responsibility of the following offices, services, regions and centers. The following are the non-funding responsibilities for EDDAs. In addition to these, there are funding responsibilities that are identified in paragraph 1-10 of this Order.

b. Program Requesting the Transaction (PRT) is any FAA organization that requests a real property transaction. The PRT shall notify AXX-50 of the need for the FAA to acquire or dispose of real property rights and will coordinate with the Real Estate Contracting Officer (RECO) on what real property rights need to be obtained to meet the FAA mission and which property rights are no longer needed in carrying out the FAA mission. The PRT is responsible for initiating the EDDA process and ensuring that the EDDA is performed in accordance with this Order. The PRT shall coordinate with the RPMES to designate a TR and the PRT shall provide the EDDA reports to and coordinate with, all FAA reviewers.

c. Logistics Division (AXX-50) shall ensure that the real property transaction is executed in a timely manner and meets the requirements of the PRT or delegate this function to qualified persons at the local level. Where applicable, Logistics Division shall ensure that contracting for an EDDA is provided in a timely manner and that such contracts are in accordance with applicable statutes, FAA's Acquisition Management System (AMS) contracting regulations and the criteria provided by the PRT. The RECO shall:

(1) Determine, in consultation with the PRT, the type of property rights that should be obtained.
(2) Negotiate the Limited Liability clause in consultation with the TR.
(3) Obtain the rights of entry required to perform EDDAs.
(4) Initiate contract execution for the acquisition of new sites or disposal of real property only after the EDDA process required by this Order has been completed and the appropriate technical review letter provided.
(5) Retain permanently the original or an approved copy of the EDDA report and its technical review letter with the real estate file.

d. Technical Reviewer (TR) is a technically qualified FAA employee who meets the requirements defined in paragraph 1-7. The TR shall determine if and when an EDDA is required in coordination with AXX-400 and AXX-50. The TR also assures that the contractors hired to conduct an EDDA are qualified, provides them with guidance on FAA requirements for an EDDA, develops and/or approves the scope to be used by the Site Assessor, and coordinates contractor site visits. The technical reviewer also ensures that the resulting report meets the technical requirements of this Order.

e. Site Assessor (SA) is either a qualified FAA employee or a contractor that meets the technical expertise requirements defined in paragraph 1-7 for FAA personnel qualifications or Appendix 3 for contractor qualifications. The Site Assessor shall coordinate with the TR to determine the scope of the EDDA, conduct the EDDA, develop recommendations and provide reports. For cases where the SA is not an FAA employee, the TR will be responsible for ensuring compliance with the Order.

f. Office of Environment & Energy (AEE) shall review overall FAA compliance with the provisions of this Order and provide assistance to offices, services, regions and centers in developing guidelines and procedures for their program areas, interpreting policies established in this Order and advising responsible officials in FAA concerning changes in environmental liability related to real property transfer practices.

g. Office of the Chief Counsel (AGC) shall provide legal counsel and assistance, interpreting changing legal requirements and their impact on the EDDA program and coordinate with Regional/ Technical Center counsel for policy implications of Regional, Technical Center and field actions.

h. Assistant Chief Counsel, Regional Counsel and Technical Center Counsel (AXX-7) Legal counsel shall review all EDDA reports for risk assessment and for legal sufficiency.

i. Office of Airport Planning and Programming (APP) shall ensure that the airport grant program includes the conduct of EDDAs by airport sponsors on facilities that will be established under the Airport and Airway Improvement Act by the FAA or that the FAA ultimately will operate. The requirement to conduct EDDAs will not apply where these responsibilities are otherwise specified in the contract provisions between the FAA and the airport authority.

j. Associate Administrator for Research and Acquisitions (ARA) shall include the financial and schedule impact of this Order on the design and deployment of new systems and shall include it in planning the life cycle requirements of its national programs (e.g. acquisitions and disposals).

k. Integrated Product Teams (IPT) shall include the financial and schedule impact of this Order on the design and deployment of new systems and shall include it in planning the life cycle requirements of its national programs (e.g. acquisitions and disposals). IPTs shall also ensure that EDDAs are funded, performed in accordance with this Order, and shall include it in planning the life cycle requirements of its national programs (e.g. acquisitions and disposals).

l. Office of Acquisitions (ASU-120) Based on input from the PRT, the Contracting Officer (CO) shall be responsible for developing and incorporating language into contracts for the performance of EDDAs that will ensure that the minimum requirements of this Order are met.

m. Real Estate Policy Branch (ASU-140) shall provide guidance to the Regional and Technical Center RECO on coordinating the process of acquisition, management and disposal of real property with those organizations responsible for performing the EDDA process.

n. Air Traffic Services (ATS) shall ensure that all Acquisition Program Baselines (APBs), or comparable budget estimates, provide adequate funding for EDDAs.

o. Director of the Airway Facilities Service (AAF-1) shall ensure EDDAs are performed in accordance with this Order for acquisition of real property rights for all airway facilities (new sites, as well as purchase of existing leased sites) and the disposal action when an airway facility is either relocated or decommissioned. AAF shall ensure that all regional AF divisions are provided resources and necessary training to carry out the requirements of this Order. (AF trained personnel may conduct the Phase I EDDA). If a PRT wishes to purchase a new site where the cleanup cost of the environmental contamination is estimated to be between $1 million to $20 million, a written memorandum must be provided to AXX-50 stating that they need to purchase the property, why they need that specific property and that they are able and willing to fund the cleanup of the property. AAF-1 approval of the acquisition shall be based on the value of the property to the FAA mission as compared to the cost of the cleanup and whether an acceptable alternative site can be located. AAF-1 is responsible for deciding whether or not to proceed with the purchase and may not delegate this responsibility.

p. Program Director Resources Management Program (AFZ-1) (formerly ANS-1) shall be responsible for development of procedures that will incorporate the requirements of this Order into the transition and implementation of the NAS. The AF Program Manager for Environment and Safety shall provide oversight and guidance to AF regional program managers for environment and safety in all matters of environment and safety that affect the acquisition, management and disposal of real property under AF control. The AF Program Manager shall also assist in development and roll up of regional annual budget requirements for program implementation.

q. Program Director NAS Implementation Program (ANI-1) shall ensure that EDDAs are performed in accordance with this Order for acquisition of real property rights for all airway facilities, equipment and associated property (new sites, as well as purchase of existing leased sites) and the disposal action where airway facilities and equipment are decommissioned or relocated as a result of an ANI action. The ANI Program Director shall include the financial and schedule impact of this Order on the design and implementation of new systems.

r. NAS Implementation Center (IC) Manager (ANI-X00) shall:

(1) Be responsible for review, approval and signature of all ANI EDDA reports.
(2) Implement requirements of this Order for all applicable projects under ANI-X00's direction.
(3) Ensure funding is requested for ANI EDDAs.
(4) Ensure training for applicable ANI personnel.
(5) Coordinate with the Regional AF Division Manager (AXX-400) for ANI projects requiring cleanup.
(6) Be responsible for the approval of the initiation of ANI Phase II or Phase III EDDA activities.
(7) Be responsible for the approval of completed ANI Phase II or Phase III EDDA reports, where remediation cost does not exceed $1 million dollars. Approval shall be based on the value of the property to the FAA mission as compared to the cost of the cleanup and whether an acceptable alternative site can be located.

s. Regional Airway Facilities Divisions (AXX-400) shall:

(1) Be responsible for review, approval and signature of **all** AAF EDDA reports or delegation of this authority to ANI-X00 for ANI projects.
(2) Be responsible for determining applicability of the HSCC or Transaction Screen in coordination with AXX-7 and AXX-50 or to delegate this authority to ANI-X00 for ANI projects.
(3) Implement requirements of this Order for all applicable projects under AXX-400's direction.
(4) Ensure funding is requested for EDDAs.
(5) Ensure training for applicable personnel.
(6) Coordinate with the ANI IC manager (ANI-X00) for ANI projects requiring cleanup.
(7) Be responsible for the approval of the initiation of Phase II or Phase III EDDA activities.
(8) Be responsible for the approval of completed Phase II or Phase III EDDA reports, where remediation cost does not exceed $1 million dollars. Approval shall be based on the value of the property to the FAA mission as compared to the cost of the cleanup and whether an acceptable alternative site can be located.

t. Office of the Administrator (AOA-1) shall be responsible for the approval of completed Phase III EDDA reports, where remediation cost exceeds $20 million dollars. Approval shall be based on the value

of the property to the FAA mission as compared to the cost of the cleanup and whether an acceptable alternative site can be located.

u. Technical Center Director (ACT-1) and Aeronautical Center Director (AMC-1) shall:

(1) Implement the requirements of this Order when activities under their purview involve request of real property transactions.
(2) Ensure that adequate funding is requested for these activities in the call for estimates.
(3) Consult with the Program Managers for Environment and Safety.
(4) As appropriate, sign-off stating no additional EDDA Phases are required.
(5) Ensure that adequate training is provided for applicable personnel.
(6) Coordinate with the AXX-400 manager (or equivalent) for projects requiring cleanup
(7) Coordinate with AXX-50 (or equivalent) for rights of entry and required logistics.

1-10. FUNDING

a. All organizations affected by this Order shall immediately begin submission of a fiscal year budget item for the management of all EDDAs. The estimate shall cover yearly costs for the conduct of all EDDAs. It is the responsibility of each Region and Technical Center to submit a yearly budget on the costs associated with these EDDAs, as required in the Annual Call for Estimates-Facilities and Equipment (F&E). The Office of Environment and Energy Hazardous Materials and Special Projects Staff, AEE-200, can be contacted for assistance in these budget estimates.

b. Assistant Administrator for Financial Services / Chief Financial Officer (CFO) (ABA) shall ensure that adequate funding is requested for the EDDA program in the budget out years. ABA shall ensure that the program offices consider these requirements in their budget submittals in the annual call for estimates.

c. Office of the Budget (ABU) shall use this Order as the basis for supporting EDDAs in the annual call for estimates to account for additional costs required for environmental issues in the acquisition and disposal of real property. In justifying the budget to Congress, the ABU shall consider these additional costs. ABU shall consult with The Office of Aviation Policy and Plans (APO) for direction on performing cost benefit analyses.

d. Associate Administrator for Air Traffic Services (ATS) shall anticipate the impact of this Order on the design and implementation of new systems and shall include in the planning of its national programs the requisite time and funds for the accomplishment of the EDDA and real property acquisition as well as the time and funds for any EDDA necessary for the property disposal as a result of new facility establishments.

e. Director of the Airway Facilities Service (AAF-1) shall ensure that, in the call for estimates, adequate funding is requested for these activities.

f. The Office of Environment & Energy; Environment, Energy and Employee Safety Division (AEE-200) can be contacted for budget estimate assistance.

1-11. EDDA PROCESS

a. The following paragraphs describe the activities and coordination required to complete an EDDA with the necessary approvals. Figures 1-1 and 1-2 are flow charts representing the Real Property Phase I EDDA Process and Additional Investigation Process Chart.

b. EDDAs can be initiated by any organization of the FAA with the need for a property transaction. The organization that has the need is defined as the PRT and as discussed in paragraph 1-9a, is responsible for ensuring that the EDDA is funded and performed. Once the property has been selected, the PRT shall notify AXX-50 to begin the transaction.

c. For AF transactions, AXX-50, in consultation with the TR, AXX-7, and AXX-400, determines the applicability of either the HSCC or the EDDA Screen for lease executions. AXX-50 also consults with AXX-7, and AXX-400 for special application of either the HSCC or the EDDA Screen to acquisitions. For other lines of business (LOBs), AXX-50, in consultation with the TR, AXX-7, and the LOB's Regional Office, determines the applicability of either the HSCC or the EDDA Screen for lease executions. EDDAs must be conducted for all ATCTs to address construction and occupancy concerns. For all other sites, if the HSCC or EDDA Screen is applicable, an EDDA will not be needed and the process is complete. However, if neither are utilized for acquisitions, an EDDA will be performed and reviewed prior to completion of a property contract. For disposal transactions, an Exception from the EDDA process may be granted with TR and program office approval and liability risk assessment and legal sufficiency review from AXX-7 for sites where the activities at the site **did not** include usage or storage of any hazardous substances and materials (except gel cell batteries) or generate hazardous waste.

d. The person(s) performing the Phase I EDDA, the Site Assessor, is/are responsible for determining the scope of the EDDA. The Site Assessor exercises professional judgment to determine the scope and documents the professional judgment in the report along with executed Phase I EDDA findings. For cases where a contractor performs the Phase I EDDA, the FAA's TR will be responsible for establishing the SOW and ensuring compliance with the Order.

e. The TR-COTR communicates with PRT on preliminary findings. Of specific importance is any indication of site contamination or other environmental issues which may impact the operation of a facility. The PRT then has the opportunity to re-direct EDDA investigation (acquisitions) to an alternate location. If the site assessor identifies a concern which may lead to a Phase II recommendation, the TR shall coordinate with the PRT to decide whether to discontinue action at this site or to simultaneously conduct a Phase I and Phase II.

f. When the report (Final) is determined by the TR to be in compliance with this Order, the TR will complete a Technical Review Letter. Once the TR is satisfied with the report, the TR is responsible for forwarding the report, to AXX-7 for review.

g. The EDDA report is reviewed for liability risk assessment and legal sufficiency by AXX-7. Early involvement of AXX-7 is recommended to reduce the amount of time spent addressing comments. The TR and legal counsel coordinate on responses to comments and addressing comments.

h. Once AXX-7 has signed off on the report, indicating that the report was reviewed for liability risk assessment and legal sufficiency, the TR will complete the Technical Review Letter and forwards the letter

with the EDDA report to AXX-400 for signature and also to ANI-X00 for signature on ANI managed projects.

i. After all signatures have been obtained, the TR forwards the final EDDA report to the PRT.

j. The PRT will keep a copy of the EDDA report and forward the Final EDDA Report to AXX-50 (with original signatures). Copies are also to be forwarded to the Facility Reference Data File (FRDF) and AXX-470.

FIGURE 1-1 Real Property Phase I EDDA Process

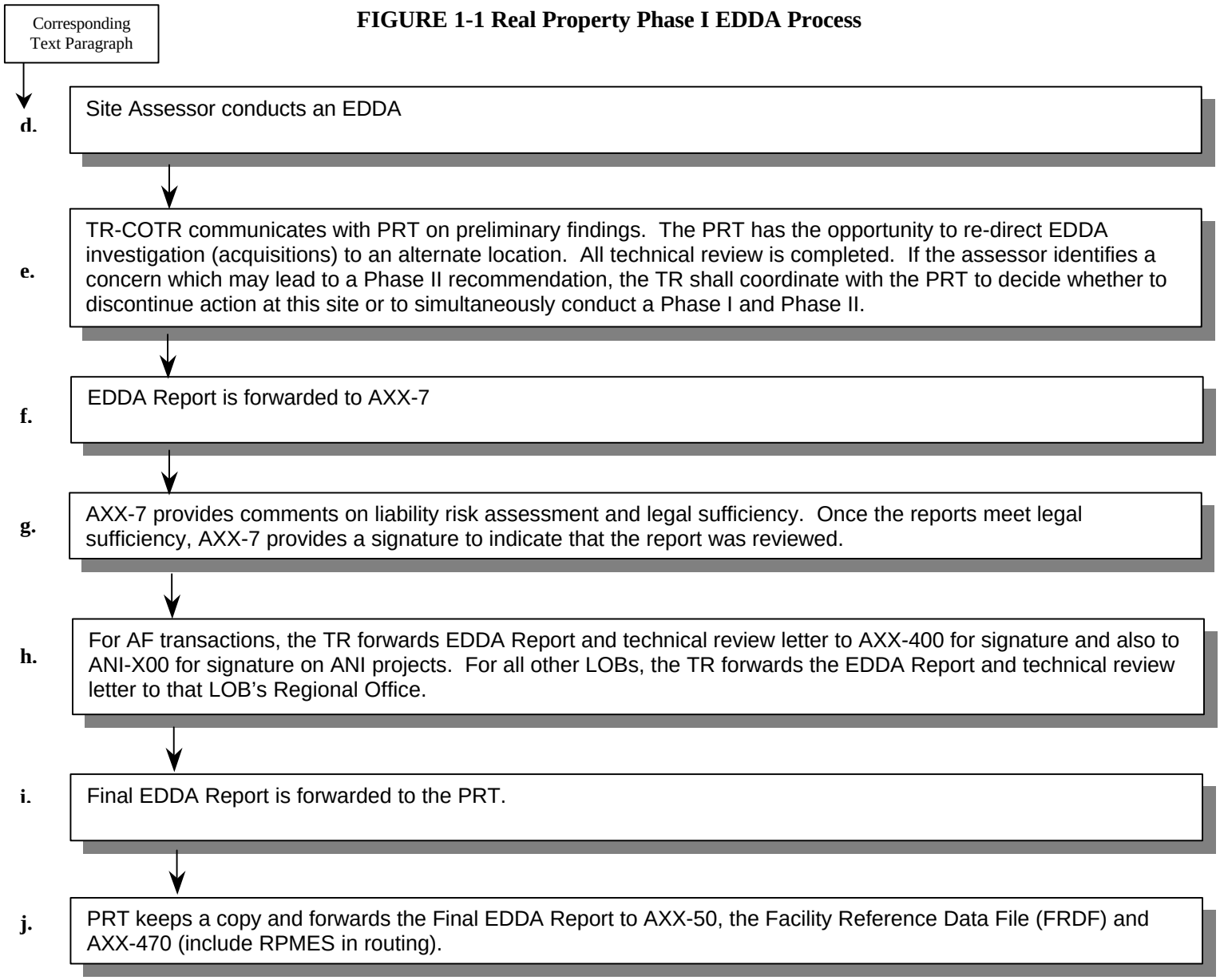
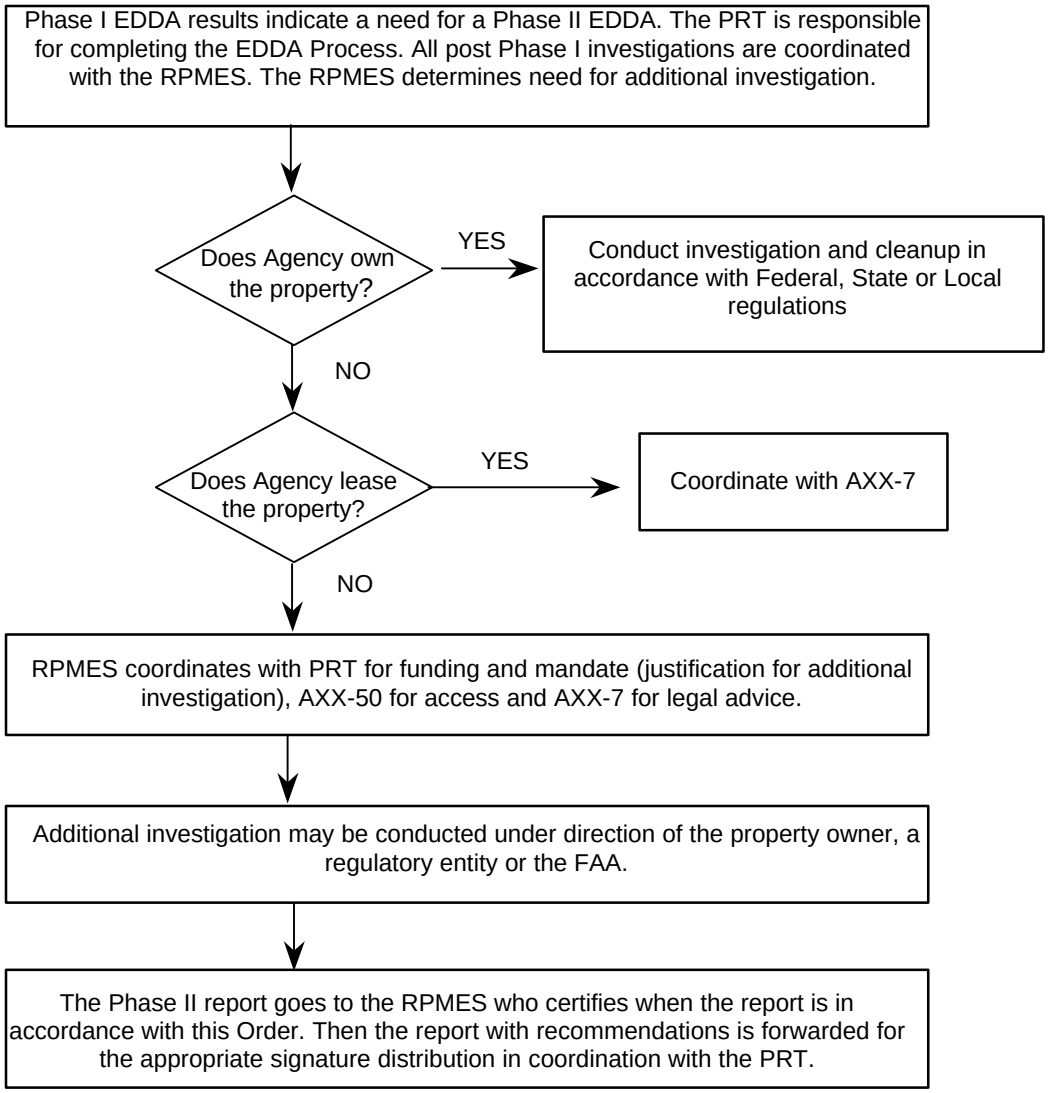


FIGURE 1-2 Additional Investigation Process Chart



1-12. POLICY SUMMARY

a. Phase I EDDA is preferred for off-airport properties. If the landowner refuses to permit the FAA to conduct the Phase I EDDA then the HSCC (Section 1-5a) may be utilized. Even with a HSCC the FAA may still pursue some form of environmental due diligence. Additionally, a HASP may also be necessary for FAA design, or health and safety purposes.

b. The Hazardous Substances Contamination Clause (HSCC) (Section 1-5a) is preferred, in place of a Phase I EDDA for lease acquisition for on-airport properties. Alternate HSCC terminology is permitted with AXX-7 approval. If the landowner refuses to accept the HSCC then a Phase I EDDA will be required. Even with a HSCC the FAA may still pursue some form of environmental due diligence or health and safety plan (HASP) for FAA design, or health and safety purposes. An EDDA is required for all new ACTCs.

c. An Exception from the EDDA process may be granted for disposals with AXX-7, TR, RPMES and program office approval for sites where the activities at the site did **not** include usage or storage of any hazardous substances and materials (except gel cell batteries) or generate hazardous waste.

d. A Phase I EDDA is not required for easement or right-of-way access agreements where the FAA is not performing any operations on the property in these agreements. A Phase I EDDA is also not required for the leasing of office space.

e. EDDA Reports prepared by contract shall be delivered in both hard copy and electronic format. It is recommended, due to space considerations, that the electronic copy be retained in perpetuity in the Facility Data Reference File. If an electronic copy is not available, a hard copy must be retained in perpetuity.

f. AXX-50, AXX-400, and AXX-7 will determine the applicability of a Site Screening (ASTM 1528, latest version) or the HSCC with technical support from the TR and/or AXX-470 for AF transactions. For other LOBs, AXX-50, in consultation with the TR, AXX-7, and the LOB's Regional Office, determines the applicability of either the HSCC or the EDDA Screen for lease executions.

g. Qualified professionals shall perform Phase II & Phase III EDDAs.

h. The PRT is responsible for initiating the EDDA process and ensuring that the EDDA is performed in accordance with this Order.

i. The FAA may accept a Phase I EDDA either conducted by FAA or a contractor in accordance with the latest version of ASTM Standard E-1527, which has been through the FAA review process.

j. The FAA may accept a Phase I EDDA conducted by other Federal, State and local agencies if they meet the requirements of this Order and has been through the FAA review process. Agencies exclude private entities.

k. The EDDAs, Screening Transactions, Exceptions, or HSCC shall be finalized and approved before the property transaction is executed.

l. If the transaction does not occur within six(6) months of the date of the site survey and the date of the records database search (whichever date is earlier), a TR must ensure that the findings of the EDDA are still valid, complete, accurate and in accordance with this Order before the property transaction is executed. If conditions have changed the EDDA must be updated before proceeding.

1-13 Through 19 RESERVED

CHAPTER 2. ENVIRONMENTAL DUE DILIGENCE AUDIT PROCESS

2-1. BACKGROUND

a. The focus of the EDDA process is on risk and the associated liabilities from past site and adjacent site uses and potential environmental contamination. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), prior site contamination can result in extremely expensive cleanup. CERCLA is a strict liability statute, which means that responsible parties are liable regardless of fault. It also imposes joint and additional liabilities as potentially responsible parties (PRPs). This means that a current owner or former owner or operator, are PRPs under CERCLA, and may be held liable for the entire cost of cleanup unless other PRPs' contributions to the contamination can be identified. A PRP's contribution cost amount may be determined by the following:

(1) Ability to use the "innocent landowner" defense.

(2) Type and magnitude of site contamination.

(3) Number of other PRPs.

(4) Each PRP's ability to pay for site cleanup.

(5) Relative contribution to the site contamination.

b. Additional resources of regulatory information are provided in Appendix 5 – Environmental Resources.

2-2. OBJECTIVES AND OVERVIEW

a. As mentioned in 2-2a, EDDAS are performed to understand risk and the associated liabilities due to potential environmental contamination. The EDDA report can also aid in property transfer through the GSA. Refer to Appendix 5 - Environmental Resources for the General Services Administration (GSA) web page address to download the GSA Environmental Guidebook and the GSA General Reference Guide for Real Property Policy for an outline of GSA’s requirements. The agency’s objectives in executing the EDDA process include:

(1) Avoiding costly litigation and environmental remediation liability under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and other relevant statutes and regulations.

(2) Establishing a consistent and defensible approach for documenting environmental conditions.

(3) Using the environmental evaluation as a component of property transaction decision-making and risk management.

(4) Ensuring that all environmental due diligence requirements are addressed and potential environmental contamination and potential liability is identified.

b. The EDDA process is a systematic procedure to evaluate subject properties for potential environmental contamination and liability. This process is divided into three phases that relate to the varying levels of evaluation. The primary purpose for each phase of the EDDA process is summarized below and is described in greater detail in the subsequent chapters.

(1) Phase I – Site Assessment determines whether environmental contamination is likely to be present on a property. Phase I is comprised of preliminary activities, site visit, records review, regulatory review, geologic and hydrogeologic review, report preparation, and report review. When an agency disposes of a leased property, a Phase I Site Assessment may also provide information to satisfying the Community Environmental Response Facilitation Act (CERFA) requirements. See Chapter 3 for specific details on Phase I – Site Assessment

(2) Phase II - Confirmation Sampling is necessary when Phase I EDDA indicates likelihood of environmental contamination. During Phase II limited site sampling is used to confirm the presence or absence of suspected contamination identified in Phase I. See Chapter 4 for details on Phase II – Confirmation Sampling

(3) Phase III - Site Characterization is an investigation to quantify and determine the extent of contamination at the site under consideration for transfer. Phase III may include identification of appropriate remedial technology and possibly a feasibility study. It serves as a management tool and helps the agency determine whether the cost of remediation exceeds the benefit of acquiring a given property. See Chapter 5 for details on Phase III – Site Characterization.

2-3. SCHEDULE

a. The amount of time required to complete the EDDA process (in total) depends on many factors - the most important is the environmental condition of the property. The PRT should build flexibility into the acquisition schedule to accommodate variations inherent to the process.

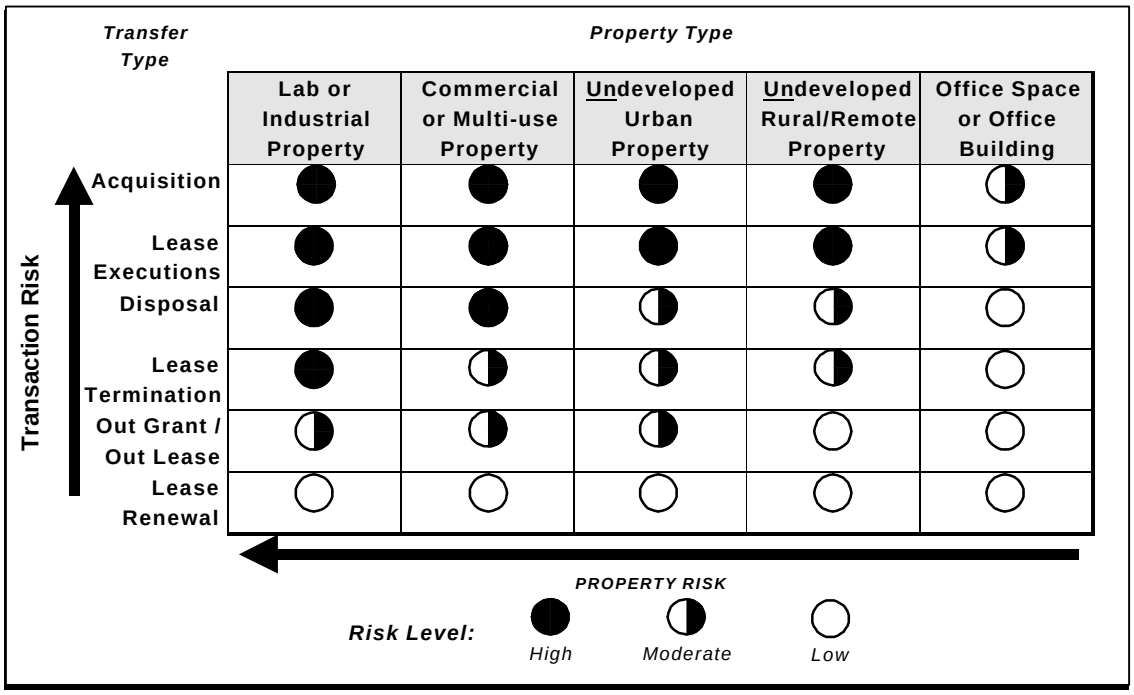
2-4. LIABILITY AND RISK MANAGEMENT

a. Identifying potential risk and liability involved in property transactions is the heart of the EDDA process. As discussed previously, risk will vary greatly depending on the type of property transaction and the type of property being transferred. For instance, industrial properties typically have a higher probability for contamination than property previously used solely for office space. The type of risk varies too and can include human health risk as well as the risk of assuming financial liability for cleanup of environmental contamination.

b. Figure 2-1 provides a general risk framework for various transaction and property types. When approaching an EDDA project, it is useful to consider this model and consider the appropriate risk level when planning the EDDA.

c. As stated in the policy section of this Order, the FAA requires that Site Assessors follow the guidance of the most recent version of ASTM 1527 with additional requirements of this Order for the completion of EDDAs.

Figure 2-1
General Risk Framework



2.5. VARIABILITY IN AN EDDA

a. The scope for an EDDA varies depending on the type of location being investigated. Recognizing that the risks associated with a property transaction increase as the potential for contamination increases is critical for a Site Assessor or TR since it is their responsibility to determine the scope of the EDDA. The scope of an EDDA depends on a basic understanding of the site and surrounding area to be investigated. Advance knowledge of the type of site (e.g. former industrial land, virgin forest, office space) allows the Site Assessor or TR to make a professional judgment on the amount of scrutiny or effort each aspect of the EDDA receives.

TABLE 2-1
Examples of when to do a Phase I EDDA

Property Type or FAA Use	Probability of Contamination*	Acquisition (Lease or own)	Disposal (Lease or own)
On-Airport (including Industrial & Office Parks)	High	Investigate all EDDA elements or use the HSCC	Perform EDDA Screen, e.g., ASTM E-1528 (latest version) as appropriate. Otherwise, an EDDA is required.
Off-Airport (Industrial Park / Military Base)	High	Perform an EDDA on all land purchases. For leases, if the landowner will not allow an EDDA, the FAA may be able to use a HSCC with proper approval and/or perform EDDA Screen, e.g., ASTM E-1528 (latest version) as appropriate.	Investigate all EDDA elements – unless a FAA EDDA was performed before occupancy. If one was done previously, the EDDA at disposal can be customized to verify and/or update findings of the original EDDA.
Off-Airport (Office Park / Commercial)	Moderate -depends on prior property use	Perform an EDDA on all land purchases. For leases, if the landowner will not allow an EDDA, the FAA may be able to use a HSCC with proper approval and/or perform EDDA Screen, e.g., ASTM E-1528 (latest version) as appropriate.	Investigate all EDDA elements – unless a FAA EDDA was performed before occupancy. If one was done previously, the EDDA at disposal can be customized to verify and/or update findings of the original EDDA.
Off-Airport (Residential & Agricultural)	Low to Moderate	Perform an EDDA on all land purchases. For leases, if the landowner will not allow an EDDA, the FAA may be able to use a HSCC with proper approval and/or perform EDDA Screen, e.g., ASTM E-1528 (latest version) as appropriate.	Investigate all EDDA elements – unless a FAA EDDA was performed before occupancy. If one was done previously, the EDDA at disposal can be customized to verify and/or update findings of the original EDDA.
Off-Airport (unimproved rural properties)	Low	Perform an EDDA on all land purchases. Perform EDDA Screen, e.g., ASTM E-1528 (latest version) as appropriate for leases.	Investigate all EDDA elements – unless a FAA EDDA was performed before occupancy. If one was done previously, the EDDA at disposal can be customized to verify and/or update findings of the original EDDA.
***Under certain acquisitions and lease executions, it may be permissible to conduct an EDDA screen per ASTM 1528 (latest version), after appropriate TR, AXX-7 and Real Estate coordination and approval (e.g., small technical equipment, MTI Reflectors, ASOS, AWOS, LLWAS, etc.)**			

2-6. PHASE I DECISION-MAKING

a. Use of the Phase I Report. Following approval and acceptance of the Phase I report by the Technical Reviewer, the report is forwarded to the decision-maker. This individual or group of individuals evaluates the findings, conclusions, and recommendations contained in the report and decide how to proceed with a proposed property transfer. The following charts present the decision making process for acquisition and lease executions (Figure 2-2) and disposal and lease terminations (Figure 2-3).

Figure 2-2 – Phase I Decision Process For Acquisition and Lease Execution Actions

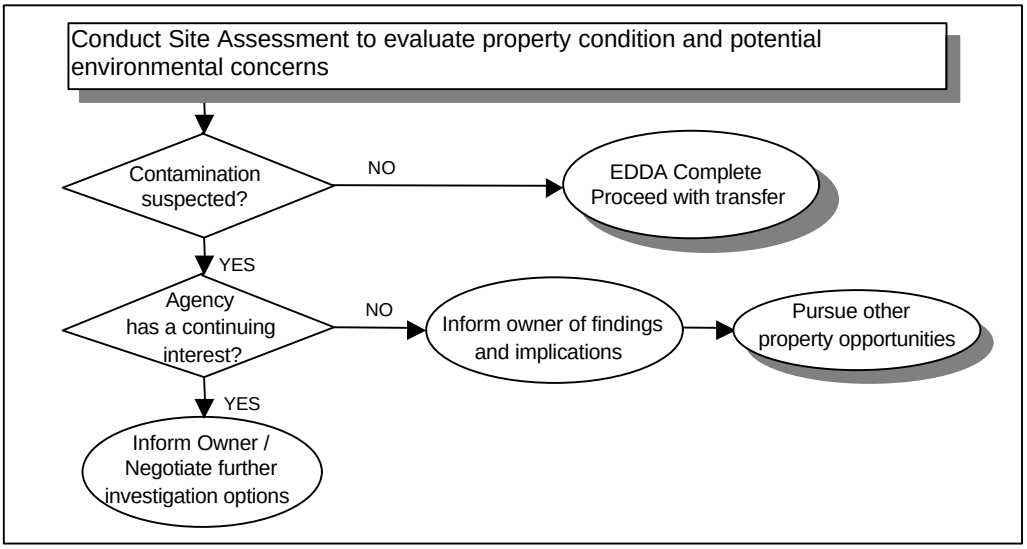
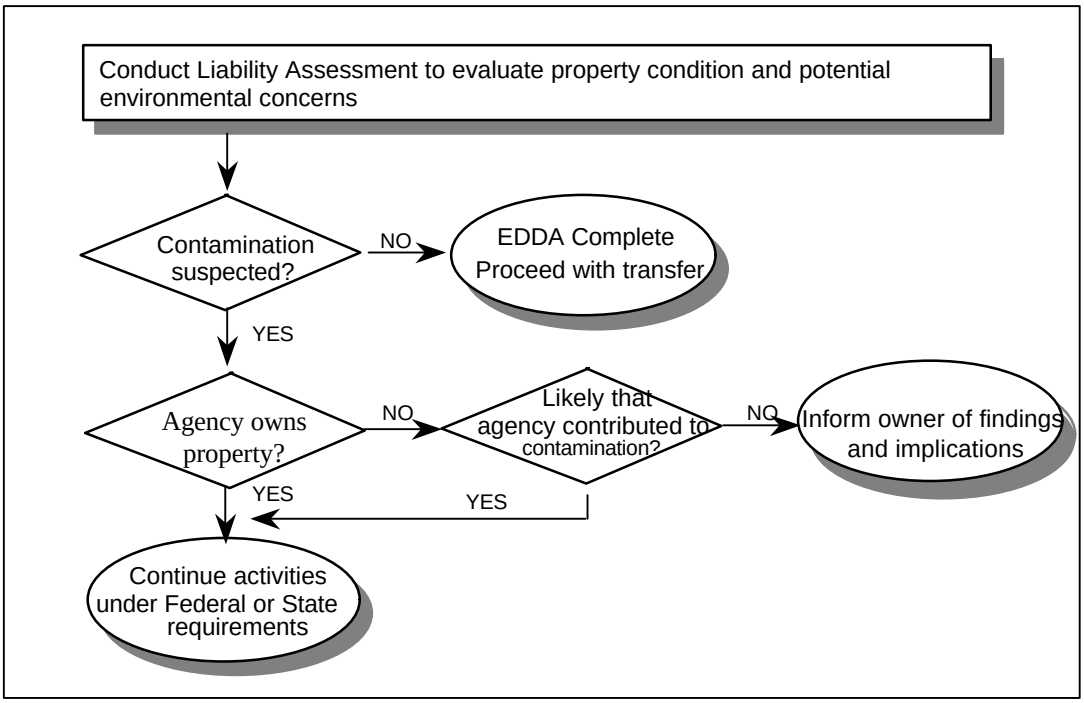


Figure 2-3 – Phase I Decision Process for Disposal and Lease Termination Actions



b. For all transactions, if the Phase I report indicates either a low or minimal potential for contamination or liability, then the EDDA process is complete, environmental due diligence has been met, and results contribute to satisfying property disposal obligations under CERCLA § 120(h)(4).

(1) Acquisition. If the agency is considering property acquisition or lease and the findings of Phase I indicate a moderate to high potential for contamination or liability then decision-makers must weigh their options. The decision-maker evaluates other property options against the importance or strategic value of the subject property (see Figure 2-3). Provided that the agency has continuing interest in the property, a Phase II must be conducted to determine whether or not contamination is present.

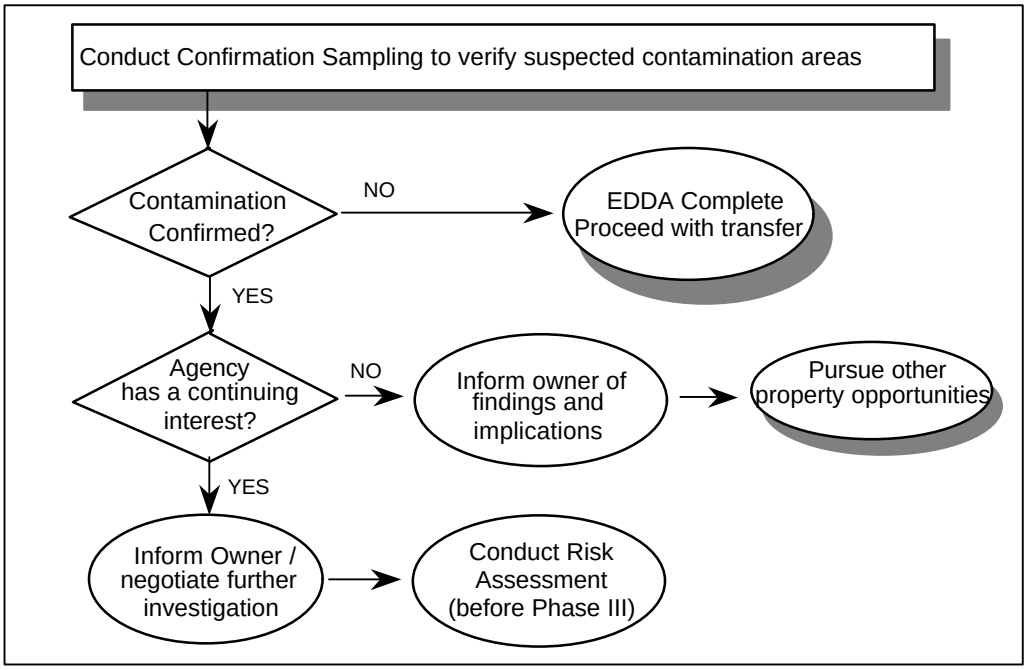
(2) Disposal. If the property transaction is a disposal or lease termination and the findings indicate a low potential for contamination or liability, the EDDA process is complete. However, there may be additional investigative requirements to be fulfilled for GSA requirements or CERFA compliance prior to the property transaction. CERFA requires full disclosure of all known hazardous substance activity, requires the identification of uncontaminated parcels, and specifies covenants to be provided in most deeds for disposal of Federal real property. If the property transaction is a disposal or lease termination and the findings indicate a moderate to high potential for contamination or liability, additional investigation must be continued under CERCLA, RCRA, state or local requirements.

(3) Note (Disposal Transactions Only): once the process has been started and contamination is suspected, Federal agencies are required to determine the extent of contamination and remediate if contaminants are above regulatory action levels.

2-7. PHASE II DECISION-MAKING

a. Use of the Phase II Report. The Phase II report summarizes and expands on the Phase I investigation and includes the analytical results from sampling. There are two significant outcomes of the Phase II: contamination is not confirmed, or, contamination is confirmed. If contamination is not confirmed during a Phase II EDDA, the property transaction can proceed without adding undue risk for environmental liability. However, if the presence of contamination is confirmed, decision-makers must determine whether the importance of the site still outweighs potential liability accompanying acquisition of property rights. A risk assessment should be conducted since it is crucial for informed decision making to understand the potential impacts to facility operation both from an Occupational Safety and Health (OSH) perspective as well as from an environmental perspective. At this point, the agency may choose to negotiate with the owner to address the contamination (owner financially responsible), or to further assess the extent of the property's contamination with a Phase III EDDA. See Figure 2-4 for the typical decision process for acquisition and lease execution actions.

Figure 2-4 – Phase II Decision Process for Acquisition and Lease Execution Actions

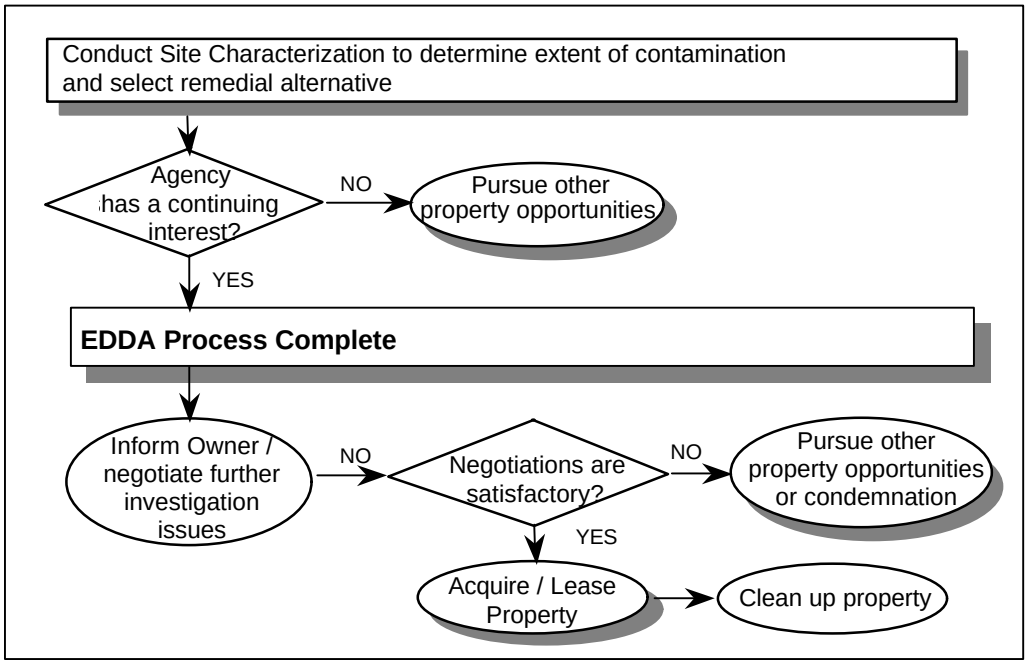


2-8. PHASE III DECISION-MAKING

a. Use of the Phase III Report. The Phase III expands on the findings of the Phase II with additional analytical data. The additional data allows estimation of the costs associated with remedial activities. Quantified costs will allow the agency to make a decision on the transaction by weighing the estimated liability costs against the value of the property. The agency could decide to accept these costs and use the obtained information to negotiate a lower purchase price for the property. Risk assessment is another important component of the Phase III report. The risk assessment should specifically evaluate the risks present at the site relative to implementation of FAA's Mission.

b. If the findings of the Phase III EDDA appear significantly adverse, then other acquisition or lease opportunities may become more appealing. Figure 2-5 presents the decision process for acquisition and lease execution actions during Phase III EDDA.

Figure 2-5 – Phase III Decision Process for Acquisition and Lease Execution Actions



2-9 Through 19 RESERVED

CHAPTER 3. PHASE I – SITE ASSESSMENT

3-1. OVERVIEW

a. This chapter briefly describes the Phase I EDDA – Site Assessment. The purpose of Phase I is to determine whether environmental contamination is likely to be present on a property. When an agency disposes of a property, the Phase I Site Assessment may also provide information for satisfying CERFA requirements. All information included in the completed Phase I is gleaned from existing documents or inferred from observations and interviews made during a site visit. Phase I does not include sampling. The environmental issues of concern are addressed through several elements that make a Phase I. These elements are:

(1) Interviews;
(2) Site Reconnaissance;
(3) Records Review (regulatory search, available on-site documents, geologic and hydrogeologic resources); and
(4) Report.

3-2. PROCESS

The ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (E1527-00 or latest version) is required as a basis for all Phase I EDDAs. Conformance with the latest versions of ASTM including E-1527 is now required, to provide "all appropriate inquiry", pursuant the Small Business Liability Relief and Brownfields Revitalization Act, signed 1/11/02 which amends the Comprehesive Environmental Response, Compensation, and Liability Act of 1980. Per the Small Business Liability Relief and Brownfields Revitalization Act, EPA should have its own criteria for "all appropriate inquiry" within 2 years of 1/11/02. When this occurs this shall be the basis for all Phase I EDDA reports.

A sample table of contents for a Phase I EDDA has been included as Appendix 6.

CHAPTER 4. PHASE II – CONFIRMATION SAMPLING

4-1. OVERVIEW

a. The Phase II – Confirmation Sampling EDDA is accomplished through physical sampling in the areas where suspected contamination was noted in the Phase I. The purpose of the Phase II is to confirm the presence or absence of contamination. Activities undertaken during a Phase II may range from intrusive sampling, such as advancing groundwater monitoring wells, to simple surface soil samples taken by hand augers. In some cases, the sampling may consist only of taking asbestos sampling or setting radon canisters. The range of required sampling influences the scope of the Phase II activities as well as resources and the amount of time needed to complete the investigation.

b. Due to the technical requirements and potential liability issues raised by Phase II Confirmation Sampling activities, the use of contractors is strongly recommended. When a contractor is used, the agency is responsible for ensuring that a *qualified*, licensed Professional Engineer (PE) or a licensed Professional Geologist/Hydrologist (PG/PH) is on staff (contractor) to supervise and approve the work. It is recommended that the contract for the Phase II state this requirement. Refer to Appendix 3 for Sample Phase I-III EDDA Contractor Specifications. When a contractor is hired to design and perform the Phase II Confirmation Sampling field activities, the agency's role in the field is to provide oversight through either a qualified Site Assessor or TR, and logistical support (e.g., site access). Additionally, the agency oversees the progress of the investigation, ensuring that it is completed within budget and on time.

4-2. PHASE II CONFIRMATION SAMPLING ACTIVITIES

a. Phase II Confirmation Sampling Activities consist of the following four steps. A description of each of these activities is provided in the subsequent paragraphs.

(1) Reviewing and evaluating the findings in the Phase I report.

(2) Developing and implementing a confirmation Sampling and Analysis Plan (SAP).

(3) Identifying site risk based on the results of the confirmation sampling.

(4) Developing the Phase II report.

4-3. REVIEW AND EVALUATION OF PHASE I REPORT

a. The Phase I report should be thoroughly reviewed before initiating any Phase II – Confirmation Sampling activities. The intent of the review is to gain a complete understanding of current information about the site and the suspected contamination. Specifically, the conclusions and recommendations section documents the potential areas of concern and provides recommendations for performing Phase II Confirmation Sampling activities. Additionally, the Phase I report contains valuable background information that will be pertinent to designing and conducting a Phase II and should be provided to the contractor. Relevant background information may include:

(1) Recommended locations of investigation and issues supporting the suspected types of contamination and sources.

(2) Potential sources of contamination based on prior site use.

(3) Past site operations and practices.

(4) Physical characteristics of the site, such as soil types, depths to groundwater, geologic and hydrogeologic features.

(5) Noted background (or ambient) levels of contaminants of potential concern.

(6) Previous hydrologic, testing or assessment report, identified and reviewed in the Phase I that support the recommendations or provide additional site detail and characteristics.

b. Phase II – Confirmation Sampling activities must address all of the issues raised in the Phase I report. The information from the Phase I is used to develop background and understanding and to specifically set forth the objectives of a site SAP, further described in the following section.

4-4. DEVELOPMENT AND IMPLEMENTATION OF THE SAP

a. The purpose of this step is to establish an agreed-upon sampling strategy that will fully address each potential liability area through confirmation sampling and analysis. The SAP contains two distinct elements. The first is the Field Sampling Plan (FSP) that specifically discusses the sampling activities, scope, analysis, health and safety activities and the rationale for each. The second is the Quality Assurance Project Plan (QAPP) that identifies the Quality Assurance/ Quality Control (QA/QC) procedures used in the field sample collections and analysis to ensure that accuracy and precision of the sampling results. The SAP must be developed by the Phase II contractor and approved by the FAA's TR before Phase II Confirmation Sampling commences.

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

(1) Sampling objectives.

(2) Site background.

(3) Site characteristics.

(4) Potential contaminants of concern.

(5) Type of media being sampled.

(6) Type, location, number, and frequency of samples being taken.

(7) Sample collection, handling, designation, numbering, and preservation techniques (e.g. chain of custody records).

(8) Field quality assurance and quality control procedures.

c. A safety and health plan is also developed to ensure that adequate precautions and planning for onsite activities. This portion of the plan must adhere to the Occupational Safety and Health Administration (OSHA) regulations in 29 CFR Part 1910 (General Industry Standards) and Part 1926 (Construction Safety). Contact the facility's environment, health, and safety manager for additional information on the health and safety plan. The overall objective of the plan is to ensure the safety and health of workers performing confirmation-sampling activities. The agency must require contractors to have their own OSHA compliant safety program to comply with OSHA multi-employer work-site regulations.

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

(1) Project management.

(2) Measurement and data acquisition, including sampling analysis, data handling, and quality control.

(3) Assessment and oversight.

(4) Data validation and usability.

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

(1) Purpose of environmental data collection (e.g., enforcement, research and development).

(2) Type of task to be performed (e.g., site characterization, baseline of site conditions).

(3) Intended use of the results.

f. The best means of achieving the appropriate content and level of detail in the quality management program may be having the agency's TR review and confirm QA/QC requirements and document them through a QAPP. The QAPP is usually submitted with the FSP and describes steps and procedures that will be used to ensure the quality of field sampling and laboratory analysis information. The plan usually demonstrates that:

(1) Project technical and quality objectives are identified, and are in concurrence.

(2) Intended measurements or data acquisition methods are appropriate for achieving project objectives.

(3) Assessment procedures are sufficient for confirming that the type and quality of data needed are obtained.

(4) Any limitations on the use of data can be identified and documented.

g. Both the field (e.g. FSP) and quality (e.g. QAPP) components of the SAP are used as a management tool to monitor the field and analytical laboratory performance of the Phase II Confirmation Sampling activities. Site sampling may begin once the SAP has been developed and accepted.

h. The Phase II – Confirmation Sampling contractor is responsible for completely executing the field-sampling program specified in the SAP and meeting the field, laboratory, and analytic objectives described in the QAPP. Federal agencies are responsible for providing oversight during Phase II – Confirmation Sampling activities and coordinating with the contractor and the landowner to provide site access as appropriate. Field direction should **not** be provided to on-site contractors, as this type of activity may compromise the integrity of the approved SAP. When unexpected field or technical issues arise during the course of the sampling activities, the agency COTR and contracting officer should work with the contractor to amend and document changes to the SAP and, where necessary, add change orders to the contract.

4-5. PHASE II REPORT

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

(1) Summary of the Phase I findings.

(2) Results of the confirmation sampling and analysis.

(3) Discussion of potential risk to human health and the environment.

(4) Discussion of potential remedial alternatives.

(5) Recommendations for performing follow-on Phase III Site Characterization activities or concluding the EDDA.

b. The report should clearly document the findings and conclusions of the Phase II – Confirmation Sampling. Refer to Appendix 7 **–** Example Phase II Report Outline for a sample outline/table of contents. It is essential that the results of the confirmation sampling and analysis be reviewed against the specifications of the QAPP to ensure that the data is accurate and will support drawing meaningful conclusions. Data should also be specifically evaluated against the QA/QC parameters, and the report should account for all deviations from designated sample quality standards. Additionally, the sample results must be evaluated against established Applicable or Relevant and Appropriate Requirements (ARARs) to compare the contaminants against established permissible levels. ARARs include federal, state and local standards that apply to the contamination compounds and issues at the site. Contamination areas may also be compared against appropriate background samples or information to help determine the source and impacts of the contamination areas.

c. In the event that the confirmation sampling determines an absence of contamination, the report should fully document the sampling activities, analytic results, and a justification for concluding that contamination is absent or below levels of concern.

d. Preliminary identification of remedial alternatives may be included in the Phase II report based on the type and location of noted contamination. Any estimates will necessarily be precursory and intended only to assist in decision-making based on best judgment and potential extent of the contamination confirmed in the Phase II. The full extent of contamination will be unknown until a comprehensive site investigation (Phase III – Site Characterization EDDA) has been completed.

e. The Phase II – Confirmation Sampling report must be reviewed and approved for content and accuracy by oversight personnel. The Phase II report is the decision-making tool that helps agency managers understand the presence of site contaminants and the need to conduct further study through the Phase III. Agency personnel responsible for property transfer, such as the program manager, property transfer manager, safety, health and environmental manager, facility engineering, and legal and real estate representatives, should review the report. The review must:

(1) Evaluate the accuracy of the conclusions and recommendations relative to the data gathered.

(2) Determine whether the investigation was actually carried out in accordance with the SAP.

(3) Ensure consistency between field samples and the QA/QC samples.

(4) Evaluate the field data against the appropriate and relevant criteria.

(5) Approve or concur with the conclusions and recommendations in the Phase II report.

CHAPTER 5. PHASE III – SITE CHARACTERIZATION

5-1. OVERVIEW

a. The Phase III – Site Characterization process provides information to agency decision-makers regarding the extent and magnitude of contamination liability. This phase is initiated when a subject property is of continuing interest to the agency, and the Phase II – Confirmation Sampling results confirmed contamination at concentration levels equal to or above regulatory limits or risk levels.

b. Site contamination is fully characterized and cleanup alternatives are developed during the Phase III. This is the final step in the EDDA process; thus, any subsequent remediation activities strictly follow Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or other statutory and regulatory processes.

5-2. PHASE III – SITE CHARACTERIZATION ACTIVITIES

a. The Phase III **–** Site Characterization builds on previously generated information to develop a comprehensive assessment of all site contamination areas. Phase III activities include the following. Discussion of each of these activities is provided in subsequent paragraphs.

(1) Review and evaluation of the Phase II report.

(2) Development and implementation of a Sampling and Analysis Plan (SAP) to fully characterize contamination at the site.

(3) Assessment of risk and future land-use options.

(4) Evaluation and selection of remedial alternatives.

(5) Development of the Phase III report.

b. Phase III – Site Characterization activities must be conducted by independent contractors experienced in site characterization and remediation. The selection of Phase III contractors is based on the contractors' qualifications, experience, and ability to conform to the contractor procurement specifications**.**

5-3. REVIEW AND EVALUATION OF THE PHASE II

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

5-4. DEVELOPMENT AND IMPLEMENTATION OF A FULL CHARACTERIZATION SAP

a. The Phase III full characterization SAP is similar to the SAP process described for Phase II. The major difference is that the objective in Phase III is to determine the extent and severity of the contamination, and to provide technical basis for establishing a site cleanup strategy. Due to the expanded objective, the scope and number of samples collected will likely increase during this phase of the EDDA process, and result in higher costs. Additionally, the Phase III SAP typically calls for higher resolution sampling and analytic procedures to evaluate performance limits of potential cleanup technologies.

b. Extreme care and professional judgment must be exercised to ensure that excessive sampling is not performed and unnecessary costs are not incurred. As in Phase II, the QAPP elements in the SAP need to be implemented in proportion to the project. Contractor-developed SAPs are submitted to the agency for review and approval by the FAA's TR. Once approved, the contractor initiates site activities, and samples are collected and sent to a laboratory for analysis. The analytical results from the sampling are used to determine the nature and extent of site contamination, and to assess risk posed to human health and the environment.

5-5. RISK ASSESSMENT AND FUTURE LAND-USE OPTIONS

a. The analytical results, collected during the Phase III – Site Characterization, are used to assess the potential risk to human and ecological receptors. This data, in turn, can be used to develop appropriate risk-based cleanup levels in the absence of specific media criteria. Acceptable risk levels are typically in the 10^{-4} to 10^{-6} (one-in-10,000 to one-in-a-million) range for potentially impacted populations. Each of the following must be evaluated to determine the overall risk posed to human and ecological receptors:

(1) Source characterization – Identifies the contaminants of concern and their rates of release.

(2) Exposure assessment – Identifies the potentially exposed populations, pathways of exposure, and the extent of exposure.

(3) Dose-response evaluation – Assesses the type of effects that could occur and the magnitude of the effects.

(4) Risk characterization – Determines the amount of exposure involved, its associated risks, and the relative significance of the risk.

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

c. Future land use options are also considered when determining risk. There are four commonly recognized future land use options: industrial-commercial, agricultural, recreational, and residential. When considering the impacts of future land use on the overall risk of the property, the industrial-commercial option is usually the least and the residential option is the most conservative. Future land use options must be evaluated in conjunction with risk to determine the appropriate level of risk reduction and cost effectiveness during the cleanup process. Keep in mind that EPA, state and local environmental regulatory agencies often select the most restrictive land use option - the residential scenario - in setting and approving risk-based cleanup goals.

5-6. REMEDIAL ALTERNATIVES, EVALUATION AND SELECTION

a. Remedial alternatives are screened against evaluation criteria to reduce the number available for selection and implementation. Refer to Appendix 8 for a sample listing of remedial technologies. Only the remedial alternatives most representative of the evaluation criteria should be considered. In general, the evaluation criteria consists of the following:

(1) Overall protection of human health and the environment.

(2) Compliance with Applicable or Relevant and Appropriate Requirements (ARARs).

(3) Long-term effectiveness and permanence.

(4) Reduction of toxicity, mobility, or volume through treatment.

(5) Short-term effectiveness.

(6) Ability to implement.

(7) Cost.

(8) State acceptance.

(9) Community acceptance.

b. Developing and assessing a (simple to complex) range of technically appropriate alternatives is important in order to evaluate feasibility relative to FAA's mission. The short-list of remedial alternatives may include the following:

(1) No action (i.e., natural attenuation).

(2) Institutional controls (such as deed restrictions or perpetual federal ownership).

(3) Technological solutions (involving remedial, demolition, or decontamination activities).

(4) Or some combination of the above.

5-7. PHASE III REPORT

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

(1) Prior site activities.

(2) Efforts leading up to site characterization.

(3) Sampling rational and activities.

(4) Final sampling results, clearly displayed with a complete vertical and horizontal distribution of site contaminants and concentrations.

(5) A comparison of these results to site ARARs, background levels, or risk-based action levels.

(6) Appropriate cleanup goals.

(7) Results from the analysis of applicable cleanup alternatives.

(8) Recommended alternatives and their rational, technical implementation issues, and costs.

b. The Phase III report will constitute the guideline and technical basis for any further, possibly costly, remediation activity planned at the site. As such, it must be closely reviewed and understood by agency technical staff and decision-makers. Refer to Appendix 9 for a suggested outline of the Phase III report.

APPENDIX 1

ACRONYM LIST

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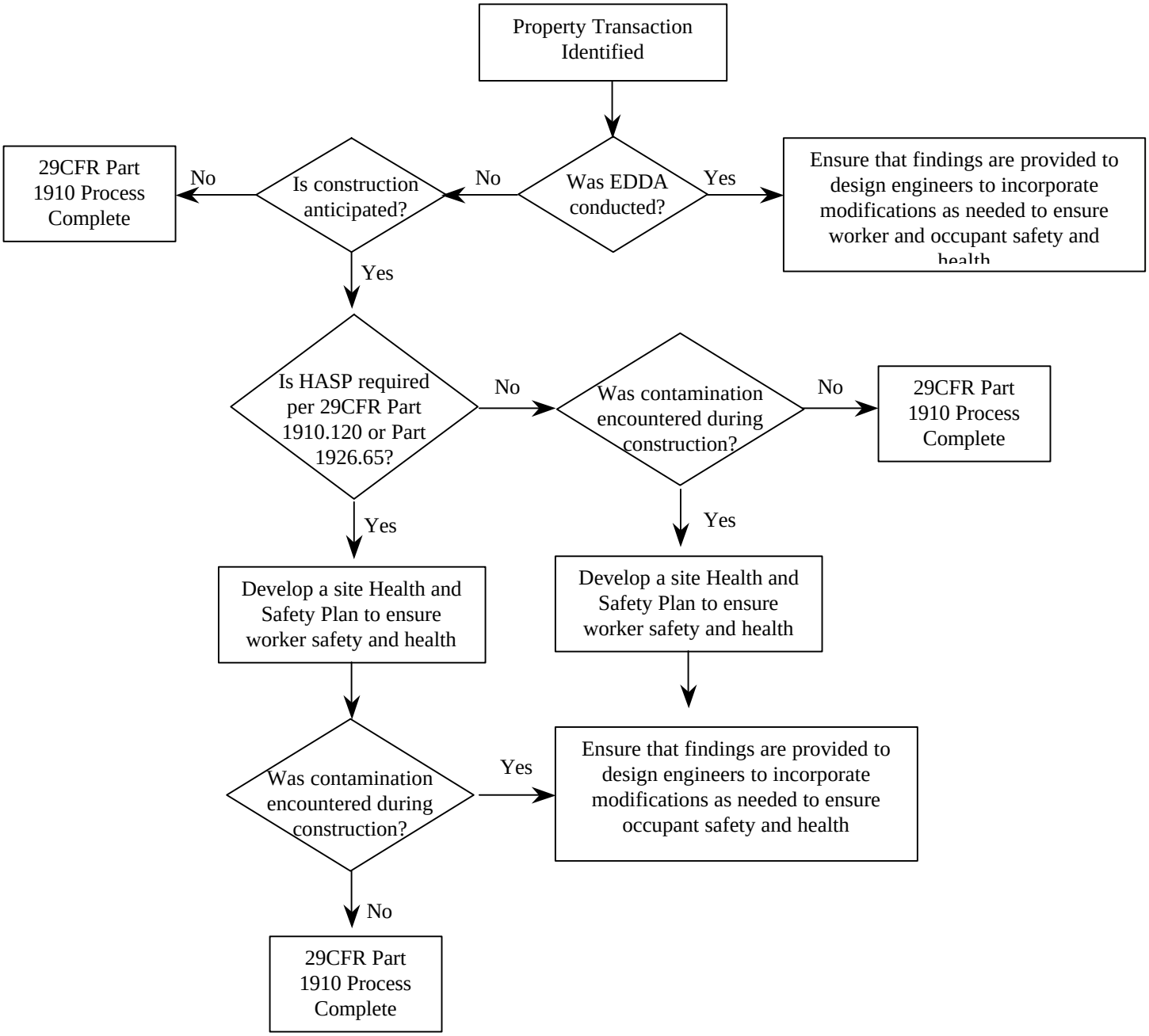
AEE	Office of Environment and Energy
AF	Airway Facilities
AMS	Acquisition Management System
ANI	NAS Implementation Program
APB	Acquisition Program Baseline
ARAR	Applicable or Relevant and Appropriate Requirement
ASTM	American Society for Testing and Materials
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Emergency Response Facilitation Act
CO	Contracting Officer
COTR	Contracting Officer's Technical Representative
EDDA	Environmental Due Diligence Audit
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAST	FAA Acquisition System Toolset
FRDF	Facility Reference Data File
FSP	Field Sampling Plan
HASP	Health And Safety Plan
HSCC	Hazardous Substance Contamination Clause
IPT	Integrated Product Team
LOB	Line of Business
OSHA	Occupational Safety and Health Administration
PE	Professional Engineer
PG / PH	Professional Geologist / Professional Hydrologist
PRP	Potentially Responsible Party
PRT	Program Requesting Transaction
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance / Quality Control
RCRA	Resource Conservation and Recovery Act
RECO	Real Estate Contracting Officer

RPMES	Regional Program Manager for Environment and Safety
SA	Site Assessor
SAP	Sampling and Analysis Plan
SOW	Scope of Work
TR	Technical Reviewer

APPENDIX 2

EDDAs & SAFETY AND HEALTH

APPENDIX 2 USE OF EDDAs IN SAFETY AND HEALTH PROCESS



APPENDIX 3

PHASE I, II, AND III EDDA CONTRACTOR SPECIFICATIONS

APPENDIX 3 PHASE I, II, AND III EDDA CONTRACTOR SPECIFICATIONS

INTRODUCTION

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

SPECIFICATIONS

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

- Include an explicit scope of work as part of the request for proposals (RFP) and contract
- RFP may not always be used-often credit card
- 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 and Geological Services
iii. Environmental science and engineering, including the following disciplines: geology, asbestos management, hazardous materials management, and hydrogeology. Regulatory expertise is also required.
iv. Two years of experience conducting Phase I site assessments.
v. 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.

vi. Years: Five
vii. Subject Matter Expertise: Environmental Sciences
viii. Degree: MS or Ph.D.
ix. Phase I Experience: Two years of experience within the last five years.

(3) Team Member Experience.

x. Years: Three
xi. Subject Matter Expertise: Environmental Sciences
xii. Degree: MS or BS
xiii. Professional Affiliations: Professional Engineer or Geologist Registration preferred

xiv. Phase I Experience: Two years of experience, within the last three years.

(4) Indemnification and Insurance. The contractor must:

xv. Be willing to indemnify the Agency for the result of its professional and other negligence
xvi. Possess a minimum limitation of liability to $1 million
xvii. Carry limits of errors and omissions insurance of at least $1 million
xviii. Carry limits of general liability insurance of at least $1 million
xix. Carry workers compensation insurance
xx. Provide certificates of insurance (evidencing coverage) for each of the coverages.

(6) Report Quality.

xxi. Report experience should show a similar approach to conducting Phase I as outlined in Agency's guidelines for transferring real property and complying with the Community Environmental Response Facilitation Act (CERFA).
xxii. Reports should be readable and comprehensible by the lay person.
xxiii. Reports should explain all conclusions and explain the relevancy and implication of findings to the Agency. 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 EDDAs.

(9) Locations. The contractor must be easily accessible to the Agency 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 Agency and the contractor must provide that the contractor shall not disclose information obtained from the Agency or related to its relationship with the Agency to third parties without the express consent of the Agency.

(11) Cost. Cost shall be reasonable and within the prevailing rates charged by similarly situated contractors.

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. Knowledge of FAA facilities and equipment

(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.

Phase II and III EDDA Contractor Procurement Specifications

The following specifies qualifications for a Phase II EDDA contractor, and was extracted from Federal Aviation Administration (FAA) Order 1050.19.

a. General.

Phase II EDDAs 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 EDDAs, when selecting a contractor to assist the Agency in performing Phase II EDDAs, 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 EDDA precludes the issuance of detailed procurement specifications. The following general criteria shall be used when evaluating the potential Phase II EDDA 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 EDDAs 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.

(3) 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 Agency 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) Report Quality.

- **i.** Report experience should show a similar approach to conducting Phase II EDDAs as outlined in the Agency EDDA 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 Agency. Regulatory and some legal issues also should be explained.

(6) Size of the Firm. The contractor shall have demonstrated capabilities to adequately staff and conduct two Phase II EDDAs concurrently for the Agency.

(7) 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.

(8) Location. While the primary contractor shall be easily accessible to the Agency Headquarters, to minimize costs, the contractor shall also have staff in the areas likely to be the location of Phase II activities.

(9) 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 Agency and the contractor must provide that the contractor shall not disclose information obtained from the Agency or related to its relationship with the Agency to third parties without the express consent of the Agency.

(10) Cost. Cost shall be reasonable and within the prevailing rates charged by similarly situated contractors.

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.**

(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

APPENDIX 4

DEFINITIONS

APPENDIX 4 DEFINITIONS

1. **Abandonment or Destruction:** Method of disposing of surplus personal property which usually involves leaving the property at its original location and site, or taking action to relocate the property to a public or private dump where it is normally crushed, burned, or buried. This method is not permitted for hazardous materials.

2. **Aboveground Storage Tank (AST):** All tanks not classified as underground storage tanks, or tanks and associated piping that are more than 90 percent, by volume, aboveground

3. **Acquisition:** The act of becoming the owner or holder of an interest in certain real property**.**

4. **Applicable or Relevant and Appropriate Requirements (ARARs):** ARARs are defined as follows:

   (1) Applicable Requirements: Those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Comprehensive Environmental Response Compensation and Liability Act (CERCLA) site.

   (2) Relevant and Appropriate Requirements: Those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site.

5. **Cleanup:** Actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and/or the environment. The term 'cleanup' is sometimes used interchangeably with the term's remedial action, removal action, response action, or corrective action.

6. **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended:** Imposes on property owners and operators strict, joint and several liability for environmental damage, and provides a limited defense for innocent landowners. The Act also provides EPA with funding and enforcement authority for responding to hazardous substance spills, for cleaning up high-risk, and non-federal hazardous waste sites in the United States.

7. **Comprehensive Environmental Response, Compensation, and Liability Information System, (CERCLIS):** EPA's database and management system that inventories and tracks releases addressed or needing to be addressed by the Superfund program.

8. **Community Environmental Response Facilitation Act (CERFA)**: Congress amended CERCLA § 120(h) under the Community Environmental Response Facilitation Act (Public Law 102-426) to expedite the sale of federal land that is determined to be uncontaminated (42USC§9620h). The amendment is referred to as CERFA and is intended to identify federal land and properties offering the greatest opportunity for reuse and redevelopment, expedite necessary remedial and corrective actions, make the property available for sale. Under §120(h) of CERCLA, whenever the U.S. government enters into a contract to sell or transfer federal property, a notice must be placed in the contract for sale

reporting any hazardous substance that has been stored for a year or more, known to be released, or was disposed of on the property. A similar notice must be placed in the deed, as well as a covenant that all necessary remedial action has been taken by the time of the transfer and ensure the continued liability of the federal government when appropriate.

9. **Decommissioning :** process of removing a facility from operation. It may include decontaminating, entombing, dismantling, or converting to another use.

10. **Disposal:**
    - *Of Wastes*—Final placement or destruction of toxic, radioactive, or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental releases. Disposal may be accomplished through use of approved secure landfills, surface impoundment, land farming, deep-well injection, ocean dumping, or incineration as permitted by law.
    - *of Personal Property*—The act of discarding or relinquishing responsibility and control over excess or surplus property in accordance with appropriate Government regulations through transfer, donation, sale, abandonment or destruction. (Note: generators of hazardous waste can be held liable for improper disposal.)
    - *of Real Property*—The transfer of ownership and/or other real property rights to another party or parties.

11. **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 and to submit information to state and local communities to develop chemical emergency plans (42USC §§ 11001-11950). The regulations govern planning and notification, emergency notification and community right-to-know.

12. **Environmental Assessment (EA):** An environmental analysis prepared pursuant to the National Environmental Policy Act (NEPA) to determine whether a federal action would significantly affect the environment and thus require a more detailed environmental impact statement.

13. **Environmental Audit:** An independent assessment of the status of a party's compliance with applicable environmental requirements or of a party's environmental compliance policies, practices, and controls.

14. **Environmental Impact Statement (EIS):** A document required of federal agencies by the National Environmental Policy Act (NEPA) for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and cites alternative actions.

15. **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, or 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 (42USC§9601(9)).

16. **Feasibility Study (FS):** In a CERCLA remedial process, the FS is the analysis of the practicability of a proposal; e.g., a description and analysis of potential cleanup alternatives for a site such as one on

the National Priorities List. The feasibility study usually recommends selection of a cost-effective alternative. It usually starts as soon as the remedial investigation is underway; together, they are commonly referred to as the "RI/FS" (See also Remedial Investigation).

17. **Federal Property Management Regulations (FPMR):** The Government regulations (41 CFR Part 101) that govern and guide federal agencies relative to management and control of property when GSA authorities are being used.

18. **Field Sampling Plan (FSP):** A plan that defines in detail the sampling and data gathering activities to be used at a site (See also Site Analysis Plan.).

19. **Finding of No Significant Impact (FONSI):** A document prepared by a federal agency in accordance with the National Environmental Policy Act (NEPA) showing why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement. A FONSI is based on the results of an environmental assessment.

20. **Friable Asbestos:** Any material containing more than one-percent asbestos, and that can be crumbled or reduced to powder by hand pressure. (May include previously non-friable material, which becomes broken or damaged by mechanical force.) Friable asbestos releases fibers into the environment that may cause health problems.

21. **Ground Water:** The supply of fresh water found beneath the earth's surface, usually in aquifers, which supply wells and springs. Because ground water is a major source of drinking water, there is growing concern over contamination from leaching agricultural or industrial pollutants or leaking underground storage tanks.

22. **Hazard Evaluation:** A component of risk evaluation that involves gathering and evaluating data on the types of health injuries or diseases that may be produced by a chemical and on the conditions of exposure under which such health effects are produced.

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

24. **Hazard Ranking System (HRS):** The principal screening tool used by EPA to evaluate risks to public health and the environment associated with abandoned or uncontrolled hazardous waste sites. The HRS calculates a score based on the potential of hazardous substances spreading from the site through the air, surface water, or ground water, and on other factors such as density and proximity of human population.

25. **Hazardous Substance:**
    - Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive.
    - Any substance designated by EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or is otherwise released into the environment

26. **Hazardous Waste:** A waste that possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on special EPA lists. Hazardous Wastes can pose a substantial or potential hazard to human health or the environment when improperly managed.

27. **Health and Safety Plan (HASP):** A site plan that describes the physical and chemical hazards at a site and the measures that will be taken to ensure health and safety of site workers.

28. **Holding Agency:** The executive agency, which has accountability for the property involved.

29. **Innocent Landowner Defense:** In CERCLA, the third-party defense, often called the "innocent landowner" provision, provides a narrow exemption from liability associated with ownership of the land by claiming the landowner made a good faith effort to discover any contamination prior to acquisition. The elements of the defense are found in CERCLA 101(35) and 107b(3) (42USC§9601 (35) and §9607b(3)).

30. **Joint and Several Liability:** A legal concept, under CERCLA, that relates to the liability of more than one potentially responsible party for Superfund site cleanup and related costs. For a site that became contaminated over the years, all current and previous owners, operators, or users could be considered potentially liable for the entire cost of cleaning up the site.

31. **Lead (Pb):** A heavy metal that is hazardous to health if inhaled or ingested. Its use in gasoline, paints, and plumbing compounds has been sharply restricted or eliminated by federal laws and regulations

32. **Lease Termination:** To end the action of renting real property from another party.

33. **Liability:** The state of being obligated according to law. Environmental liability refers to the state of being obligated to address through positive actions environmental factors or issues. This may include requirements to fund site remediation or compliance with environmental regulations.

34. **National Pollutant Discharge Elimination System (NPDES):** A provision of the Clean Water Act (CWA) which prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA, a state, or, where delegated, a tribal government on an Indian reservation.

35. **National Priorities List (NPL):** EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under Superfund. The list is based primarily on the score a site receives from the Hazard Ranking System. EPA is required to update the NPL at least once a year.

36. **National Response Center:** The federal operations center that receives notifications of all releases of oil and hazardous substances into the environment; open 24 hours a day, is operated by the U.S. Coast Guard, which evaluates all reports and notifies the appropriate agency.

37. **Outgrant / Outlease:** transactions where the FAA has real property rights over a piece of property and passes certain of those rights on to another party.

38. **Personal Property:** Any property, except: real property, records of the Federal Government, and naval vessels.

39. **Pollutant:** Generally, any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.

40. **Pollution Prevention (P2):** The reduction or prevention of waste products or pollutants through analysis and subsequent alteration or elimination of a process. P2 techniques may include: substitution of less polluting products, re-use of wastes and residuals, recycling, and engineered efficiencies to industrial and treatment processes.

41. **Potentially Responsible Party (PRP):** Any individual or company—including owners, operators, transporters or generators—potentially responsible for, or contributing to a spill or other contamination. Whenever possible, through administrative and legal actions, EPA requires PRPs to clean up hazardous sites they have contaminated.

42. **Preliminary Assessment (PA):** The process of collecting, reviewing and reporting available information about a known or suspected hazardous waste site or release, in accordance with CERCLA (42 U.S.C. § 9620).

43. **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/entity to another. This includes sale, lease, eminent domain, disposal and foreclosure.

44. **Remedial Action (RA):** The actual construction or implementation phase of a Superfund (CERCLA) site cleanup that follows remedial design.

45. **Remedial Investigation (RI):** An in-depth study designed to gather data needed to determine the nature and extent of contamination at a Superfund (CERCLA) site; establish site cleanup criteria; identify preliminary alternatives for remedial action; and support technical and cost analyses of alternatives. The remedial investigation is usually done with the feasibility study. Together they are usually referred to as the "RI/FS" (see also Feasibility Study).

46. **Remediation:** Actions taken to remove or contain a toxic or hazardous substance release. Activities may include isolating, enclosing, encapsulating, treating or removing site contamination.

47. **Reportable Quantity (RQ):** Quantity of a hazardous substance that triggers reporting under CERCLA. If a substance exceeds its RQ, the release must be reported to the National Response Center, the State Emergency Response Commission (SERC), and community emergency coordinators for areas likely to be affected.

48. **Resource Conservation and Recovery Act (RCRA):** The federal regulation 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.

49. **Risk Assessment:** Qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or use of specific pollutants. (See also Risk)

50. **Risk:** A measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.

51. **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. The plan documents the

comprehensive field and analytical activities and objectives for conducting the site confirmation sampling (see also Field Sampling Plan).

52. **Site Assessor (SA):**

53. **Site Inspection (SI):** The collection of information from a Superfund (CERCLA) site to determine the extent and severity of hazards posed by the site. It follows and is more extensive than a preliminary assessment (PA). The purpose is to gather information necessary to score the site, using the Hazard Ranking System, and to determine if it presents an immediate threat requiring prompt removal.

54. **Stakeholder:** Any organization, governmental entity, or individual that has an interest (or stake) in or who may be affected by a given approach or issue (such as environmental regulation, pollution prevention, energy conservation, etc.).

55. **State Emergency Response Commission (SERC):** Commission appointed by each state governor according to the requirements of SARA Title III. The SERCs designate emergency planning districts, appoint local emergency planning committees, and supervise and coordinate their activities (42USC §§11001-11950).

56. **Superfund:** The program operated under the legislative authority of CERCLA and SARA that provides for liability, compensation, cleanup and emergency response for hazardous substances released into the environment, and the cleanup of hazardous waste disposal sites.

57. **Toxic Chemical:** Any chemical listed in EPA rules as "Toxic Chemicals Subject to Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986."

58. **Toxic Substance Control Act (TSCA):** The federal regulation that gives EPA the authority to require testing of chemical substances, both new and old, entering the environment and to regulate them where necessary. The Act provides specific requirements for the use and disposal of Polychlorinated biphenyl (PCB) and asbestos.

59. **Underground Storage Tank (UST):** A tank and associated piping that are 10 percent or more below the surface of the ground, and which are used for the storage of a regulated substance (e.g., gasoline, petroleum products, chemicals or waste oil). EPA excludes: tanks used for heating purposes, septic tanks, surface impoundment, and stormwater or wastewater collection systems from the federal UST regulation. State regulations, however, vary and may mandate some or all of the tanks excluded by the EPA.

60. **Wastewater:** The spent or used water from a home, community, farms, or industry that contains dissolved or suspended matter.

61. **Water Pollution:** The presence in water of enough harmful or objectionable material to damage the water's quality.

62. **Water Quality Standards:** State-adopted and EPA-approved ambient standards for water bodies. The standards prescribe the use of the water body and establish the water quality criteria that must be met to protect designated uses.

APPENDIX 5

ENVIRONMENTAL RESOURCES

APPENDIX 5 ENVIRONMENTAL RESOURCES

www.gsa.gov	Office of Real Property Policy - General Reference Guide to Real Property Policy
	Environmental Services and Products - Environmental Products and Services Guide
	GSA Environmental Guidebook
www.epa.gov	Directory of Regional Offices CFTF Guide on Evaluating Environmental Liability for Property Transfers Potential Insurance Products for Brownfields Cleanup and Redevelopment
www.epa.gov/oeca/idea	IDEA Database - historical profile of inspections, enforcement actions, penalties assessed, toxic chemicals released, and emergency hazardous spills for any EPA regulated facility
www.usgs.gov	Maps, aerial photographs, geologic and hydrogeologic data
www.astm.org	ASTM standards (1527 and 1528)
www.aee.faa.gov/aee-200	Office of Environment and Energy

APPENDIX 6

EXAMPLE PHASE I REPORT OUTLINE

APPENDIX 6 EXAMPLE PHASE I REPORT OUTLINE*

E.S. Summary

1.0 Introduction

2.0 Site Location and Description

3.0 Site Ownership and Use

- 3.1 Site Ownership
- 3.2 Site Use - Historical
- 3.3 Site Use - Current

4.0 Records Review

- 4.1 Federal Records
- 4.2 State Records
- 4.3 Local Records

5.0 Site Inspection

- 5.1 Site Buildings
- 5.2 Site Grounds
- 5.3 Underground Storage Tanks
- 5.4 Aboveground Storage Tanks
- 5.5 Transformers
- 5.6 Asbestos
- 5.7 Indoor Air
- 5.8 Radioactive Materials
- 5.9 Motor Pools, Shops and Laboratories Operations, Analyses and Experiments
- 5.10 Other Information
- 5.11 Facility Records

6.0 Adjacent and Neighboring Properties

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 Sensitive Environmental Areas

- 8.1 Wetlands
- 8.2 Historic Value
- 8.3 Recreational Land Use
- 8.4 Future Use and Zoning

9.0 Supplemental Information and Previous Studies

10.0 Conclusions and Recommendations

11.0 Signatures of Environmental Professionals

12.0 Qualifications of Environmental Professionals Participating in Phase 1 Site Assessment.

APPENDICES

- Site Location Map
- Site Plan
- Site Photographs
- Site Ownership Records
- Federal, State, Local, and EPA Facility Records
- Aerial Photographs
- List of Chemicals Used and In Use at the Facility
- Material Safety Data Sheets
- Groundwater Monitoring Results
- Previous Site Work Repairs

* Report outline will vary according to site conditions.

APPENDIX 7

EXAMPLE PHASE II REPORT OUTLINE

APPENDIX 7 EXAMPLE PHASE II REPORT OUTLINE*

1.0 Introduction
- 1.1 Summary of Known Information Findings of Phase I Assessment
- 1.2 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
  - 5.3.2 Analytical Parameters Including Justification
- 4.2 Sampling Methods
  - 4.2.1 Sampling Methods and Procedures
  - 4.2.2 Boring Logs
  - 5.3.2 Field Screening Data
- 4.3 Analytical Methods
  - 4.3.1 Analytical Parameters Including EPA Method Number and Detection Limit
  - 5.3.2 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 (QA/QC) 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
  - 5.3.2 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 and Extent of Contamination

6.0 Conclusions and Recommendations

APPENDICIES

* Report outline will vary according to site conditions.

APPENDIX 8

SAMPLE LIST OF REMEDIATION TECHNOLOGIES

APPENDIX 8 SAMPLE LIST OF REMEDIATION TECHNOLOGIES

TECHNOLOGY	DESCRIPTION
Asbestos Containment/Removal	Immobilization of asbestos fibers to ensure that particles cannot become friable. Traditional abatement can also include complete removal of asbestos fibers which can be an extremely expensive procedure.
Incineration/Thermal Treatment	Heat is used to concentrate or alter the concentration of soil contaminants. The technology is effective in treating organic wastes; however, it is expensive.
Capping/Slurry Wall	Wastes are isolated to prevent migration. This remedial solution is not recommended because it simply contains wastes and does not eliminate significant hazards.
Excavation/Off-Site Disposal	Material is transported off-site for disposal at an approved facility. Limited landfill capacity and RCRA Land Disposal Restrictions have made this option increasingly expensive.
Bioremediation	Microorganisms are used to consume and render the waste less hazardous. The process is limited by several factors, including salinity of soils, presence of metals, use of designer microorganisms, and toxicity of contaminant substrates. This technology tends to be among the least expensive ones and is gaining public acceptance.
Soil Venting	Air is drawn through wells drilled around the treated area and assists in removing volatile chemicals. Soil venting is inexpensive to install and effective for volatile chemicals only.
Soil Washing	A washing solution is applied to an excavated area of contaminated soil which removes persistent wastes. The cleaned soil is then returned to the excavation site. This process is effective in treating most contamination, but is expensive and time-consuming for small quantities.
Groundwater Pump and Treat	Wells are installed around the site of contamination and water is pumped to retrieve contaminants. This technology tends to be expensive and require many years to effectively remove site contamination.

APPENDIX 9

EXAMPLE PHASE III REPORT OUTLINE

APPENDIX 9 EXAMPLE PHASE III REPORT OUTLINE*

1.0 Introduction
- 1.1 Summary of Findings from Phase I and II Investigations
- 1.2 Scope of Phase III

2.0 Site Maps/Building Plans

3.0 Sources of Contamination
- 3.1 Description of Contaminant Sources
- 3.2 Locations of Contaminant Sources
- 3.3 Approximate Date/Type/Quantity of Release

4.0 Sampling and Analysis Results
- 4.1 Soil Sampling
  - 4.1.1 Sample Types
    - 4.1.1.1 Procedures for Each Type
    - 4.1.1.2 Boring Logs
    - 4.1.1.3 Physical and Chemical Field Screening Data Quality Objectives
    - 4.1.1.4 Field Analytical Procedures
    - 4.1.1.5 Field Deviations from Sampling and Analysis Plan
  - 4.1.2 Sample Locations
    - 4.1.2.1 Objectives and Sampling Rationale
    - 4.1.2.2 Distribution and Density
    - 4.1.2.3 Deviations from Sampling and Analysis Plan
  - 4.1.3 Laboratory Analysis
    - 4.1.3.1 Laboratory Analysis Data Quality Objectives
    - 4.1.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
    - 4.1.3.3 Quality Assurance Sample Analysis Results
  - 4.1.4 Sampling and Analysis Results
    - 4.1.4.1 Data Presentation including Tables
    - 4.1.4.2 Discussion of Results
    - 4.1.4.3 Maps, cross-sections, and other diagrams depicting extent of contamination
- 4.2 Groundwater Sampling
  - 4.2.1 Sample Types
    - 4.2.1.1 Procedures for Each Type
    - 4.2.1.2 Physical and Chemical Field Screening Data Quality Objectives
    - 4.2.1.3 Field Analytical Procedures
    - 4.2.1.4 Deviations from Sampling and Analysis Plan
  - 4.2.2 Sample Locations
    - 4.2.2.1 Objectives and Well Placement Rationale
    - 4.2.2.2 Surveyed Well Locations, Depths, and Screened Intervals
    - 4.2.2.3 Sampling Depths
    - 4.2.2.4 Field Deviations from Sampling and Analysis Plan
  - 4.2.3 Laboratory Analysis
    - 4.2.3.1 Laboratory Analysis Data Quality Objectives
    - 4.2.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
    - 4.2.3.3 Quality Assurance Sample Analysis Results

4.2.4 Sampling and Analysis Results

4.0 Sampling and Analysis Results (*continued*)

4.2.4.1 Data Presentation including Tables
4.2.4.2 Discussion of Results
4.2.4.3 Maps, cross-sections, and other diagrams depicting extent of contamination

4.3 Surface Water/Sediment Sampling
4.3.1 Sample Types
4.3.1.1 Procedures for Each
4.3.1.2 Physical and Chemical Field Screening Data Quality Objectives
4.3.1.3 Field Analytical Procedures
4.3.1.4 Deviations from Sampling and Analysis Plan
4.3.2 Sample Locations
4.3.2.1 Objectives and Rationale
4.3.2.2 Sediment Sampling Depths
4.3.2.3 Field Deviations from Sampling and Analysis Plan
4.3.3 Laboratory Analysis
4.3.3.1 Laboratory Analysis Data Quality Objectives
4.3.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
4.3.3.3 Quality Assurance Sample Analysis Results
4.3.4 Sampling and Analysis Results
4.3.4.1 Data Presentation including Tables
4.3.4.2 Discussion of Results
4.3.4.3 Maps and Other Appropriate Diagrams Depicting Contaminant Distribution

4.4 Building HVAC Systems Sampling
4.4.1 Sample Types
4.4.1.1 Procedures for Each
4.4.1.2 Physical and Chemical Field Screening Data Quality Objectives
4.4.1.3 Field Analytical Procedures
4.4.1.4 Deviations from Sampling and Analysis Plan
4.4.2 Sample Locations
4.4.2.1 Objectives and Rationale
4.4.2.2 Duct Work Sampling Intervals
4.4.2.3 Duct Outlet Sampling Throughput Volumes
4.4.2.4 Field Deviations from Sampling and Analysis Plan
4.4.3 Laboratory Analysis
4.4.3.1 Laboratory Analysis Data Quality Objectives
4.4.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
4.4.3.3 Quality Assurance Sample Analysis Results
4.4.4 Sampling and Analysis Results
4.4.4.1 Data Presentation including Tables
4.4.4.2 Discussion of Results
4.4.4.3 Schematic Diagrams Depicting Contaminant Distribution

4.5 Building Surfaces Sampling

4.5.1 Sample Types
4.5.1.1 Procedures for Each Type
4.5.1.2 Physical and Chemical Field Screening Data Quality Objectives
4.5.1.3 Field Analytical Procedures

4.0 Sampling and Analysis Results (*continued*)

4.5.1.4 Deviations from Sampling and Analysis Plan
4.5.2 Sample Locations
4.5.2.1 Objectives and Rationale
4.5.2.2 Pipe Insulation Sampling Intervals
4.5.2.3 Ambient Air Sampling Throughput Volumes
4.5.2.4 Field Deviations from Sampling and Analysis Plan
4.5.3 Laboratory Analysis
4.5.3.1 Laboratory Analysis Data Quality Objectives
4.5.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
4.5.3.3 Quality Assurance Sample Analysis Results
4.5.4 Sampling and Analysis Results
4.5.4.1 Data Presentation including Tables
4.5.4.2 Discussion of Results
4.5.4.3 Schematic Diagrams Depicting Contaminant Distribution
4.6 Summary of Findings

5.0 Risk and Future Land-Use Options
5.1 Risk Assessment
5.1.1 Qualitative Risk Assessment
5.1.1.1 Rationale for Performing Qualitative Risk Assessment
5.1.1.2 Discussion of Contaminants of Concern and Pathways Considered
5.1.1.3 Results of Qualitative Risk Assessment
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
5.2 Future Land-Use Options
5.2.1 Discussion on Future Land-Use Options
5.2.2 Rationale for Selection of Future Land-Use Option
5.2.3 Relationship Between Future Land-Use and Overall Risk at the Property

6.0 Final Technology or Alternative
6.1 Final Technology or Alternative Selection
6.1.1 Description of Screening Process
6.1.2 Description of Technologies or Alternatives Under Consideration
6.1.3 Comparative Analysis of Technologies or Alternatives
6.1.3.1 Overall Protectiveness of Human Health and the Environment
6.1.3.2 Compliance With ARARs
6.1.3.3 Long-Term Effectiveness
6.1.3.4 Reduction of Toxicity, Mobility, or Volume Through Treatment
6.1.3.5 Short-Term Effectiveness

6.1.3.6 Implementability
6.1.3.7 Cost
6.1.3.8 State Acceptance
6.1.3.9 Community Acceptance
6.1.4 Detailed Discussion of Selected Alternatives
6.1.5 Implementation Plan and Schedule for Selected Alternatives
6.1.6 Statutory Determination for Selected Alternatives

7.0 Conclusions and Recommendations
7.1 Conclusions
7.1.1 Summary of Site Characterization
7.1.2 Discussion on Success in Meeting Remediation Goals and Objectives
7.2 Recommendations
7.2.1 Discussion on follow-up Actions

APPENDICES (as needed)
- Site location and topography
- Sampling locations and designation (excepts from FSP)
- Site safety and health plan
- Field and boring logs
- QA/QC program and documentation (e.g. chain of custody and laboratory QA/QC program)
- Laboratory analytical results
- Mapping of contamination plumes and zones
- Remedial alternative technical/cost specifications

*** Report outline will vary according to site conditions.**