

The Remediation Process: Publicly Funded Cases^{*}

(Superfund and Non-Superfund)

Within the New Jersey Department of Environmental Protection (NJDEP), the Site Remediation and Waste Management (SRWM) program oversees the remediation of contaminated properties in accordance with our mandate to protect public health and the environment. The type of cases overseen by SRWM range from the replacement of household fuel tanks to large abandoned industrial facilities in the center of some of our largest cities. There are also many rural sites where ground water contamination has raised public health concerns. These concerns dictate that wells be tested and municipal waterlines extended to homes if contamination is found.

Overall, sites are either remediated by the *party responsible* for the contamination, or, in instances where there is no responsible party, by *the state of New Jersey*. The remediation process is slightly different in the two situations. This guidance document describes cases where there is no responsible party.

The Public Funded Remedial Process

It is important to understand the sequence of events that make up the remedial process when evaluating the cleanup progress at publicly funded Superfund and non-Superfund sites. A site consists of one or more subsites (sometimes referred to as Operable Units at Superfund sites) that represent individual areas of environmental concern. While a subsite can focus on any environmental hazard, typical examples include contaminated ground water, contaminated soil, leaking underground storage tanks, buried drums, abandoned

^{*} "Documents provided on the Office of Community Relations website define in non-technical language the more commonly used environmental terms and concepts appearing in Site Remediation & Waste Management publications, news releases, and other documents available to the general public, students, the media, and state employees. These documents do not have regulatory effect, and cannot be relied upon in lieu of officially promulgated NJDEP rules and definitions published in the New Jersey Register and the New Jersey Administrative Code."

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containers of chemical wastes, off-site potable wells or an Immediate Environmental Concern (IEC) condition. A subsite may be identified at the beginning of a site investigation or at any time during the course of the remedial process additional environmental problems are discovered.

Once a site or subsite has been identified, it undergoes one or more of the following steps to characterize the extent of the contamination and/or remediate the environmental or health hazards. The phase of the remedial process that is underway determines the current status of the site or subsite. The site or subsite is assigned a Completed status when all remedial work is finished and the environmental and health hazards are fully addressed.

A Remedial Investigation and Feasibility Study (RI/FS) is a study conducted at Superfund sites to determine the nature and extent of the contamination and evaluate cleanup alternatives. The environmental problems at a site or subsite are characterized during the Remedial Investigation. The effectiveness, implementability, timeliness, cost and community concerns associated with each cleanup alternative are considered during the Feasibility Study. A Remedial Investigation is also implemented at non- Superfund sites to determine the nature and extent of the contamination, but a Remedial Action Selection (RAS) is conducted instead of a Feasibility Study. All publicly funded actions require an RAS prior to selecting and implementing a cleanup plan. After selecting a preferred remedial alternative for a publicly funded Superfund or non-Superfund site based on how well it meets the stipulated evaluation criteria, NJDEP (or in the case of federal-lead Superfund sites, USEPA) will hold a public comment period on the proposed cleanup plan.

A Remedial Design is the development of engineering plans and specifications to implement the remedy selected in the Feasibility Study or Remedial Action Selection, such as sizing a ground water treatment plant or developing an accurate measurement of contaminated soil that must be removed for off site disposal. Further data collection and analysis may be required to finalize design specifications.

A Remedial Action (sometimes referred to as a Construction project) is the implementation of a selected remedy. A Remedial Action may be implemented immediately after a site is identified, such as a

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removal action at an Immediate Environmental Concern (IEC) site, as an interim remedial measure while a site is being investigated, or as a final cleanup measure after a formal Remedial Design has been completed. A Remedial Action may include, but is not limited to, the following activities:

- Installation of a ground water treatment system
- Installation of a soil treatment system (i.e., soil flushing or soil vapor extraction)
- Removal of contaminated soil or drums
- Installation of a landfill cap or slurry wall
- Removal of leaking underground tanks
- Installation of a permanent cover over contaminated soil
- Installation of a ventilation system in a building or other structure where hazardous vapors are present
- Installation of Point-of-Entry Treatment (POET) systems on private potable wells
- Demolition of buildings or other structures when needed to facilitate remediation of the site
- Fencing of a site to prevent access

In addition, extension of water lines to a ground water contamination area or installation of a treatment system on a contaminated municipal supply well by a municipality or local water purveyor with funds provided by NJDEP are also considered Remedial Actions.

NJDEP soil cleanup criteria have been established for many contaminants to guide unrestricted, limited use and restricted Remedial Actions for soil. This allows cleanup and reuse of some sites, such as former industrial complexes, at lower costs, while still protecting human health and the environment. A Deed Notice (formerly called a Declaration of Environmental Restriction) is imposed for sites that only comply with the restricted soil criteria (a limited restricted Remedial Action). It is also imposed when engineering controls at sites with soil contamination levels that exceed the restricted criteria adequately protect public health and the environment (a restricted Remedial Action). This notice ensures the disclosure of site conditions to future owners and the maintenance of required engineering controls.

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Certain exceptions for contaminated ground water can also be obtained depending on its use. A Classification Exception Area (CEA) is established at sites when ground water contaminant levels exceed state ground water quality criteria, but there is an expectation that over time such standards will be met.

The state funds 10% of the Remedial Action costs at Superfund sites, with USEPA providing the rest. NJDEP funds 100% of the Remedial Action costs at non-Superfund sites. When responsible parties for these sites are identified, NJDEP brings legal action to recover the expended funds.

Operation and Maintenance (O&M) are performed at sites where long-term cleanup actions are underway or environmental controls have been installed. O&M covers a wide range of activities, from overseeing the proper functioning of a ground water treatment system to cutting the grass on a landfill cap. O&M may also include the environmental monitoring conducted to evaluate the effectiveness of a remedial action. One example of this is the periodic sampling of ground water that is conducted after a leaking underground storage tank or other source of contamination has been excavated, or after a plume of contaminated ground water has been remedied through active treatment. At sites where restricted cleanups are conducted, O&M may continue indefinitely. The state funds 100% of O&M costs at Superfund and non-Superfund sites.

Long-Term Remedial Action (LTRA)

denotes O&M activities performed on large scale ground water extraction and treatment plants at Superfund sites. These treatment plants are projected to run for several years until ground water cleanup criteria are achieved. For the first 10 years, USEPA funds 90 percent of LTRA costs and the state provides the remaining 10 percent. After ten years the site is considered in O&M and the state funds 100 percent of these costs.

February 22, 2005

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