



Presumptive Remedies: Policy and Procedures

Office of Emergency and Remedial Response
Hazardous Site Control Division 5203G

Quick Reference Fact Sheet

Since Superfund's inception in 1980, the remedial and removal programs have found that certain categories of sites have similar characteristics, such as types of contaminants present, types of disposal practices, or how environmental media are affected. Based on information acquired from evaluating and cleaning up these sites, Superfund is undertaking an initiative to develop presumptive remedies to accelerate future cleanups at these sites. The presumptive remedy approach is one tool of acceleration within the **Superfund Accelerated Cleanup Model (SACM)**.

The objective of the presumptive remedies initiative is to use the program's past experience to streamline site investigations and speed up selection of cleanup actions. Overtime presumptive remedies are expected to ensure consistency in remedy selection and reduce the cost and time required to clean up similar types of sites. Presumptive remedies are expected to be used at all appropriate sites except under unusual site-specific circumstances. EPA plans to develop a series of directives on presumptive remedies for various types of sites.

This directive serves as an overall guide to the presumptive remedies initiative and its effect on site cleanup. Through a question and answer format, it explains, in general terms, ways in which presumptive remedies will streamline or change the remedial and removal processes from the conventional processes and how certain Superfund policies will be affected by the initiative. This directive also unites the series of directives, due to come out over the next year, on presumptive remedies for specific site types (e.g., Volatile Organic Compounds (VOCs), wood treaters, ground water). This general directive, together with the site type-specific directives, will provide readers with a comprehensive knowledge of the procedural as well as policy considerations of the presumptive remedies initiative. The directive is designed for use by staff involved in managing site cleanups (e.g., Remedial Project Managers (RPMs), On-Scene Coordinators (OSCs), Site Assessment Managers (SAMs)). Site managers in other programs, such as RCRA Corrective Action, the Underground Storage Tank program, State Project Managers, or private sector parties, may also use this directive, as appropriate.

Provided below are several common questions and answers regarding general issues associated with presumptive remedies.

Q1. What Are Presumptive Remedies and How Should They Be Used?

A. Presumptive Remedies are preferred technologies for common categories of sites, based on historical patterns of remedy selection and EPA's scientific and engineering evaluation of performance data on technology implementation. EPA has evaluated technologies that have been consistently selected at past sites using the remedy selection criteria set out

in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP); reviewed currently available performance data on the application of these technologies; and has determined that a particular remedy, or set of remedies, is **presumptively** the most appropriate for addressing specific types of sites.

Presumptive remedies are expected to be used at all appropriate sites. The approaches described in each presumptive remedies directive are designed to accommodate a wide range of site-specific circumstances. In some cases, multiple technologies are included (e.g., VOCs); in others, various



components of the presumptive remedy are optional, depending on site situation (e.g., municipal landfills). Further, these directives recognize that at some sites, there may be unusual circumstances (such as complex contaminant mixtures, soil conditions, or extraordinary State and community concerns) that may require the site manager to look beyond the presumptive remedies for additional (perhaps more innovative) technologies or remedial approaches.

These tools will help site managers to focus data collection efforts during site investigations (e.g., remedial investigations, removal site evaluation) and significantly reduce the technology evaluation phase (e.g., Engineering Evaluation/Cost Analysis (EE/CA) and/or Feasibility Studies (FS)) for certain categories of sites. The specific impacts on the various stages of the remedy selection process are highlighted in questions 7 and 8 of this guidance. It is advised that presumptive remedies be used with the assistance of the expert teams¹ for the various categories of sites.

Q2. Why Should Presumptive Remedies Be Used?

Presumptive remedies are expected to have several benefits. Limiting the number of technologies considered should promote focused data collection, resulting in streamlined site assessments and accelerated remedy selection decisions which achieve time and cost savings. Additional time savings could be realized during the remedial design since early knowledge of the remedy may allow technology-specific data to be collected upfront during the remedial investigation. Presumptive remedies will also produce the added benefit of promoting consistency in remedy selection, and improving the predictability of the remedy selection process for communities and potentially responsible parties (PRPs).

Presumptive remedies may be used as part of a wide variety of response actions. These actions include non-time-critical removal and early remedial actions, actions at sites with different leads (e.g., Fund-lead, State-lead, PRP-lead), actions addressing one or more contaminated media, actions with several operable units, and actions involving treatment trains.

Q3. Can Presumptive Remedies be Implemented Within the Existing NCP Process?

Yes. The presumptive remedy approach is consistent with all of the requirements of the NCP, and in particular the site management principle of streamlining (see section 300.430(a)(1)(ii)(C)). The presumptive remedy approach simply consolidates what have become the common, expected results of site-specific decision making at Superfund sites over the past decade. The various presumptive remedies directives and supporting documentation (e.g., "Feasibility Study Analysis for CERCLA Sites with Volatile Organic Compounds in Soils") provide the basis for an administrative record which justifies consideration of a very limited number of cleanup options. These materials summarize the findings of EPA's research and analysis, and the reasons that were found for generally considering certain technologies more or less appropriate.

The availability of presumptive remedies does not preclude a Region from expanding the FS (either on its own initiative or at the suggestion of outside parties) to consider other technologies under unusual site-specific circumstances. The site type directives will define the kind of circumstances (e.g., soil conditions, heterogeneous and complicated contamination mixtures, field tests demonstrating significant advantages of alternate or innovative technologies, etc.) that may make presumptive remedies less clearly suited for particular sites. Most of these directives also provide references to additional technologies if the presumptive remedies are found not to apply at a particular site.

Q4. How Did the Presumptive Remedies Initiative Evolve?

- A. The general concept of presumptive remedies was first proposed in 1990 during the Superfund 90-Day Study and subsequently in 1991 during the 30-Day Study as a method of accelerating the remedial process. These management studies were efforts to generate options for accelerating the overall Superfund clean-up process. The presumptive remedies initiative is also consistent with, and supports, a larger program initiative known as the Superfund Accelerated Cleanup

¹ It is envisioned that for most categories of sites, teams of experts (technical, legal, policy, etc.) who have developed the presumptive remedies guidance and Regional site managers conducting field demonstrations, will be available to assist site managers in implementing presumptive remedies on a site-specific basis.

**Table 1
Current Presumptive Remedies and Contacts**

Site Type/Schedule	Presumptive Remedy(ies)	Anticipated Products	EPA Contact
General Policy and Procedures (9/93)	NA	<i>Presumptive Remedies: Policy and Procedures</i>	Shahid Mahmud Headquarters, HSCD (703) 603-8789
Volatile Organic Compounds (VOCs) in Soils (9/93)	Soil Vapor Extraction, Thermal Desorption, Incineration	<i>Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites with VOCs in Soils</i>	Shahid Mahmud Headquarters, HSCD (703) 603-8789
Wood Treaters (6/94)	For Organics - Incineration, Bioremediation, Dechlorination For Inorganics - Immobilization	<i>Presumptive Remedy: Wood Treating Sites</i> <i>Technology Selection Guide for Wood Treater Sites (5/93)</i>	Lisa Boynton Headquarters, ERD (703) 603-9052 Harry Allen Emergency Response Division (908) 321-6747
Municipal Landfills (9/93)	Containment (could include capping, leachate collection and treatment, LF gas treatment, institutional controls, etc.)	<i>Presumptive Remedy for CERCLA Municipal Landfill Sites</i>	Andrea McLaughlin Headquarters, HSCD (703) 603-8793
Contaminated Ground Water (1/94)	Pump and Treat (Will specify preferred treatment technologies & describe overall approach)	TBD	Ken Lovelace Headquarters, HSCD (703) 603-8787
Region 7 Pilots - PCB Sites, Coal Gas Sites, Grain Storage Sites (6/94)	TBD	TBD	Diana Engeman Region 7 (913) 551-7746

KEY:
TBD - To Be Determined
NA - Not Applicable

Model (SACM). SACM incorporates the experience gained from past Superfund actions into an integrated approach to site cleanup aimed at getting response action decisions made and implemented more quickly. The presumptive remedies initiative is one mechanism for accomplishing the broad streamlining goal set forth by SACM. The presumptive remedies initiative was also identified as one of the Administrative Improvements to Superfund in June of 1993.

Q5. What Other Presumptive Remedy Initiatives are Underway or Planned?

A. There are a variety of presumptive remedy activities currently planned or underway. Table 1 lists the site types with the anticipated schedule of associated presumptive remedy products that are currently underway along with the Headquarters and Regional contacts. There are four site types for which

presumptive remedies are being developed in EPA Headquarters: VOCs, wood treaters, municipal landfills, and contaminated ground-water sites. Concurrently, Region 7 is preparing presumptive remedy guidances for PCB, coal gasification, and grain storage sites.

Q6. How Will Presumptive Remedies Affect the Remedy Selection Process?

A. Presumptive remedies are anticipated to affect several phases of the current remedy selection process. A diagram depicting the generic impacts on the overall process is provided in Table 2.

Data collection during the initial site assessment (Preliminary Assessment/Site Inspection (PA/SI)

**Table 2
Generic Effect of Presumptive Remedies**

Phases of Cleanup Process		Effect on Cleanup Process
SITE ASSESSMENT	PA/SI or Removal Site Evaluation	X
	Scoping • Collect and analyze existing data	○
	• Identify initial project/OUs and remedial action objectives	■
	• Identify range of likely alternatives	■
	• Identify potential ARARs	○
	• Identify initial DQOs	○
	• Prepare project plans	■
	Remedial Investigation • Conduct field investigation	X ⁽¹⁾
	• Define nature and extent of contamination	○ ⁽¹⁾
	• Identify ARARs	○
• Conduct baseline risk assessment	○ ⁽¹⁾	
FEASIBILITY STUDY OR EE/CA	Remedy Selection • Identify potential treatment technologies and containment/disposal requirements	●
	• Screen technologies	●
	• Assemble technologies into alternatives	●
	• Screen alternatives as necessary to reduce number subject to detailed analysis	●
	• Further refine alternatives as necessary	■
	• Analyze alternatives against the nine criteria and each other	■
	Proposed Plan	■
	Record of Decision	■
	Remedial Design	■

○ = not impacted ■ = Streamlined
 X = Focused ● = Eliminated
 (1) Streamlined for Municipal Landfills

or Removal Site Evaluation) can be used to help define the specific site typw and to determine whether presumptive remedies may be potentially applicable.

Assuming the site warrants further attention (i.e., it is listed on the National Priorities List (NPL) or determined by the Regional Decision Team (RDT) to be an NPL-caliber site or to merit a removal action), further confirmation of the site type should take place as either an RI/FS or EE/CA is scoped to determine whether the site is a potential candidate for presumptive remedies. For a detailed discussion of how to make this determination, refer to the appropriate site type-specific directive. If it is determined that a site falls into a certain category, the presumptive remedies associated with that site type should be included in the list of likely remedial alternatives (e.g., no action, presumptive remedies, etc.) For the site. Other aspects of scoping that may be affected by presumptive remedies are the designation of appropriate operable units (OUS) and identification of data needed to support the evaluation and selection of a presumptive remedy.

Presumptive remedies are expected to help focus data collection efforts. Specifically, initial data collection would focus on confirming the site type. If the site is of the typw for which presumptive remedies have been developed, the streamlined steps for site characterization outlined in the site type-specific directive for the particular site type should be followed. These steps outline data collection to determine the extent of contamination and to support selection of the presumptive remedy and Remedial Design (RD).

Presumptive remedies will streamline the FS and the alternatives analysis in the EE/CA more than any other phase of the remedy selection process. In most cases, after a site is confirmed as being a type for which presumptive remedies exist, a focused FS or EE/CA which eliminates the technology identification and screening step would be prepared. The study would limit its consideration to the no action alternative and the presumptive remedy technologies. This is possible because EPA has conducted an analysis of potentially available technologies for most of the presumptive remedies site categories and has determined that certain technologies are routinely and appropriately screened out either on the basis of effectiveness, implementability, or excessive cost (NCP Section 300.430 (e)(3) and (7)), or have not been selected under the nine criteria analysis identified in NCP Section 300.430 (e) (9). This detailed analysis will serve to substitute for the development and screening of alternatives phases of the FS (and will allow the

remaining alternatives to be limited to variations of the presumptive remedy). The site-specific directive and supporting documentation (e.g., "Feasibility Study Analysis for CERCLA Municipal Landfill Sites") along with this directive then can be placed in the administrative record for the site to support the elimination of the screening step identified in section 300.430 (e) (1) of the NCP. Further supporting materials can be provided by Headquarters (e.g., FS reports included in the analysis, technical reports), as needed. The specific presumptive remedy directives address the process of eliminating the alternatives development and screening step of the RI/FS or EE/CA in further detail. The directives also provide generic discussion of a partial nine criteria analysis (excluding state ARARs and community and state acceptance) and may help streamline the detailed analysis of alternatives within the FS and EE/CA reports. However, the user is cautioned that the criteria are discussed on a general basis and the nine criteria analysis should be supplemented to reflect the site-specific conditions.

The Proposed Plan (PP) and subsequent ROD would be similarly streamlined by focusing only on the presumptive remedy(ies). The remedial design (RD) may be streamlined since some RD data will likely have been collected previously during the site assessment and RI.

Q7. How Will Presumptive Remedies Affect the Removal Process?

A. Non-time critical removal actions are anticipated to be used more often to accomplish early actions at Superfund sites under SACM. The presumptive remedies approach will focus the data collection during the removal site evaluation and reduce the number of technologies identified and analyzed in the EE/CA. Presumptive remedies are not expected to have an impact on emergency and time-critical actions under the removal program.

Q8. What are the Implications of Presumptive Remedies for Innovative Technologies?

The NCP in section 300.430 (a) (1) (iii) (E) states that "EPA expects to consider using innovative technology when such technology offers the potential for comparable or superior treatment performance and implementability, fewer or lesser adverse impacts than other available approaches, or lower costs for similar levels of performance

than demonstrated technologies." The use of the presumptive remedies may tend to reduce the frequency of the full evaluation of innovative technologies. However, as indicated previously, the presumptive remedies provide a tool for streamlining the remedy selection process. They do not preclude the consideration of innovative technologies should the technologies be demonstrated to be as effective or superior to the presumptive remedies. Innovative technologies may be evaluated and recommended in addition to the presumptive remedies where these criteria are met.

EPA encourages review of the latest Innovative Technologies Semi-Annual Reports or Engineering Bulletins for the up-to-date information on the potential effectiveness and applicability of various innovative technologies. Site managers are strongly encouraged to involve the site-type expert team (see Question 13) to determine whether unusual circumstances exist to consider a non-presumptive remedy based on site-specific conditions and/or community, state, and PRP concerns, or the availability of a potentially promising innovative technology.

Q9. How Will Presumptive Remedies Affect Risk Assessments?

A. Generally, the role of baseline risk assessments under the presumptive remedy approach would be unaffected with Municipal Landfill sites being a notable exception. It is anticipated that risk assessments would still be needed on a site-specific basis to assist site managers in determining the need for a response action. EPA managers have indicated the value of the risk assessment in communicating with states, PRPs, and local communities about the nature and extent of health and environmental threats. Therefore, it is recommended that the current risk assessment process be continued on an individual site basis except for Municipal Landfills. The site manager should refer to the EPA Directive entitled "Presumptive Remedy for CERCLA Municipal Landfill Sites," Directive No. 9355.0-49FS to identify streamlining opportunities at Municipal Landfill sites.

Guidance on developing risk-based preliminary remediation goals (PRGs) would be unaffected under this initiative. These goals are needed for individual sites especially in the absence of ARARs to assist in determining which remedial options

will result in medium-specific chemical concentrations that are protective of human health. For example, there may be several candidate presumptive remedies identified in the site-type directives. But it is the extent and degree of contamination across a given site that will determine whether a technology, which is predicted to reduce a chemical's concentration to some specified level, will be adequate by itself to produce protective concentrations following remedial action. For some sites or site locations, because of the magnitude of contamination or co-occurrence of contaminants, it may be necessary to assemble several technologies into a treatment train to adequately reduce levels of all chemicals of concern in a medium to protective levels. In other cases, it may be necessary to evaluate the use of institutional and/or engineering controls on an area following remediation to ensure protection during subsequent land use. In other words, it is not reasonable to assume that because a specific technology resulted in "protection" at one site, it will result in protective levels at all sites. A determination that the selected remedy will result in protection of human health and the environment must be made for each site. Both ARARs and risk-based PRGs are important tools in this exercise.

Generally, presumptive remedy directives will specify those technologies that have been determined to achieve levels protective of human health and the environment under a variety of site conditions. However, because all sites differ to some extent, especially in their relation to surrounding communities and sensitive ecosystems, a determination must still be made on a site-specific basis as to how a given remedy design is expected to achieve "protectiveness" during remedy construction and following remedial action. Overall protection of human health and the environment is one of two threshold considerations (the other being compliance with ARARs) that must be met in order for an alternative to be eligible for selection as the remedy for a given site.

Q10. What if Outside Parties such as PRPs or the Community Want Other Alternatives Considered?

A. The identification of a presumptive remedy does not relieve EPA of the obligation to propose the remedy for public comment, or to respond to

comments suggesting that other alternatives should have been considered. In some cases, the information in the site-type directive and supporting documentation may be sufficient to address such comments; in others, additional analysis may be required to assess the relative merits of an alternative technology proposed by a commenter.

To reduce the risk of delay due to the need to respond to such comments, it is generally desirable to publicize the planned use of presumptive remedies early on, and give States, communities, PRPs, and others an early opportunity to express any concerns they may have about focusing the FS or EE/CA in this way. The agency may then decide whether to include additional alternatives in the FS or EE/CA so that those concerns can be addressed before the remedy is proposed.

In general, it is expected that the directive and supporting documents will provide substantial justification for preferring the presumptive remedy over alternative technologies. Therefore, the submission of comments advocating other approaches does not necessarily require broadening of the FS or EE/CA, or conducting additional analysis after the plan has been proposed. Whether additional documentation is required will depend upon how substantial or persuasive the comments are (e.g., whether a comment identifies unusual site circumstances that seriously call into question the applicability of the presumptive remedy). The Region will have to assess this by evaluating each comment on its own merits.

It should be noted that even if the FS is broadened to consider alternatives other than the presumptive remedy, much of the benefit of the presumptive remedy approach can still be achieved. In such cases, it is not necessary to address the full array of possible technologies, rather only the presumptive remedy and the specific alternative(s) that genuinely warrant detailed study. Therefore, the FS can still be narrowed and data gathering can still be focused.

Q11. How do State ARARs Affect the Use of Presumptive Remedies?

A. Any remedy, including presumptive remedies, must be selected in accordance with Section 121(d)(2)(A)(ii) of the Comprehensive Environmental Response, Compensation and Liability Act

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(CERCLA), which specifies that selected remedial actions comply with promulgated standards under Federal and more stringent State environmental laws (i.e., State ARARs). At this time it is difficult to predict situations where presumptive remedies will not comply with State ARARs, and such issues must necessarily be addressed on a site-specific basis. However, as the presumptive remedies have been widely selected, they are likely to be capable of meeting State ARARs.

Q12. What Are the Implications of Presumptive Remedies on Community, PRP, and State Relations?

A. It will generally be desirable to notify the community, State, and PRP(s) as early in the clean-up process as possible that presumptive remedies are being considered for the site. This notification can take the form of a fact sheet, a notice in the newspaper, and/or a public meeting in which the site manager (with assistance from the expert team, as desired) explains the rationale for taking such actions and distributes the appropriate directives of the site type in question. Additionally, the site manager should explain the potential benefits associated with the use of presumptive remedies such as time and cost savings, and consistency. Early discussions about the rationale for presumptive remedies should help instill confidence in both the technologies and remedy selection processes.

Q13. How Will EPA Communicate Progress on Current Presumptive Remedies, Newly Developed Presumptive Remedies, and Future Issues Related to Presumptive Remedies?

A. Information about presumptive remedies will be communicated in several ways. First, it is anticipated that an orientation will be provided to communicate the key elements of presumptive remedies to Regional site managers as appropriate. This may be followed by periodic meetings with expert teams, if necessary, to scope out the applications of presumptive remedies on a site-specific basis. The expert team may also be used to convey any new developments on technology or policies and procedures for general or specific applications. A quarterly conference call is also anticipated between site managers and the expert teams to allow for the exchange of ideas and to identify and resolve technical issues. Technology selection directives, SACM Bulletins, and Q&A directives will be published periodically to disseminate information on presumptive remedies and related issues as they arise. Finally, the presumptive remedies directives on the various site categories will be updated every several years to reflect new technology development and up-to-date performance data, as appropriate.

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