



The CERCLA Process: A Long, Winding Road

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This fact sheet is one of a series prepared for RAB members about the Travis Air Force Base (AFB) Installation Restoration Program (IRP).

Cleaning up hazardous waste sites doesn't happen overnight. Why? Probably because the law that governs many such cleanups is called CERCLA—and the first "C" in CERCLA stands for "comprehensive."

The Comprehensive Environmental Response, Compensation and Liability Act, or CERCLA, is also known as Superfund. It regulates the cleanup at most of the hazardous waste sites at Travis AFB. CERCLA sets forth a step-by-step process of investigation and action that must be completed for all sites. The time to complete the CERCLA process can last as long as several years, depending on the complexity of the site and the amount of contamination present. The process begins with...

DISCOVERY

A site in this case simply means a discrete area where contaminants may have been released to the environment. A site can be discovered in a number of ways, such as investigations, historical documentation, referrals from other agencies, or first-hand reports from members of the public. At this stage, the site may be called an Area of Concern (AOC).

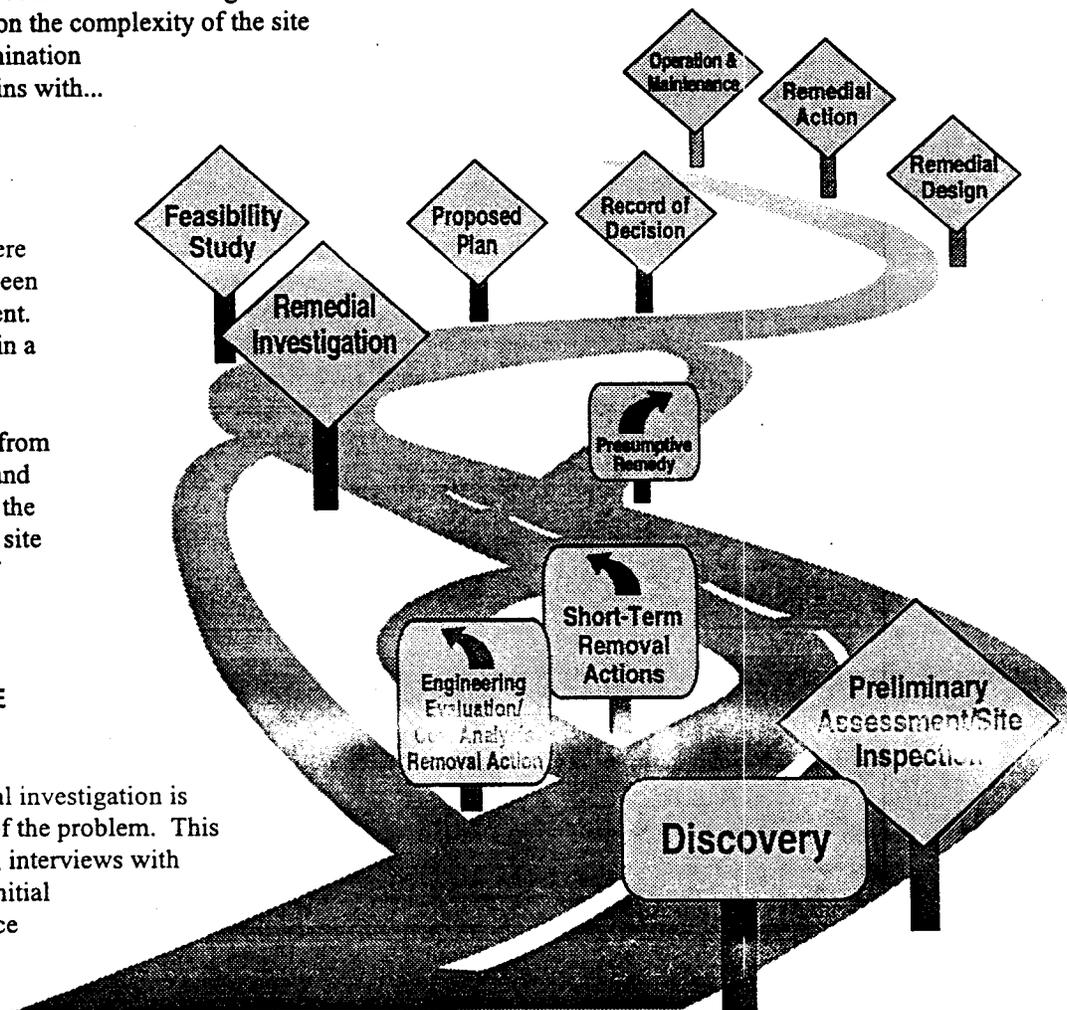
PRELIMINARY INVESTIGATION/SITE INSPECTION (PAISI)

The first step in the actual investigation is to evaluate the severity of the problem. This includes record searches, interviews with former employees, and initial sampling at the site. Once completed, investigators have a good idea

of what may or may not be present at the site. This background information is compiled into a Preliminary Site Assessment Report.

SHORT-TERM CLEANUP/REMOVAL ACTIONS

If an immediate health or environmental threat exists, Air Force officials can take short-term actions. These short term actions are called *removal actions*. For instance, if people were being exposed to soil contami-



nants at dangerous levels, the soils could be removed. These short-term actions allow the base to address immediate health threats before a more lengthy investigation is completed. These actions are temporary measures, but are consistent with long-term plans for the site.

ENGINEERING EVALUATION COST ANALYSIS (EE/CA)

If the contamination does not pose an immediate threat, but quick action is still necessary, say, to allow construction of a needed building, a longer-term removal action can be undertaken. In this case, the Air Force prepares an Engineering Evaluation/Cost Analysis (EE/CA). An EE/CA balances technical concerns with cost for each removal alternative under consideration. The EE/CA reviews removal alternatives; it is similar to an FS for a remedial action. An Action Memo is then prepared to document why a particular alternative was selected. The Action Memo is similar to a Record of Decision (ROD) for a remedial action. An EE/CA can be identified and undertaken at any step in the process.

REMEDIAL INVESTIGATION/ FEASIBILITY STUDY (RI/FS)

The Remedial Investigation (RI) defines the nature and extent of the contamination, and gathers the technical information needed to evaluate possible ways to clean up the site. Environmental engineers must first understand site conditions that affect contamination migration and, therefore, may affect possible cleanup actions. At groundwater sites, for example, information about the site's geology and groundwater movement is needed before a remedy can be applied.

During the RI, the project team also collects and analyzes data about waste characteristics. Soil, groundwater, surface water, or living organisms (such as fish) are sampled. The samples are then tested to see what contaminants are present and at what levels. Samples taken from different locations can show how far the contamination has spread and help to determine the extent of contamination. A comprehensive RI can take several months to a few years to complete depending on the number of areas being investigated.

Sites that are shown during the RI to be contaminated are carried forward through the CERCLA process into the Feasibility Study (FS). During the FS, site cleanup alternatives are identified and evaluated. For most sites there is a range of alternatives. For instance, at a site where leaking drums have contaminated the soil, the soils could be removed to an appropriate disposal location, the soil could be capped to prevent contamination from spreading off-site, or the soil could be treated on-site to destroy the contamination. The FS evaluates the alternatives using nine criteria specified by

CERCLA, such as short- and long-term effectiveness, ability to destroy contaminants, and cost. The FS identifies the most cost-effective alternatives.

PRESUMPTIVE REMEDY

A presumptive remedy is a cleanup technology that has been used successfully at other sites. If a particular site's conditions are similar to those where the technology has been used before, the technology (for example, soil vapor extraction) may be selected. This shortens the time it takes to reach remediation.

PROPOSED PLAN (PP)

The Proposal Plan (PP) describes the recommended cleanup plan, selected from the evaluation in the FS. At most sites, the final cleanup involves a combination of alternatives. The PP is available to regulatory agencies and the public for review during a 30-day comment period. During this time a public meeting is held to explain the alternatives available and solicit public comment.

RECORD OF DECISION (ROD)

Following feedback from the public, a remedy is chosen. A Responsiveness Summary addresses public comments and is incorporated into a document called the Record of Decision (ROD). It is this ROD that officially indicates the chosen cleanup method.

REMEDY DESIGN (RD)

After a method is chosen, engineers must plan how to implement the decision. The Remedial Design (RD) details how the cleanup will proceed. For instance, if contaminated soil is being removed from the site, the RD will define which soil to remove, how deep to dig, how to get heavy equipment to and from the site, how to decontaminate the equipment, where to take the soil, and what to replace it with. It will also outline precautions to take, and the type of monitoring to be done during the process.

REMEDIAL ACTION (RA)

Once the RD is completed, site cleanup begins. Depending on the type and volume of contaminants, remedial actions can last from several weeks to several years.

OPERATION AND MAINTENANCE (O&M)

After the remedial actions are complete or treatment systems are in place, the Air Force still must oversee site operation and maintenance. These activities may continue for as many as 10 or 15 years. In fact, operations and maintenance is likely to continue even longer at very complex sites with extensive contamination.