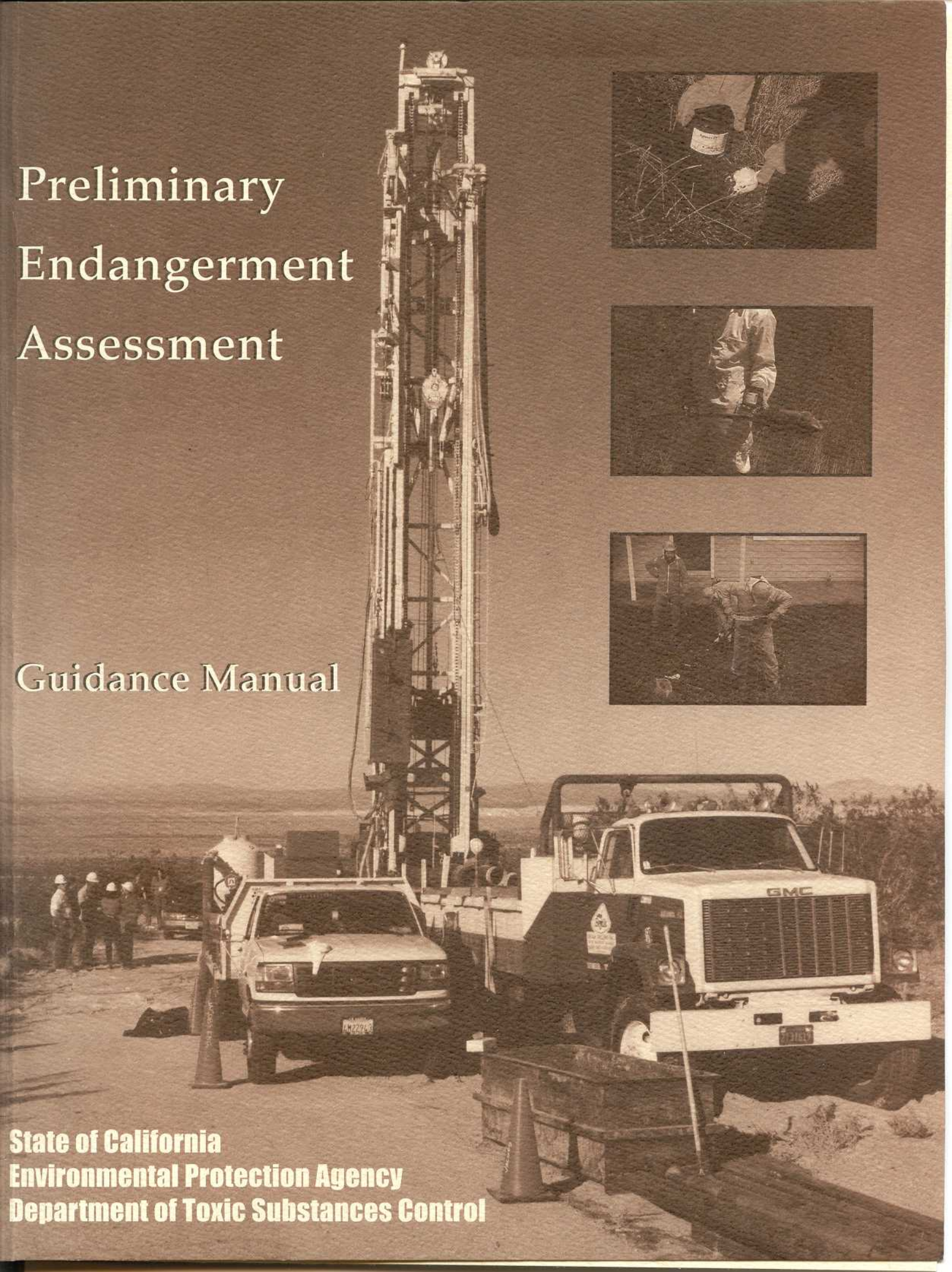


# Preliminary Endangerment Assessment

## Guidance Manual



**State of California  
Environmental Protection Agency  
Department of Toxic Substances Control**



# PRELIMINARY ENDANGERMENT ASSESSMENT GUIDANCE MANUAL

(A guidance manual for evaluating hazardous substance release sites.)



State of California  
Environmental Protection Agency

Department of Toxic Substances Control  
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## LIST OF ACRONYMS

<b>Cal/EPA</b>	- California Environmental Protection Agency
<b>DFG</b>	- California Department of Fish and Game
<b>DOT</b>	- Department of Transportation
<b>DWR</b>	- California Department of Water Resources
<b>OSA</b>	- Office of Scientific Affairs, California Department of Toxic Substances Control
<b>OSHA</b>	- Occupational Safety and Health Administration
<b>RWQCB</b>	- Regional Water Quality Control Board
<b>SWRCB</b>	- State Water Resources Control Board
<b>USEPA</b>	- United States Environmental Protection Agency
<b>USGS</b>	- United States Geological Service
<b>CERCLIS</b>	- Comprehensive Environmental Response, Compensation and Liability Information System
<b>CEQA</b>	- California Environmental Quality Act
<b>HEAST</b>	- Health Effects Assessment Summary Tables
<b>HWIS</b>	- Hazardous Waste Information System
<b>IRIS</b>	- Integrated Risk Information System
<b>NDDB</b>	- Natural Diversity Database
<b>ARAR</b>	- Applicable or Relevant and Appropriate Requirement
<b>CCR</b>	- California Code of Regulations
<b>CERCLA</b>	- Comprehensive Environmental Response, Compensation and Liability Act
<b>CFR</b>	- Code of Federal Regulations
<b>HSC</b>	- Health and Safety Code
<b>RCRA</b>	- Resource Conservation and Recovery Act
<b>MCL</b>	- Maximum Contaminant Level
<b>NCP</b>	- National Contingency Plan
<b>NPL</b>	- National Priorities List
<b>PA/SI</b>	- Preliminary Assessment/Site Investigation
<b>PEA</b>	- Preliminary Endangerment Assessment
<b>PRG</b>	- Preliminary Remediation Goal
<b>PRP</b>	- Potential Responsible Parties
<b>QA/QC</b>	- Quality Assurance/Quality Control
<b>RfC</b>	- Reference Concentration
<b>RfD</b>	- Reference Dose
<b>RI/FS</b>	- Remedial Investigation/Feasibility Study
<b>SF</b>	- Slope Factor (also Cancer Potency Factor)
<b>SSP</b>	- Site Safety Plan
<b>TSD</b>	- Treatment, Storage, and Disposal
<b>VOC</b>	- Volatile Organic Chemical

## PREFACE

This document replaces the Interim Guidance for Preparation of a Preliminary Endangerment Assessment Report (DHS 1990). The previous guidance should no longer be used; however, issuance of this new manual does not invalidate Preliminary Endangerment Assessments completed before (or in progress prior to) its release. This revised guidance manual addresses a number of issues raised since application of the previous manual and differs from previous guidance most significantly in the methodology for conducting the human health and ecological screening evaluations.

The primary intended users of the manual are environmental consultants conducting PEAs for private parties with Department of Toxic Substances Control (Department) oversight. Because experience and professional judgement are vital for drawing the conclusions and presenting the recommendations requisite in the PEA, private parties are responsible for procuring the services of an environmental professional when preparing a PEA report. The manual will also be used by State Contractors and Department staff conducting PEAs with State funds. Other agencies or private entities requiring the use of the manual will be responsible for acting as lead agency and providing oversight for the project.

The PEA incorporates much of the information required for completion of the preliminary assessment and site

inspection (PA/SI) investigations formerly conducted as part of the Department's site mitigation process and currently used by the USEPA. The PEA also has background information requirements similar to a Phase I Environmental Site Assessment required by most lending institutions prior to commercial real estate transactions. Although overall PEA requirements are more comprehensive than requirements for the PA/SI and Phase I Assessments, it is anticipated that information gathered for the PEA may also be useful for those purposes. Specific requirements of the PEA that are not typically required for these other types of investigations include the site specific human health and ecological screening evaluations, public participation requirements, and scoping activities.

As written, the manual attempts to provide useful guidance for all possible site sizes and scenarios. A critical goal of scoping the PEA is to agree upon the focus of the PEA investigation and the degree to which each requirement in the manual applies to the subject site. Although each element of the PEA report must be addressed, the scope of the investigation and level of detail required for each section is discussed with the Department's project manager overseeing the PEA activities. This manual is not intended to be a "cook book" of mandatory ingredients required to produce a PEA report. Each section should be reviewed to determine the appropriate level of action for a given site.



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# CHAPTER ONE

## INTRODUCTION

The Preliminary Endangerment Assessment (PEA) provides basic information for determining if there has been a release of a hazardous substance that presents a risk to human health or the environment. With the passage of Senate Bill 475 in July 1989, the PEA became a formal step in the site mitigation process of the Department of Toxic Substances Control (Department). The PEA was incorporated into the site mitigation process to establish a mechanism for determining if known or potential hazardous substance sites require immediate or long-term remedial actions by the Department or with Department oversight.

### 1.3 ORGANIZATION OF THIS MANUAL

This guidance manual is organized into three chapters. Chapter 1 provides background information defining the PEA, explains how the PEA ties into the site mitigation process and discusses the Department's responsibility to recover costs associated with oversight of the PEA. Chapter 2 provides technical guidance for conducting the PEA investigation, which includes scoping the project, acquiring background information, procedures for gathering reliable chemical and physical data, and methodologies for conducting the human health and ecological screening evaluations. Chapter 3 provides the suggested outline for presentation of the PEA investigation results in a PEA report. Chapter 3 also provides general guidance on how to organize the PEA report and a detailed description of

information that should be included in the report.

This manual also includes two appendices: Appendix A provides tables for use with the Screening Evaluation, and Appendix B provides derivations for the equations used in the Screening Evaluation.

### 1.2 DEFINITION/OBJECTIVES OF THE PEA

The PEA is defined in California Health and Safety Code, Division 20, Chapter 6.8, Section 25319.5 as follows:

"Preliminary Endangerment Assessment means an activity which is performed to determine whether current or past waste management practices have resulted in the release or threatened release of hazardous substances which pose a threat to public health or the environment."

Specific objectives of the PEA include:

- Determining if a release of hazardous wastes/substances exists at the site and delineating the general extent of the contamination.
- Estimating the potential threat to public health and/or the environment posed by the site and providing an indicator of relative risk among sites.
- Determining if an expedited response

action is required to reduce an existing or potential threat to public health or the environment.

- Completing preliminary project scoping activities to determine data gaps and identify possible remedial action strategies to form the basis for development of a site strategy.
- Providing the data and information necessary to list the site, if necessary, for inclusion in the Department's Annual Workplan.
- Assessing and providing for the informational needs of the community.

### **1.3 THE PEA WITHIN THE SITE MITIGATION PROCESS**

The Department's site mitigation process can be divided into several general phases: site evaluation, expedited response, site characterization, remedial action, certification and operation and maintenance. The PEA is intended to be an initial investigation of contamination and is completed during the site evaluation phase. Elements of the site evaluation phase are discussed in the following section. Figure 1.1 presents a flow chart of the site mitigation process and elements of the site evaluation phase. Detailed information regarding the entire site mitigation process can be obtained by contacting one of the Department's Regional offices or Headquarters office.

The site evaluation phase of the site mitigation process includes activities such as site discovery; site screenings; the PEA; potentially responsible party searches; and site listing activities. Throughout the site evaluation phase, human and ecological risk-based assessments are conducted. The

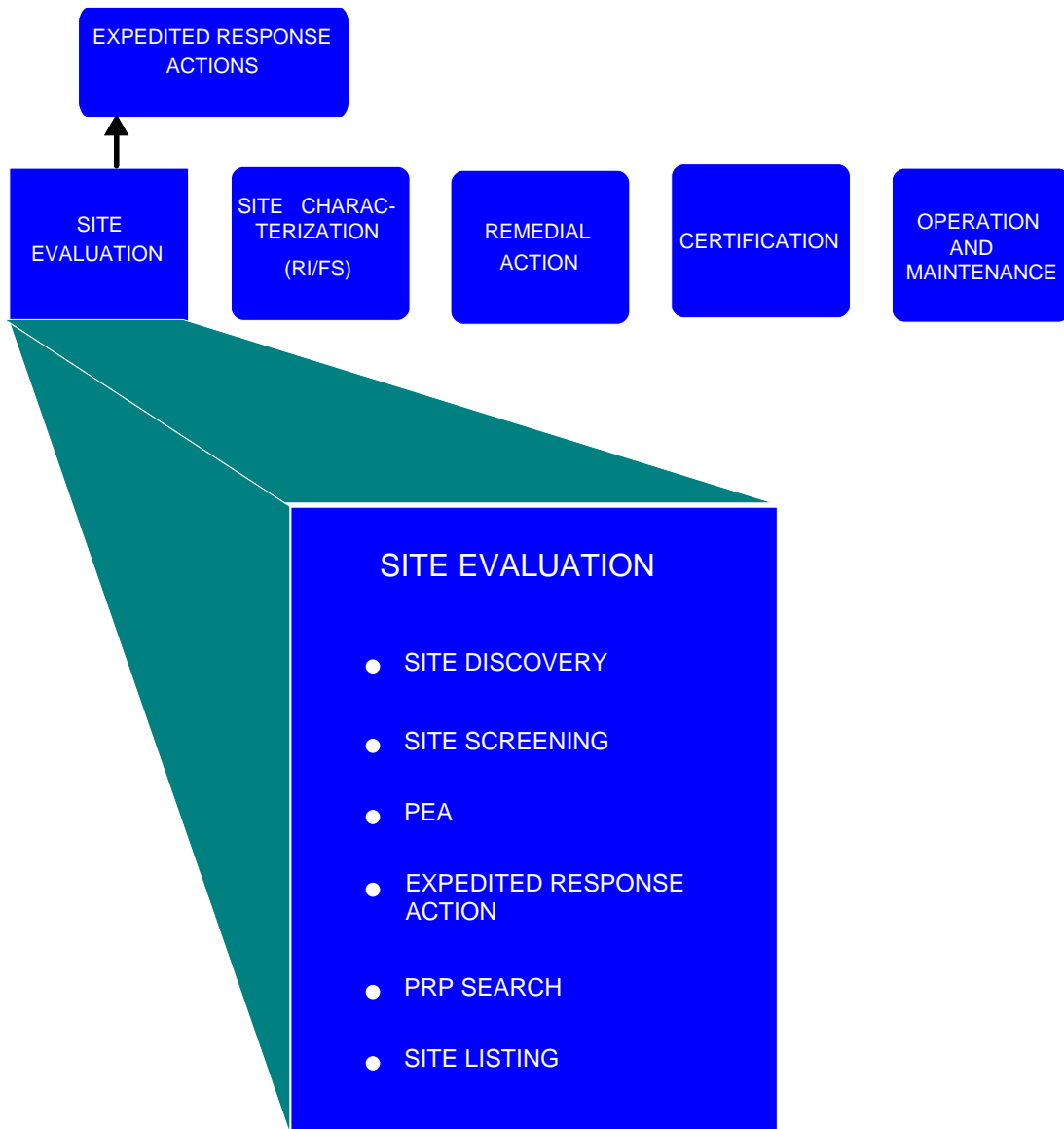
risk-based assessments begin as qualitative judgements which become progressively more quantitative as additional site specific information is collected and factors potentially impacting human health or the environment are evaluated.

At any time during or following the site evaluation phase, an expedited response action may be necessary. Expedited response actions are those actions taken to eliminate any immediate threats to public health or the environment resulting from conditions at the site. These actions generally include but are not limited to fencing the site, capping or coating contaminated areas, removing containers of hazardous substances/wastes, and/or providing alternative water supplies. Expedited response actions should be identified and implemented as early as possible during the site evaluation process.

Site discovery, the first step of site evaluation, involves the identification of known or potentially contaminated sites that were previously unknown to the Department. Following discovery, a site screening is conducted by Regional Department staff to determine whether a site should be evaluated further and whether the site falls within the jurisdiction of Department site mitigation authority. Based on the screening, one or more of the following recommendations will generally be made:

- No further action required;
- Site referred to another agency;
- Site referred to another Departmental program;
- PEA required; and/or
- Expedited response action required.

FIGURE 1.1: DEPARTMENT OF TOXIC SUBSTANCES CONTROL  
SITE EVALUATION WITHIN THE SITE MITIGATION PROCESS



Once a site has been screened and the determination made that a PEA is necessary, the responsible person(s) will be notified and requested to contact the Department to initiate the PEA. Typical scenarios for conducting the PEA include:

- The Department identifies a site with a known or suspected release of hazardous substances/wastes and contacts the responsible person(s) to initiate the investigation. The responsible person(s) either agrees to assess the site or the Department issues an administrative order requiring the completion of the PEA with penalties for non-compliance.
- Responsible person(s) contact the Department to obtain oversight for a site assessment prior to a property transfer, development of the property, change in land use, etc.
- A site with a known or suspected release of hazardous substances/wastes is identified, but the responsible person(s) have not been identified and potential or significant public health or environmental threats warrant use of the Department's resources to assess the site.

Figure 1.2 presents a diagram of the PEA process from the point of initiation with the Department to preparation of the final report. As seen in the diagram, Initiate PEA, Background Research, Data Evaluation, and Report Preparation are steps required for all PEA investigations. The majority of the investigation's flexibility lies within Public Participation, Sampling, and Human Health and Environmental Screening Evaluations. These sections are dependent upon site specific circumstances and need not be completed at all sites. However, be advised that exclusion of one or more of these

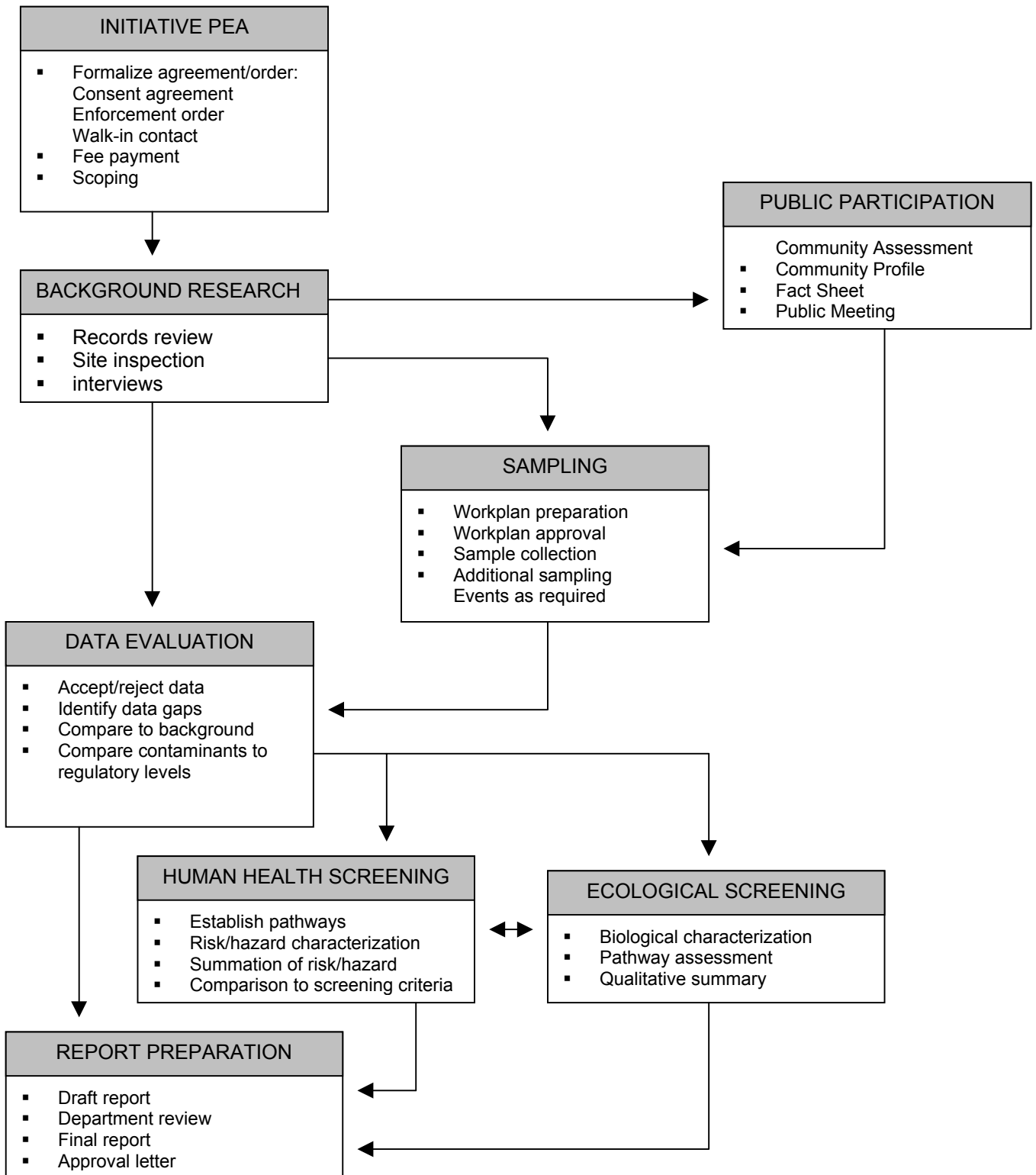
sections will be the exception to the norm and must be approved in advance by Department staff. All of the sections in the diagram are flexible with regard to the level of effort required for each site.

The completed PEA report provides the information necessary to determine the need for further action at the site. Department staff will review the data provided in the PEA report to determine if the recommendations in the report are justified. Sites requiring no further action will be released from Department oversight requirements. However, if at a later date information becomes available which indicates other potential problems exist, the Department may initiate additional investigations at the site. Sites with significant contamination requiring further action will move along in the site mitigation process for removal and/or remedial actions. In either case the Department will issue a letter formalizing completion of the PEA, approving or disputing the recommendations, and detailing any recommendations or requirements not presented in the PEA report that the Department feels are necessary to address onsite contamination.

Department approval of a "no further action" recommendation signifies that the Department's concerns at the site have been addressed; however, other agencies may require further action based on concerns not addressed during the PEA. For example, the Regional Water Quality Control Board (RWQCB) may require actions to protect and restore water quality. Whenever possible, the preparer and Department staff should coordinate with other agencies to address their concerns during the PEA.

Following completion of the PEA, a base-line potentially responsible party (PRP) search (USEPA, 1987b) may be necessary to

**FIGURE 1.2: PRELIMINARY ENDANGERMENT ASSESSMENT  
PROCESS DIAGRAM**



identify the principal parties potentially liable for mitigating contamination at the site. Much of the information required to complete the baseline PRP search should be contained in the PEA report. PRPs identified by the search will be required to contribute to the work to be conducted beyond the PEA and may be required to reimburse a portion of the PEA costs.

Site listing is the final step of the site evaluation phase. The Department is required pursuant to Section 25356 of the Health and Safety Code to prioritize and list all sites that require removal/remedial work. Information provided in the PEA report is used to prioritize sites for listing. Sites on the list are added to the site mitigation program's annual workplan when removal/remedial work will begin within the current fiscal year.

#### **1.4 COST RECOVERY**

California law requires the Department to recover all costs incurred by the Department associated with the investigation and cleanup of contaminated sites (HSC Section 25360). HSC Section 25343 authorizes the

assessment of a fee for overseeing the PEA investigation, developing the report and reviewing the final document. The current fee for oversight of a PEA is \$8,000<sup>1</sup>; however, actual costs for the PEA investigation often exceed the fee amount. The final cost for oversight depends on the number of hours expended by Department staff. PEAs typically require 135 to 250 hours of Department staff time and range from 9 to 18 months from beginning to completion. The PEA fee is generally collected at the beginning of the project, and the actual cost that exceeds the PEA fee may be paid on a quarterly basis or at the end of the project. The method for final payment will depend on the type of agreement in place at the onset of the project.

1. \$8,000 is the amount from July 1, 1993 through June 30, 1994. The fee amount is adjusted annually to reflect increases or decreases in the cost-of-living, as measured by the Consumer Price Index issued by the Department of Labor or a successor agency of the United States Government.