



THE CLEANUP PROCESS

Contaminated Sites Fact Sheet Series

The Alaska Department of Environmental Conservation's (DEC) Contaminated Sites Program oversees, or in some cases, conducts the cleanup of contaminated sites based on their potential risks to human health and the environment. When leaks or spills of petroleum or a hazardous substance occur, cleaning up soil and groundwater can be quite difficult, time-consuming and expensive, but foremost in the process is protecting the health and safety of people and the environment.

The following process describes the investigation and cleanup of contamination remaining after an initial spill response or once an underground release or discharge is discovered. The process can range from a large, formal cleanup lasting several years with extensive public involvement to a simple one taking a few months. It all depends on the source and extent of contamination and the threat to people and the environment.

This fact sheet briefly summarizes the cleanup process. For complete information, see:

- The "Site Cleanup Rules" in 18 Alaska's Administrative Code of regulations (AAC) 75.325-3.90 at <http://www.legis.state.ak.us/basis/aac.asp>.
- Related guidance documents at <https://dec.alaska.gov/spar/csp/guidance-forms>.
- If the contamination comes from a leaking regulated underground fuel tank, the process is slightly different: see 18 AAC 78 at <http://www.legis.state.ak.us/basis/aac.asp#18.78>

Cleanups conducted under federal authorities (Comprehensive Environmental Response, Compensation, and Liability Act, Resource Conservation and Recovery Act, or Toxic Substances Control Act) follow somewhat similar but more prescriptive processes, use other terminology, and have federal agency regulatory oversight in addition to state oversight.

Alaska Statute 46.03.822 outlines who is legally

responsible for cleaning up the contamination; however, typically the person who caused the contamination or who owns the land is typically the one legally responsible for cleaning it up. That person must arrange for a "qualified environmental professional" (typically a contractor or consultant) to conduct or manage the site characterization and cleanup activities.

Site Characterization

The first step is to prepare a Site Characterization Work Plan for DEC review and approval. This entails researching information about the site history and use, the types of petroleum or hazardous substances stored, used or disposed of on the property, and any information on known or suspected spills, releases or disposal of such materials.

A Conceptual Site Model is then developed as a first estimate where the contaminants were released, how they may move through the environment, and how people or animals may be exposed to them. This may be prepared as a separate document or included as part of the work plan. See the Guidance and Forms page at <https://dec.alaska.gov/spar/csp/guidance-forms/> for the Guidance on Developing Conceptual Site Models.

The work plan must describe in detail:

- who will conduct the work,
- where and how samples will be collected for field screening and laboratory analysis,
- which DEC-approved laboratory will analyze the samples, and
- which analytical methods will be used.

The objective is to determine what contaminants are present, at what concentrations, in which media (soil, water, sediments and/or air) at the site and whether cleanup is necessary.

Field Investigation

Guided by the work plan, the qualified environmental professional or qualified sampler collects samples from the various environmental media and gathers more information at the site. DEC oversees this work and may conduct site inspections during the fieldwork.

Cleanup Levels

An important part of the cleanup process is determining cleanup levels. **Cleanup levels** are the concentrations of a hazardous substance that may be left in soil or water without posing a threat to human health, safety or welfare, or to the environment. Different levels may be chosen depending on the contaminants present, the soil types, depth to groundwater and whether or not the hazardous substance could be taken in through breathing, skin contact, or eating/drinking contaminated materials. The amount of time and the frequency of exposure factor into choosing a cleanup level for a site.

The conservative default cleanup levels set in the Site Cleanup Rules apply unless less stringent alternative cleanup levels are proposed and determined to be protective based on site-specific soil and groundwater information, along with the current and planned future land use. Residential use of land means that residents could be exposed to a contaminant 24 hours a day, every day. People using land for commercial or recreational purposes spend less time there and experience less exposure to contaminants.

Risk Assessment

A Risk Assessment is sometimes conducted to gather detailed information about the site and how people could be exposed to contamination. Risk Assessments can be used to justify protective cleanup levels which can be more or less strict than default levels. An important part of a Risk Assessment is to gather information from residents and other people on how they use the land and its resources. DEC has a *Risk Assessment Procedures*

Manual that describes how these documents may be used in the site cleanup process. See the Guidance and Forms page for the *Risk Assessment Procedures Manual*.

Site Characterization Report

After the site characterization fieldwork is completed, the qualified environmental professional prepares a report that:

- describes the work,
- documents the observations and results,
- draws conclusions about the extent of contamination, and
- proposes cleanup levels for DEC to review and approve.

A formal Risk Assessment, if conducted, would also be included or submitted separately.

Complete removal all the contamination is not often possible, practical or affordable. Potential cleanup techniques are analyzed, and one or more should be recommended based on their potential effectiveness, practicality, and consideration of any public concerns or comments. DEC may approve the cleanup levels and general cleanup techniques in the Site Characterization Report or in a subsequent Site Cleanup Work Plan.

Site Cleanup Work Plan

Before site cleanup work begins, the responsible person submits a Site Cleanup Work Plan to DEC for approval. The plan describes:

- who will do the work,
- how the site will be cleaned up,
- the sampling and analyses that will be conducted to determine the adequacy and effectiveness of the cleanup,
- how all generated wastes will be treated or disposed of properly, and
- a schedule for conducting the work.

Again, DEC provides oversight and may conduct site inspections during the fieldwork.

Reports

- **Interim cleanup reports** may be necessary when cleanup activities extend beyond one field season.
- For sites with groundwater contamination, **longer term groundwater monitoring and reporting** is typically needed.
- **A Final Cleanup Report** is completed for DEC review and approval after all cleanup activities are complete.

Site Closure

Cleanup Complete

DEC issues a “Cleanup Complete” determination when contamination is cleaned up to meet the State’s strictest regulatory cleanup levels. These levels are considered safe for residential land use, where people living on the land could have the longest time of exposure. A site may be reopened later, however, if more contamination is discovered or cleanup levels change.

Cleanup Complete with Institutional Controls

A cleanup may be conducted using alternative cleanup levels that do not support residential land use. Site conditions may be such that cleanup to the strictest levels may not even be feasible. In these cases, DEC may approve the cleanup as protective as long as conditions or restrictions, or “institutional controls,” are put in place to limit future land use activities and exposure that could cause unacceptable risk to people or the environment. For example, people using land for commercial or recreational purposes spend less time there and have less exposure to contamination than they would to residential property.

In such cases, DEC issues a “Cleanup Complete with Institutional Controls” determination, which requires the responsible person or landowner to periodically report to DEC on the land use, compliance with the institutional controls, and any change in ownership.

Visit the Institutional Controls page at <https://dec.alaska.gov/spar/csp/institutional-control-info> for more information.

Cost Recovery

DEC is required by Alaska Statute to seek reimbursement of all oversight and response costs and/or damages from responsible or liable persons. These costs include all time spent on activities related to the incident, including site inspections, report reviews, correspondence, telephone calls, meetings, etc. DEC’s Cost Recovery Section tracks all expenditures and provides invoices and assistance to responsible persons.

Learn more

For follow-up questions, visit the Contaminated Sites Contact page at <https://dec.alaska.gov/spar/csp/contact>.