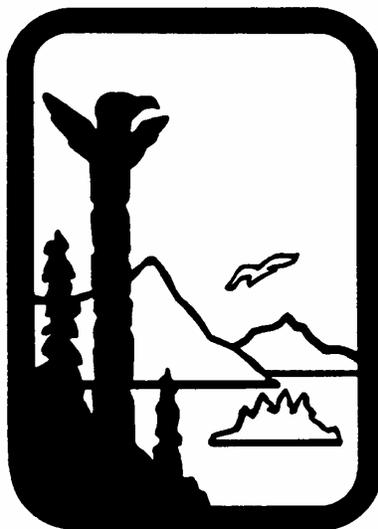


State of Alaska
**DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**



Contaminated Site Remediation Program Handbook

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Organization

This handbook is organized into six parts. Chapter 1 provides introductory and background material intended to provide a basis for understanding the program and program processes described in the following chapters. Chapters 2 through 6 correspond to each of the five phases of the cleanup process beginning with site discovery and tracking, and ending with site closure. Each chapter describes the tasks and objectives to be accomplished within that particular phase. Summary and explanatory materials, along with pertinent statutes and regulations, are included in the Appendices.

The handbook is organized around the more-or-less sequential series of events leading from site discovery to closure. At the same time, however, the handbook addresses the different functions of the department, such as record keeping and data management, cost recovery, enforcement, and public participation. This functional break down is not apparent in the manual's organizational scheme, but each of the functional areas is addressed in the specified procedures.

A note about the layout: This handbook is intended to provide an overview of the process - not to describe it in its entirety. Reference materials including information that is more detailed are identified with a symbol like this "d" with the corresponding document titles shown in the column to the left.

Copies of this document are available at the Alaska Department of Environmental Conservation, Contaminated Sites Remediation Program offices in Anchorage, Fairbanks, Juneau and Kenai.

Chapters

Introduction

Site Discovery and Tracking

Site Characterization

Cleanup Decision

Cleanup Action

Closure

Appendices

A Process Checklist

B Guidance Documents

Chapter 1. Introduction

1.1 Purpose of the Handbook

The purpose of this manual is to lay out the process used by the Alaska Department of Environmental Conservation (DEC) in addressing contaminated sites. It is intended solely as a guide for DEC employees in implementing statutes and regulations. It is not intended, and must not be construed, to create any rights, substantive or procedural, inuring to any party. Readers are advised to refer to the statutes and regulations for definitive requirements and procedures. DEC reserves the right to act at variance with the manual, as well as to revise it periodically.

While the manual is a resource and guide for DEC Contaminated Site Remediation Program (CSRP) staff, it may also be of value to property owners and facility operators, as well as consultants and contractors who routinely assist owners with contaminated sites. Broader understanding of typical processes and requirements should yield benefits in terms of the number of sites cleaned up and the efficiency with which sites can be addressed.

The manual is a resource and guide for DEC staff. Refer to statutes and regulations for definitive requirements and procedures.

1.2 Definition of a Contaminated Site

According to [18 AAC 75.990](#)¹ a site means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership. Many of these sites have resulted from spills or from disposal methods once considered acceptable practice, and prior to a wider appreciation for the problems or hazards they can cause. Contaminated sites often threaten public health, safety, welfare or the environment, and they can result in economic hardship for people and communities.

The Contaminated Sites Remediation Program within the Alaska Department of Environmental Conservation is charged with protecting the public health and environment from contaminated sites. The program seeks to ensure that contaminated sites are evaluated and cleaned up in order of the level of risk posed to public health, safety, welfare, and the environment. In most cases, this means overseeing companies or individuals that have taken responsibility for cleaning up contamination found on their property. In cases where a responsible party cannot be found or is unable to act, the department may take a direct role in cleaning up a site.

The Contaminated Sites Remediation Program seeks to have sites evaluated and cleaned up in order of the risk posed.

¹ [18 AAC 75.990](#). Definitions. A site is an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.

1.3 State Role in Contaminated Site Cleanup

For new releases of hazardous substances, Alaska Statute (AS) 46.04.020(a)¹ requires that a person causing or permitting a discharge of oil "immediately contain and cleanup" the discharge. Similarly, AS 46.09.020(a)² requires that a person causing a release of a hazardous substance other than oil make "reasonable efforts" to contain and cleanup the hazardous substance after learning of the release. AS 45.09.020(b)³ requires DEC to develop guidelines prescribing general procedures and methods to be used in containment and cleanup of a hazardous substance. These procedures and methods have been established at [18 AAC 75, Article 3. 18 AAC 75.990\(108\)](#) defines a responsible person as a person who is required under AS 46.04.020 or AS 46.09.020 to contain or perform a cleanup of a hazardous substance.⁴ In the event that DEC finds the responsible person's response to be inadequate, however, the statutes give the state specific authority to direct the responding party to cease operations and to assume control of the cleanup using state or state-contracted resources.⁵⁶ While the statutes explicitly provide for the state's assuming total control of the cleanup effort, DEC has other authorities that allow for a range of agency involvement between simple oversight and assuming total control of the cleanup effort. The department may, for example, direct that the responsible person take certain response actions. Regardless of who controls the cleanup or whose resources are used, responsible persons (RPs) are liable for the costs.

1.4 Liability For Damages and Costs

It is important to note that the statutes distinguish between who is responsible for containing and cleaning up releases, and who is responsible for the costs to the state in responding to a release as well as costs associated with damages. Alaska Statute 46.03.822(a)⁷ identifies persons that are strictly liable, jointly and severally, for environmental damages⁸ and costs incurred by the state or local governments in responding to a hazardous substance release. "Strict liability" means that the law assigns liability - liability does not have to be proven on the basis of negligence or other standards. "Joint and several liability" means that parties are liable both as individuals and as a group. Accordingly, the law assigns liability for state costs and damages to the following persons, individually and as a group:

- owners and persons having control over the substance at the time of release;
- owners and operators of facilities from which there is a release;
- any person who at the time of disposal owned or operated the facility at which substances were disposed of;
- any person who arranged for disposal;
- any person who accepts or accepted hazardous substances for transport to sites from which there is a release.

¹ AS 46.04.020(a)Removal of Oil Discharges

² AS 46.09.020(a)Containment and cleanup of a released hazardous substance

³ AS 46.09.020(b)

⁴ [18 AAC 75.990\(108\)](#)

⁵ AS 46.04.020(c)

⁶ AS 46.09.020(c)

⁷ AS 46.03.822(a)Strict Liability for the Release of Hazardous Substances

⁸ AS 46.03.780Liability for Restoration

In effect, the Alaska statutes say that the person causing a release is responsible for cleaning it up. In addition, the person causing the release along with other responsible parties (such as property owners) are liable for the costs to the state (as well as costs associated with damaged resources). In the event that the person causing a release does not clean it up (and no other responsible party opts to perform the cleanup), the state can perform the cleanup and seek to recover both its cleanup costs as well as compensation for any damage caused by the release from the liable parties. Note that the department is required by statute to seek reimbursement for its costs in containing or cleaning up discharges of oil and other hazardous substances.^{1 2}

1.5 Response Funding

Whether in an oversight or lead role, the state seeks to recover costs associated with its efforts. The state's preference (where feasible and prudent) is to allow the RP to fund and direct the assessment and cleanup, and to provide for direct reimbursement of CSRPs oversight costs. If necessary, DEC, with the assistance of the Department of Law, can also seek reimbursement of oversight costs through negotiated agreements or civil actions.

In those cases where direct RP funding is not forthcoming, the department has available to it the Oil and Hazardous Substance Release Response Fund (or Response Fund).³ This fund provides a source of monies to cover state response actions. The Response Fund is composed of two accounts; the oil and hazardous substance release prevention account ("prevention account") and the oil and hazardous substance release response account ("response account"). The response account is used for the following purposes;

1. to investigate and evaluate and if necessary to cleanup and monitor a release of oil or a hazardous substance if the release poses an imminent and substantial threat to the public health, or welfare, or to the environment, and
2. to provide matching funds for state participation in federal oil discharge cleanup activities, and investigation and cleanup activities covered under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The prevention account is used to;

1. to investigate and evaluate and if necessary to cleanup and monitor a release of oil or a hazardous substance that does not meet the determination that the release poses an imminent and substantial threat to public health, or welfare, or to the environment, and
2. pay costs associated with reviewing oil discharge prevention and contingency plans, and conducting training, response exercises, and inspections which are vital in preventing the release of oil or hazardous substances.⁴

Tapping the response fund, however, requires a determination that the site and intended expenditures qualify for Response Fund monies, and brings with it an obligation to carefully track and to seek to recover costs. Administrative procedures are specified for gaining access to the fund and tracking and recovering costs.⁵

¹ AS 46.04.010 Reimbursement for cleanup expenses

² AS 46.08.070(a) Reimbursement for containment and cleanup

³ AS 46.08 Oil and Hazardous Substance Releases

⁴ AS 46.08.040 Uses of the fund

⁵ [Cost Recovery Manual](#)

1.6 Contract Assistance

The CSRP maintains long-term contracts ("term contracts") with companies that provide assessment, oversight, public involvement support and cleanup services. The state is prepared to assess and to cleanup sites using a combination of available funding and pre-qualified contract services. Two contracts are maintained; one for assessment and one for cleanup.

Negotiating a scope of work, negotiating fees, and issuing a Notice to Proceed activates the contractors.¹ The term contracts include specified rates for certain routine services.

While the term contracts are a ready tool, CSRP staff may also seek other forms of contractual assistance subject to state procurement rules.

1.7 Site Cleanup Process Variations

While the basic steps are largely the same, the cleanup process will vary depending on how the state chooses to process the site, and whether the site is processed concurrently under a federal program. For example, the [Voluntary Cleanup Program](#) (VCP) is an accelerated alternative to the conventional state oversight approach for cleaning up less threatening contaminated sites. **Click here to view a brochure on the [VCP](#).** Under the VCP process, certain actions are abbreviated or skipped altogether, but the overall sequence of events is much the same as the conventional process. Sites that are slated for cleanup under the federal Comprehensive Environmental Response Compensation and Liability Act (CERCLA) program or Department of Defense (DOD) cleanup programs are subject to those specific program requirements. Nevertheless, the basic processes - CERCLA (as set out in the National Oil and Hazardous Substances Pollution Contingency Plan, or NCP²), DOD and state CSRP -- are much the same. They differ in terminology, and in the configuration and detail of individual actions, but not in overall approach. Most importantly though, site processing under a federal program does not diminish the authorities and roles of the State as prescribed in both federal and state law.

As a general rule, CERCLA/NCP and DOD processing of contaminated sites produces work products of sufficient scope and detail, and in a sequence that will satisfy state program requirements. CSRP staff coordinate workflow and requirements with the federal agencies to eliminate the potential for needless duplication due to variations between state and federal programs.

Site processing under federal programs does not diminish the statutorily-prescribed authority and role of the state.

As a general rule, federal programs produce work products . . . that will satisfy state program requirements.

¹ [Informational Guidelines for Using DEC Term Contractors](#)

² 40 CFR 300 National Contingency Plan

1.8 Scope of the Contaminated Sites Remediation Program

The scope of the CSRP includes all sites contaminated due to a release of oil or other hazardous substances with the following notable exceptions listed at [18 AAC 75.325 \(c\)](#)¹ that includes:

- active releases under management of DEC's Prevention and Emergency Response Program (PERP)²;
- sites contaminated due to spillage or leakage from "regulated underground storage tanks" as defined in statute³;
- sites where discharges of hazardous substances are immediately and completely cleaned up by the responsible party, leaving no residual contamination above background levels; and
- sites, including landfills, regulated under a permit or plan review program, if discharges are generally within limits posed by the permit or plan approval.

While the above releases and sites are not processed through the CSRP, staff may be called upon to provide technical assistance to other DEC programs or RPs. In addition the CSRP conducts oversight activities of sites being cleaned up under the federal CERCLA program⁴

1.9 Process Overview

[18 AAC 75.325-75.390](#), known as the "site cleanup rules" establish the administrative process and standards to determine the necessity for and degree of cleanup required to protect human health, safety, welfare or the environment. To ensure consistency in cleanups, a process has been developed that consists of five phases conducted more-or-less sequentially. A flow chart showing the progression of key decision and action points, as well as a link to the simplified flow chart that may be helpful for public education, are included on the following pages. While some details differ, the general process is the same whether a Responsible Party leads the cleanup effort with CSRP oversight, or whether the State conducts the cleanup using its resources. The process is also consistent with those established under the federal CERCLA/NCP and the federal Resource Conservation and Recovery Act (RCRA). Thus, sites can be processed simultaneously under federal and state programs.

Process Phases:

1. Site Discovery
2. Site Characterization
3. Cleanup Decision
4. Cleanup Action
5. Site Closure

¹ [18 AAC 75.325\(c\)](#)

² [Program Jurisdiction for Hazardous Substance Discharge Response](#)

³ AS 46.03.450(12) Water Pollution Control and Waste Disposal Authority

⁴ 40 CFR Part 300 National Oil and Hazardous Substance Pollution Contingency Plan; Subpart F, State Involvement in Hazardous Substance Response

Click on this link to view the [Plain Language Flow Chart](#) in PDF format.

The first phase - **Site Discovery** -- involves collecting and confirming primarily existing information about the site, invoking any indicated emergency or interim actions to stop a continuing release and to safeguard human health, safety, welfare and the environment. Site Discovery is ordinarily completed by Site Intake personnel. However, project managers may occasionally be required to take a site through Site Discovery and therefore should be familiar with the process. This phase establishes whether, and if so how, to proceed with further investigation and cleanup prioritization normally based on the [Alaska Hazard Ranking Model score](#)¹.

In the **Site Characterization** phase, information is collected to define the nature and extent of contamination, determine potential effects on human health, safety, welfare, and the natural environment and identify and evaluate alternatives for cleanup. The Site Characterization phase begins with scoping and development of a Conceptual Site Model and Site Characterization Work Plan, and concludes with a Site Characterization Report.

The **Cleanup Decision** phase includes approving cleanup levels based on regulations, establishing performance standards for the cleanup remedy based on cleanup objectives, and selection of a cleanup alternative following public input. Documentation of the cleanup decision is presented in a Record of Decision (ROD).

The **Cleanup** phase involves development of a cleanup plan and implementation of the cleanup action in order to achieve the approved cleanup levels. The cleanup action includes constructing and otherwise implementing short- and/or long-term cleanup measures, as well as determining success of the cleanup action by monitoring contaminant levels against cleanup levels over time. The results of this phase are documented in a Final Cleanup Report.

Once cleaned up to the state's satisfaction, sites enter the **Site Closure** phase. During this phase, CSRP staff decide whether any additional actions are needed, such as long-term monitoring or institutional controls. If additional actions are not needed, a site closure letter is issued, cost recovery is completed and legal proceedings are closed.

Chapter 2. Site Discovery

2.1 Overview

The Site Discovery and Tracking Phase begins with the agency learning of a contaminated site, and concludes with a decision whether, and if so how, to proceed with investigation and cleanup.

The Site Discovery phase involves identifying, collecting and confirming basic information about the site, invoking any indicated emergency actions to stop a continuing release and to safeguard human health, and establishing a basic process "track" for the site. Process tracks may include "no further action" or "on-hold" or "unassigned" (pending PM assignment) status for

¹ [Alaska Hazard Ranking Model](#)

Chapter 2 Site Discovery

low priority sites; RP-led processing under either the [Voluntary Cleanup Program](#) (VCP)¹ or conventional state program; State-led processing using state resources; or joint State-Federal processing. Medium and high, as well as low, priority projects may also be placed "on hold" status due to staffing constraints and workload management.

Additionally, this phase includes initiating record keeping (data management), public participation, enforcement (including [cost recovery](#)), and administrative functions. Record keeping actions include entering qualifying sites into the Contaminated Sites Database, and entering initial action codes. [Public participation](#) functions vary depending on the risk to the public and level of public interest. Initial actions may include such actions as preparing a [communications plan](#), or public notification.

[Enforcement functions](#) include evaluating whether notification requirements have been met, and evaluating the adequacy and appropriateness of any initial RP response actions. Enforcement functions may also include identifying and notifying responsible persons, and seeking administrative or judicial orders or agreements that prescribe how assessment and cleanup are to proceed.

Administrative functions may include taking steps to seek [funding approval](#) for department oversight activities, access the response account for emergency state lead cleanup action, and procurement measures to [secure term contractor](#) or other forms of contractual assistance.

2.2 Site Referral

Contaminated sites are not systematically revealed through a site discovery program. Contaminated sites generally come to CSRP attention through referrals to CSRP or through CSRP studies to find sources of regional groundwater contamination.

Contaminated sites are brought to CSRP's attention in a variety of ways. Some of the more common include:

- referral by other departmental programs, often Prevention and Emergency Response Program (PERP) staff;
- reports by other state and federal agencies;
- reports and complaints from the general public;
- reports from parties conducting site assessments associated with real estate transactions, public works projects, or underground storage tanks; and
- discharge notification reports, as required by statute²³ and regulation⁴, from site owners and operators; and
- regional studies.

Site referrals from confidential public sources are subject to special procedures.⁵

¹ [Handbook for Conducting Cleanups of Contaminated Sites under the Voluntary Cleanup Program](#)

² AS 46.03.755 Discharge reporting

³ AS 46.09.010 Report of hazardous substance release

⁴ [18 AAC 75.300](#) Discharge or release notification

⁵ [Informants Policy](#)

2.3 Initial Information Gathering

Upon referral or identification of a known or suspected contaminated site, CSRP staff obtain as much initial information about the site and contamination as possible. Because sites are referred to the program in a variety of ways, the extent of information provided with the referral also varies. Initial information sought includes site identifiers (such as facility names, legal descriptions and street addresses); location (township, range and section; latitude and longitude; proximity to landmarks); addresses and phone numbers for owners, operators, points of contact, and other involved parties; suspected or known contaminants; and general information about the affected environment and the degree of hazard posed. The [Release Notification Report form](#)¹ or the CSRP [Site Screening Form](#)² may be used as a guide by department staff or other qualified individuals collecting initial information.

CSRP staff may be able to obtain missing information over the phone by talking with facility operators or community members. Municipal or borough assessor's offices may be contacted for ownership information. CSRP staff may also conduct a site reconnaissance for information gathering purposes.

2.4 Site Verification

Based on available information, CSRP staff decides whether there is a reasonable basis for concluding that a release has occurred or is occurring, and that contamination exists at the site. A negative finding results in no further program action. An affirmative finding leads to further assessment.

In the specific case of sites evidenced by public complaint, guidance is available to assist staff in determining the validity of the complaint as well as in protecting the identity of the [informant](#).³

CSRP site screening guidance is available that prescribes a systematic approach to initial information gathering, preliminary priority setting, interim removal actions, and [recommended agency actions](#).⁴ CSRP staff may use the site screening report forms to help organize the information gathering effort at this early stage in the process. The remainder of the form can be completed later for purposes of assigning a preliminary site ranking (see Section 2.8).

2.5 Screening and Preliminary Site Ranking

CSRP staff next assign a preliminary rank to the site based on its relative severity to public health and the environment. That rank is used to compare the risk posed by the site with other sites for the purpose of assigning a priority for DEC action. The site intake process⁵ is a systematic approach to initial information gathering, preliminary priority setting, determining the need for interim removal actions, and deciding what action the agency should take. The process involves completing a form with entries for basic site information, information to help determine whether a CERCLA investigation is warranted, information to help determine whether an interim

¹ [Release Notification Report form](#)

² [CSRP Site Screening Report form](#)

³ [Informants Policy](#)

⁴ Site Screening Guidance

⁵ Site Screening Guidance

removal action is indicated, and information to aid in assigning a high, medium or low priority to the site. The Alaska Hazards Ranking Model (AHRM) ¹² is the official tool used by the agency to assign relative risk status to a site for the purpose of assigning priority for DEC action. The model assigns a rank (low, medium, or high priority) based on the characteristics of the released substance, and the human and environmental exposures.

In many cases, insufficient information is available early in the process to arrive at a definitive ranking score. Nevertheless, a preliminary ranking based on assumed conditions is required to set an initial track for processing the site. The preliminary ranking may be sufficient to rank the site as low or medium priority and to issue "on-hold" or unassigned status or to refer the site for [VCP](#)³ processing. Sites that rank as high priority are referred to the appropriate section manager for consideration for possible project manager assignment. After site characterization is completed, the project manager calculates a new rank, if necessary, and updates the database.

2.6 Emergency and Interim Removal Actions

At any time, CSRП staff have an option of taking, requesting, or requiring immediate actions where contamination or conditions are revealed and deemed to pose an imminent and substantial threat to public health, safety, welfare or the environment.⁴⁵

In the case of a continuing release, the CSRП project manager may refer the site to DEC's Prevention and Emergency Response Program (PERP) for action to stop the release.

In other cases where there is no known continuing release, but there is an exposure or migration threat, the CSRП project manager may require or take interim removal actions. [Interim removal actions](#)⁶ will generally be designed to remove contaminants, though additional cleanup may still be required. The CSRП project manager may specify the need for site stabilization measures, provision of alternative water supplies, public notifications and advisories, site access control measures, and monitoring and assessment of conditions.

Before implementing emergency or interim removal actions, the project manager determines whether the site could also fall under federal jurisdiction. For sites involving substantial amounts of hazardous substances other than petroleum products, CSRП staff check with their counterparts in EPA to see if federal processing under CERCLA/NCP or other federal procedures is likely. If so, information is shared with federal agencies, and any decision as to emergency or interim removal actions coordinated with federal counterparts.

Should an emergency or interim removal action be needed under the Contaminated Sites regulations, the CSRП project manager may request that the RP conduct the specified action, or after securing management approval work with an Assistant Attorney General to execute an

¹ [Guidance for Prioritization of Contaminated Site Work](#)

² [Alaska Hazards Ranking Model](#)

³ [Handbook for Conducting Cleanups of Contaminated Sites under the Voluntary Cleanup Program](#)

⁴ AS 46.03.020 Powers of the department

⁵ AS 46.03.820 Emergency powers

⁶ [18 AAC 75.330 Interim Removal Actions](#)

order that the RP conduct the action, or contact for a state-lead action. (Procedures for securing, funding and using state contractor assistance are discussed later.)

2.7 Release Notification

CSRP staff evaluate whether notification requirements set out in statute and in regulation have been met. Persons in charge of a facility or operation must notify the department of releases in the following time frames^{1,2,3}:

Substance	Amount	Receiving Environment	Timing
Hazardous substances other than oil	Any	any	as soon as person has knowledge of
Oil	Any	water	as soon as person has knowledge of
Oil	>55 gallons	land outside of secondary containment	as soon as person has knowledge of
Oil	10-55 gallons	land	within 48 hours of knowledge
Oil	>55 gallons	land within secondary containment	within 48 hours of knowledge
Oil	1-10 gallons	land	written monthly record

CSRP staff document answers to these questions:

- Was notice provided?
- Was it timely?
- Was it complete?

Evidence that the owner or operator intentionally withheld, or was late or otherwise negligent in notifying the department may be a basis for enforcement action. Referrals to the Environmental Crimes Unit District Attorney when indicated are made in accordance with delegated authorities⁴. In most cases, however, violations of reporting requirements are documented by the project manager for the project record where they may surface later as one aspect of a broader enforcement action.

2.8 Contaminated Sites Database Entry

For qualifying sites, a preliminary ranking using the AHRM is assigned and staff submits site information to the Database Manager for entry into the Contaminated Sites database. The site may be entered as Confirmed or Unconfirmed depending on the amount and quality of available information.

¹ AS 46.09.010 Reporting of Hazardous Substance Releases (for other than uncontaminated crude oil or refined oil products)

² AS 46.03.755 Discharge Reporting (for crude oil and refined oil products)

³ [18 AAC 75.300](#) Discharge Notification Required (for petroleum products and other hazardous substances)

⁴ [Personnel Authority Delegations](#)

If the site does not qualify for entry into the database, it may be referred to another department program (e.g. to be addressed as a permitting issue) or another agency. No further action is taken by CSRSP staff other than to note the disposition of the site in a site file and send any follow-up correspondence if indicated to interested parties. A record of the site is maintained by Site Intake.

2.9 Cost Recovery

By statute, DEC is compelled to seek to recover costs incurred by the state in cleaning up a contaminated site.¹² CSRSP staff document all agency costs associated with a site for cost recovery purposes. [Guidance](#) detailing cost recovery procedures is available and is essential reading for all project managers.³ Cost recovery includes two key elements:

- 1) a legal mechanism for recovering costs from the RP, and
- 2) a site-specific cost tracking system.

Legal Mechanisms

In some cases, the [legal mechanism](#) for cost recovery is the administrative or judicial order or agreement that governs the entire assessment and cleanup operation. In those cases, cost recovery is included by the Department of Law as one element of the Compliance Order by Consent, or Memorandum of Agreement, or Consent Decree, etc.

In most cases, cost recovery is not an element of a negotiated instrument or order, but is pursued as part of an administrative request. Some cases require judicial enforcement action. In these cases, the Cost Recovery Coordinator works with the project manager and the Department of Law to draft and send to the RP(s) a "demand letter" or "cost reimbursement request." Alternatively, or subsequently, the project manager and assigned Assistant Attorney General (AG) may opt to initiate civil action against the RP to recover costs, as well as to pursue damages. Project managers work with the assigned Assistant AG and CSRSP management to decide on the appropriate legal strategy to employ.

Cost Tracking

To recover costs, CSRSP and other agency staff must be able to provide cost records that are authentic, reliable, complete and accurate. The project manager requests a site-specific Ledger Code from the DEC Division of Administrative Services (DAS) initiating the cost tracking process. When DAS assigns a Ledger Code, it opens (and subsequently maintains) a site-specific financial file that includes cost amounts and proofs of payment. Project managers are responsible for keeping time sheets, site logs, and expense records; and coding all site-related costs to the site Ledger Code. Project managers maintain records in site-specific case files, which, along with the DAS financial files, form the basis for cost recovery actions.

¹ AS 46.04.010 Reimbursement for cleanup expenses.

² AS 46.08.070(a)

³ [Cost Recovery Guide](#)

2.10 Public Participation

The purpose of public participation in the contaminated site cleanup process is to ensure that nearby residents and other interested parties are informed of the facts concerning potential risks, and have an opportunity to influence cleanup decisions. Public participation is required at all sites.

The level of effort is based on:

The degree of risk to the public.

The level of public interest.

Regulatory requirements for public involvement which are dependent upon the proposed cleanup level or cleanup method.

The agency has standard procedures to guide CSRP staff in the arena of [public participation](#)¹.

At this early stage in the process, the project manager decides how the public is to be engaged in the site decision-making process and prepares a communications plan. A communications plan should outline the major milestones and timelines for the project and describe how important information regarding site characterization and cleanup decisions will be shared with the community.

Early public involvement can help identify [community concerns](#) about the site. Talking with community members can help the project manager learn about how the site was used in the past and what potential exposures to contamination may exist at the site.

While public participation efforts must begin at this point in the process, it may be appropriate to begin a community outreach effort even earlier if, for instance, contamination from a site or unknown source results in contamination of local groundwater sources of drinking water.

2.11 Responsible Person Search

Under Alaska law, a person who causes a release is responsible for cleanup, and the spiller and other RPs are strictly liable jointly and severally for damages and costs incurred by the state. The state's first recourse for cleanup is RP-funded and RP-directed action with agency oversight. In a substantial number of cases, however, the identity of all responsible parties is not clear and the department must conduct a [responsible person search](#).

Responsible persons are identified through review of department files, public documents and records, title searches, and interviews with persons with knowledge about the site history. DEC may also request the assistance of the [Alaska Department of Law for RP searches](#).² If Department of Law assistance is indicated, it is requested through the Program Manager in accordance with procedures specified for routing civil [referrals to the Department of Law](#).³

¹ [Public Involvement Guidance](#)

² [Cost Recovery Guide](#)

³ [Procedures for Routing Civil Referrals to the Department of Law](#)

2.12 Establishing the Lead

At (or before) the conclusion of the Site Discovery phase, CSRP staff establish who is to lead the assessment and cleanup effort, what process variation is to be used (e.g. VCP, conventional, concurrent state-federal), what resources are to be used, and how the effort - including costs to the state - are to be funded.

The state's preferred approach is always an RP-led and RP-funded effort that may be conducted in accordance with a negotiated agreement that includes provision for direct reimbursement of state oversight costs. Where an RP is known and willing to conduct and pay for the assessment and cleanup (including state costs), the CSRP project manager must in consultation with the Department of Law and CSRP management decide the legal tool to use to codify the agreement (if a formal agreement is necessary) - as discussed later in this section.

Where an RP is not initially known, or is not initially willing to conduct a cleanup, potential RPs are normally contacted in a series of four letters that starts by informing them of their liability and responsibilities, and ends with a letter signed by the DEC commissioner and notifying the RP that the state will conduct cleanup activities with [costs billed to the RP](#).¹ The letters are developed by CSRP staff with the assistance of the Department of Law, if necessary. At any point in this series of correspondence, the RP can opt to lead the cleanup effort, with a subsequent decision by CSRP management as to the possible use of administrative or judicial orders or agreements. Otherwise, the [state assumes the lead](#).²

RP-led cleanups of state, federal or privately-owned sites may proceed under the abbreviated [Voluntary Cleanup Program](#)³ (if they qualify) or under the conventional state cleanup program. Department of Defense or other federal facility-led cleanups are a special type of RP-led process where the conventional state program still applies, but is coordinated with the federal agencies and processes. RP-led cleanups may also be processed under the federal CERCLA program by the U.S. Environmental Protection Agency (EPA). Here again, the state process is applied through coordination with the EPA and CERCLA procedures. For [state-owned lands](#), DEC normally leads the cleanup.⁴

With the lead and process established, the CSRP project manager, in consultation with the Department of Law, establishes the legal arrangement governing the assessment and cleanup. The CSRP project manager, in consultation with CSRP management and the Department of Law, must decide whether to use [formal administrative or judicial orders](#) or agreements to codify the steps to be taken.⁵ As a rule, formal orders or agreements are used for complex sites, for sites where recovery of agency costs needs further assurance, and for reluctant or uncooperative RPs.

For sites to be led by a federal land or facility management agency, a Compliance Order, Memorandum of Agreement (MOA) or a Memorandum of Understanding (MOU) can be used to

¹ [Policy for Contacting Potentially Responsible Parties](#)

² [Informational Guidelines for Using DEC Term Contractors](#)

³ [Handbook for Conducting Cleanups of Contaminated Sites Under the Voluntary Cleanup Program](#)

⁴ [Memorandum of Agreement Between DEC and Other State Agencies](#)

⁵ [ADEC Enforcement Manual](#)

Chapter 3 Site Characterization

codify the terms of the agreement. CSRP project managers develop the MOA or MOU with the assistance of the Department of Law.

Whatever form the legal instrument governing the cleanup effort takes, that instrument, at a minimum must define the respective roles of the RP and the agency, establish the process to be followed including a schedule, establish how the effort is to be funded, and provide for reimbursement of state costs.

Chapter 3. Site Characterization

3.1 Overview

In the Site Characterization phase, information is collected to define the nature and extent of contamination as well as to clarify potential effects on the human and natural environment. The characterization process usually involves five basic steps:

- 1) collecting and reviewing available information on the site and contaminants;
- 2) conducting a field investigation program intended to identify contaminants, concentrations and extents; pathways and receptors
- 3) evaluating potential risks to human health, safety, welfare or the environment and calculating risk-based cleanup levels;
- 4) evaluating potential cleanup technologies and
- 5) preparing a report - the Site Characterization Report -- presenting the results of steps 1) through 4) along with conclusions.

The state Site Characterization phase is roughly equivalent to the Remedial Investigation or combined Remedial Investigation/Feasibility Study phases under CERCLA. Results of the site characterization are included in a Site Characterization Report.

The Site Characterization phase begins with planning and scoping of the field investigation and development of a Conceptual Site Model. Initial planning and scoping should be done by the DEC project manager, the RPs, and appropriate involved stakeholders such as other state and federal agencies and community representatives. Many of the planning steps begun here are refined as you progress through the site investigation phase.

Scoping activities typically begin with the collection of existing data from previous investigations such as the preliminary assessment and site inspection. On the basis of this information, site management planning is undertaken to:

- identify preliminary site boundaries;
- identify likely cleanup objectives and whether interim actions may be necessary or appropriate; and,
- develop a preliminary conceptual site model.

Once the overall management strategy is agreed upon, more detailed scoping activities include:

- identification of applicable regulations,

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- determining the type of decisions to be made and identifying the data and other information needed to support those decisions (data quality objectives).
- Preparing the applicable plans such as sampling and analysis plan (SAP) and quality assurance plan (QAP).

The [Conceptual Site Model](#) is the project manager's best estimate on the basis of (often limited) existing information as to what and where the contaminants are, how they are behaving under site conditions, and what threat they may pose. A Site Characterization Workplan is then designed to test, confirm and correct the conceptual model, as well as to ensure the collection of information that may be needed for a risk assessment or feasibility study. Depending on complexity, the Conceptual Site Model may be a separate document, or it may never exist apart from the Site Characterization Workplan.

The heart of the Site Characterization is the field investigation that includes sampling potentially contaminated media to identify the contaminants, to characterize concentrations, and to define extents of contamination.

[Public participation](#) may continue through this phase with the results of the Site Characterization conveyed to interested parties. The approval of the Site Characterization Workplan and Site Characterization Report are entered as actions into the Contaminated Site Database.

3.2 Site Characterization Workplan

The site characterization process begins with collecting (through records searches, interviews, site visits, etc.) available information about site use and surrounding land use, the site environment (soils, geology, hydrology, groundwater, etc.), and the contamination. In planning the site characterization, staff may find guidance intended for conducting site assessments associated with property transactions useful.¹ Staff should be familiar with and review related CERCLA and Underground Storage Tank program federal guidance materials as needed.^{2,3,4,5} Information gathered is used to guide the design of field investigations to collect current and specific information at a level of detail and certainty needed to design cleanup actions.

An outcome of the scoping process is the development of the Site Characterization Workplan. The workplan can be written by the RP or the DEC term contractor if the site is a state lead and must be developed in accordance with requirements specified in the [site cleanup rules](#).⁶

Except under the VCP process, a draft workplan is submitted for review by the CSRP project manager prior to conducting the work. A final workplan, incorporating CSRP comments, is then

¹ Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Practice E 1527-93) and Phase II Environmental Site Assessment Process (ASTM Designation E 1903-97)

² [Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies \(EPA\)](#)

³ Guidance for Conducting Preliminary Assessments under CERCLA (EPA) Guidance for Conducting Site Inspections under CERCLA (EPA)

⁴ Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (EPA)

⁵ [Expedited Site Assessment Tools for Underground Storage Tank Sites \(EPA\)](#)

⁶ [18 AAC 75.335\(b\)](#)

Chapter 3 Site Characterization

prepared and submitted for approval. The project manager updates the Contaminated Sites Database upon completion and approval of the Site Characterization Workplan.

As previously mentioned, development of the Site Characterization Workplan is influenced by the Conceptual Site Model. The Conceptual Site Model is the project manager's best estimate as to what and where the contaminants are, how they are behaving under site conditions, and what threat they may pose. The site characterization is then designed to test, confirm and correct the conceptual model. Depending on complexity, the [Conceptual Site Model](#) may be a separate document, or it may be a part of the Site Characterization Workplan.

The field investigation design is set out in the Site Characterization Workplan. It includes a quality assurance/quality control plan that specifies field and laboratory quality control procedures as well as a sampling and analysis plan that identifies where and how samples are to be collected, and the types of analyses to be conducted. While workplans vary in level of detail, each must address items specified in [regulation](#).¹ At a minimum, the workplan must be sufficient to allow evaluation of the potential threat of contamination at a site by determining the nature and extent of the contamination. The workplan will include some discussion of the following:

- a site description and map;
- a summary of existing contaminant information;
- numbers and locations of samples to be collected;
- sample collection, preservation and handling procedures;
- analyses to be performed;
- identity and qualifications of key participants;
- quality assurance/quality control procedures;
- site safety and health plan; and
- schedule of activities.

If a risk assessment is to be conducted under [Method 4](#),²³ a risk assessment scoping meeting should be held and a workplan which conforms with CSRP risk assessment procedures⁴ should be developed and included as part of the site characterization workplan. If an analysis of potential cleanup technologies is conducted, the workplan should include a description of the tasks associated with the development, screening and detailed analysis of [cleanup alternatives](#).⁵

3.3 Site Characterization

The site characterization itself involves the RP or state lead term contractor implementing the Site Characterization Workplan with whatever adjustments are indicated by field conditions and screening results. CSRP staff need to determine and provide an appropriate level of oversight depending on the complexity of the investigation, qualifications of key participants, and staff experience with participants. DEC oversight will vary from essentially no field oversight to near

¹ [18 AAC 75.335\(b\)](#)

² [18 AAC 75.340\(f\)](#)

³ [18 AAC 75.345\(b\)\(3\)](#)

⁴ [Risk Assessment Procedures Manual](#)

⁵ [Guidance on Decision Documentation under the Site Cleanup Rules](#)

full-time on-site inspection. **However, it is important that CSRP staff maintains good communication with RPs and contractors during this step so that adequate information is collected to evaluate risks, calculate cleanup levels and analyze potential cleanup technologies.**

The site cleanup rules prescribe minimum requirements for site characterizations.¹

3.4 Site Characterization Report

The Site Characterization Report presents and documents the methods and results of the site characterization process. Site Characterization Reports are prepared by the RP or term contractor and include the [following](#):²

- site background, including physical setting and historical information;
- a description of the revised conceptual site model;
- methods used in conducting the characterization including any field adjustments to the site characterization plan;
- sampling, analysis and results;
- conclusions concerning the nature and extent of contamination; and
- conclusions concerning the human and environmental hazards posed;
- calculation of cleanup levels using the [applicable method\(s\)](#);^{3,4}
- cleanup alternatives analysis and recommendation of cleanup technique(s) to be used at the site.

The site characterization report should propose cleanup levels for approval by DEC. Regulations provide for four methods of deriving [soil cleanup levels](#).⁵ [Groundwater cleanup](#) levels are based on drinking water standards.⁶ Additional information on the determination and approval of cleanup levels is found in Chapter 4.

If a risk assessment is conducted for the site, the risk assessment report must conform with [CSRP risk assessment procedures](#).

Cleanup alternatives should be analyzed and compared to each other according to the following five criteria:

Protectiveness - How well does each alternative protect human health, safety, welfare or the environment, both during and after the cleanup action?

Practicable - Are the technologies/techniques under consideration capable of being designed, constructed and implemented in a reliable and cost-effective manner? What alternatives are the most cost effective?

¹ [18 AAC 75.335\(b\)](#) and (c)

² [18 AAC 75.335\(c\)](#)

³ [18 AAC 75.340](#) Soil Cleanup Levels, General Requirements

⁴ [18 AAC 75.345](#) Groundwater and Surface Water Cleanup Levels

⁵ [18 AAC 75.340](#) Soil Cleanup Levels, General Requirements

⁶ [18 AAC 75.345](#) Groundwater and Surface Water Cleanup Levels

Short- and Long-term Effectiveness - Are there potential adverse effects to human health, safety and welfare or the environment during construction or implementation of the alternative? How fast does the alternative reach cleanup goals? How well does the alternative protect human health, safety, and welfare or the environment after completion of the cleanup? What, if any, risks will remain at the site?

Regulations - Will the alternative comply with all state and federal regulations?

Public Input - Have comments received from the community regarding each alternative been considered and addressed?

Except for VCP sites, the RP or term contractor submits a draft Site Characterization Report to the CSRP project manager for review and comment. A final report addressing the project manager's review comments is then submitted for approval. The database is updated to reflect completion of the site characterization report.

Chapter 4. Cleanup Decision

4.1 Overview

The purpose of the Cleanup Decision phase is to utilize the information gained from the site characterization to select the most appropriate cleanup action for the site. Cleanup objectives are established for the site which take into account;

- all contaminated media of concern,
- current and future land use of the site,
- the use of active treatment versus containment and exposure controls,
- the degree of cleanup and whether or not contamination will remain on site.

Cleanup levels are established for all contaminated media.¹²³ In this phase, a key decision is whether to proceed with levels specified in standard tables,⁴⁵ or to seek alternative cleanup levels based on site-specific calculations or a risk assessment. The regulations provide four methods for determining soil cleanup levels. In the case of RP-led actions, the RP derives and proposes cleanup levels for review and approval by CSRP staff. For state-led actions, CSRP staff or their contractors derive cleanup levels.

A Proposed Plan is prepared for the site which is a public document that describes the nature of the problem at the site, the cleanup levels that are being proposed and the proposed cleanup alternative for the site. Depending on the level of public involvement at the site, the Proposed

¹ [18 AAC 75.325](#) Site Cleanup Rules: Purpose, Applicability, and General Provisions

² [18 AAC 75.340](#) Soil Cleanup Levels; General Requirements

³ [18 AAC 75.345](#) Groundwater and Surface Water Cleanup Levels

⁴ [18 AAC 75.341](#) Soil Cleanup Levels; Tables

⁵ [18 AAC 75.345](#) Groundwater and Surface Water Cleanup Levels, Table C

Plan will undergo a 15 or 30-day public comment period. Public review and comment on the Proposed Plan is a key element of the public participation process.¹

Once the public comment period is completed, a Record of Decision (ROD) is prepared by CSRP that defines and explains the established cleanup levels and describes the selected cleanup alternative and the established performance standards for the cleanup. A Responsiveness Summary is included in the ROD which responds to public comments on the [Proposed Plan](#).² The final decision outlined in the ROD may be different than or an adjustment of the preferred remedy outlined in the Proposed Plan due to public input.

4.2 Determining Cleanup Levels

One of the most important objectives of the Cleanup Decision phase is approving cleanup levels – the concentration of a hazardous substance that may be present within a specified medium and under specified exposure conditions without posing a threat to human health, safety, or welfare, or to the environment. In the case of an RP-led cleanup, the RP proposes cleanup levels for approval by CSRP staff. In the case of state-led cleanups, CSRP staff establish the cleanup levels.

Regulations provide for four methods of establishing cleanup levels for soils³⁴: two methods (Methods One and Two) that derive cleanup levels from standard tables, and two methods (Methods Three and Four) for deriving site specific alternative cleanup levels.

Method one soil cleanup levels apply only to soil contaminated with petroleum products and are not considered risk-based. Cleanup levels are derived from the tables at [18 AAC 75.341\(a\)](#) and [\(b\)](#)⁵. Table A1 at [18 AAC 75.341\(a\)](#) applies to soils in nonarctic zones. Table A2 at [18 AAC 75.341\(b\)](#) applies only to Arctic Zone soils.

Method two soil cleanup levels are derived from the tables at [18 AAC 75.341\(c\)](#) and [\(d\)](#)⁶. Here, the applicable method two cleanup levels depend on which climactic zone the site is located, as well as potential exposure pathways - inhalation, ingestion and migration to groundwater for the site. [Table B1](#) at 18 AAC 75.341(c) applies to chemicals other than petroleum hydrocarbons. [Table B2](#) at 18 AAC 75.341(d) applies to petroleum hydrocarbons only.

[Method three](#) allows for modification of the default soil cleanup levels to account for site-specific soil and aquifer data. There are three methods for determining site-specific alternative cleanup levels for soil under method three:

¹ [Public Involvement Guidance](#)

² [Public Involvement Guidance](#)

³ [18 AAC 75.325](#) Site Cleanup Rules: Purpose, Applicability and General Provisions

⁴ [18 AAC 75.340](#) Soil Cleanup Levels; General Requirements

⁵ [18 AAC 75.341\(a\) Table A1](#). Method One-Petroleum Hydrocarbon Soil Cleanup Levels In Nonarctic Zones and [18 AAC 75.341\(b\) Table A2](#). Method One-Petroleum Hydrocarbon Soil Cleanup Levels In Arctic Zone

⁶ [18 AAC 75.341\(c\) Table B1](#). Method Two-Soil Cleanup Levels Table and 18 AAC 75.341(d) [Table B2](#). Method Two-Petroleum Hydrocarbon Soil Cleanup Levels

Chapter 4 Cleanup Decision

- The migration to groundwater or inhalation cleanup level can be modified using site-specific soil data which is plugged into [standard equations](#).¹
- The migration to groundwater or inhalation cleanup level may also be modified using site-specific data and a fate and transport model prepared in accordance with the department's [modeling guidelines](#).²
- The ingestion or inhalation cleanup level may be modified using acceptable commercial/industrial exposure parameters and standard equations.³

Method Four provides for establishing site-specific alternative cleanup levels based on the results of a risk assessment. A risk assessment is the scientific process of evaluating the toxic properties of contaminants and the conditions of human and ecological exposure to determine the likelihood that an exposed population or ecosystem will be adversely affected. Specific procedures for conducting a risk assessment are prescribed by regulation.⁴

The risk assessment evaluates existing and future potential risks to human health and the environment from hazardous substances that have been detected in environmental media at the site and that have migrated, or have the potential to migrate, off site. The results of the risk assessment provide a basis for determining whether, and to what extent, cleanup of impacted media is warranted.

In addition to the four methods for deriving cleanup levels, the department may approve a less stringent soil cleanup standard based on background concentrations or practical laboratory quantitation limits.⁵ The department may also modify an alternative cleanup standard under certain conditions to ensure that public health, safety and welfare, or the environment are adequately protected.

For sites with contaminated groundwater or surface water, cleanup levels must also be determined for these media.⁶ Contaminated groundwater that is, or may be, used for drinking water must meet the cleanup levels set out in [Table C](#) at [18 AAC 75.345\(b\)](#). On-property groundwater that is not a current source of drinking water or a reasonably expected potential future use of drinking water can meet a cleanup level of ten times the level set out in [Table C](#) at [18 AAC 75.345\(b\)](#).

Contaminated sediment or surface water must meet water quality standards under [18 AAC 70](#).

4.3 Effect of Cumulative Risk on Cleanup Levels

Humans and ecological receptors may be exposed to hazardous substances through more than one exposure pathway. For example, a person may be exposed to hazardous substances from a

¹ [Guidance on Cleanup Standards Equations and Input Parameters](#)

² [Guidance on Fate and Transport Modeling](#)

³ [Guidance on Cleanup Standards Equations and Input Parameters](#)

⁴ [Risk Assessment Procedures Manual](#)

⁵ [18 AAC 75.340\(h\)](#)

⁶ [18 AAC 75.345](#) Groundwater and Surface Water Cleanup Standards

site by drinking contaminated groundwater, eating contaminated fish, and breathing contaminated air. At sites where the same individuals or groups of individuals are or could be exposed through more than one pathway, the reasonable maximum exposure represents the total exposure through all the pathways. In addition, more than one hazardous substance may be present at a site.

At such sites, if using methods two, three or a risk assessment for determining soil or groundwater cleanup levels, regulation requires that the risk from hazardous substances does not exceed a cumulative carcinogenic risk of 1 in 100,000 across all pathways and a cumulative noncarcinogenic hazard index of 1.0 for each [exposure pathway](#).¹² Therefore, the soil cleanup levels in [Tables B1](#) and [B2](#) at [18 AAC 75.341\(c\)](#) and (d), and the groundwater cleanup levels in [Table C](#) at [18 AAC 75.345\(b\)](#) may need to be adjusted downward, so that the cumulative cancer risk remaining at the site when cleanup is completed is equal to or less than 1 in 100,000 (1×10^{-5}) and the cumulative noncarcinogenic hazard index remaining is equal to or is less than 1.0.

Guidance on adjusting cleanup levels downward to account for cumulative risk effects is available.³

4.4 Proposed Plan

Once the site characterization report is approved by DEC and cleanup alternatives have been evaluated a Proposed Plan should be prepared. The Proposed Plan provides information to the public about the results of the site characterization report and DEC's preferred cleanup alternative for the site. In many cases, the Proposed Plan will be the first and only document that the community will read in order to learn about the site.

In general, complex sites and some sites where alternative cleanup levels are being proposed will have a high level of public interest/involvement. At these sites, the public will be given 30 days to provide comment to DEC on the Proposed Plan. If the site is not complex and there is not a high level of public interest then a short Proposed Plan will be prepared and the public will be allowed 15 days to comment on the plan.

The Proposed Plan will be drafted by the DEC project manager with input from the [Community Involvement Specialist](#) and RP. Guidance is available on the preparation and use of proposed plans.⁴⁵

4.5 Record of Decision

DEC's approval of the cleanup levels and cleanup alternatives for a site takes the form of a [Record of Decision](#) (ROD). The ROD answers two key questions:

- (1) What level of cleanup is required to satisfy the regulations and protect public health, safety, or welfare, or the environment? and

¹ [18 AAC 75.325\(g\)](#)

² [18 AAC 75.325\(h\)](#)

³ [Guidance on Cleanup Standards Equations and Input Parameters](#), Appendix D

⁴ [Guidance on Public Involvement for Project Managers](#)

⁵ [Guidance on Decision Documentation Under the Site Cleanup Rules](#)

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- (2) How will this level of cleanup be achieved? The ROD includes the rationale used, as well as information to support the department's decision.

The ROD is completed at the conclusion of the public comment period on the Proposed Plan. It incorporates a responsiveness summary in which the department responds to significant public comments received on the Proposed Plan.

The ROD is prepared by the CSRP project manager based on information in the Site Characterization Report. The ROD should be signed by DEC and the RP. In many cases, the ROD is as simple as a one-page check sheet. In other, more complex cases, such as a large federal facility, the ROD may be a substantial document prepared by another agency such as the U.S. Army (and signed by DEC). Guidance for the development and content of [state RODs](#) is available.¹

Chapter 5. Cleanup

5.1 Overview

The Cleanup phase involves developing and implementing the [Cleanup Plan](#). The Cleanup Plan is the first part of the cleanup phase and presents the technical specifications for the cleanup action. Once the Cleanup Plan is approved by DEC the RP then implements the cleanup action.

For CSRP staff, this phase includes reviewing and approving the Cleanup Plan, collecting data and monitoring the progress of RP or term contractor field work. The phase concludes with preparation of the Final Cleanup Report and implementation of any long-term institutional controls or monitoring plans.

5.2 The Cleanup Plan

The Cleanup Plan describing the technical specifications of the cleanup action must be submitted to DEC prior to implementation of the cleanup action. According to regulations,² the cleanup plan must include:

- Provisions for the cleanup of soil and groundwater contaminated at levels exceeding the applicable cleanup levels.
- Detailed specifications for the proposed cleanup technique.
- Provisions for minimizing contaminant migration to previously unaffected areas.
- Provisions for the transport of contaminated soil as a covered load in compliance with regulations [18 AAC 60.015](#).
- Provisions for the disposal of contaminated soil and groundwater, including the location and method of disposal.

In addition, the following items should be included in the cleanup plan, as applicable:

- Identification of all approved cleanup levels in all environmental media of concern.

¹ [Guidance on Decision Documentation Under the Site Cleanup Rules](#)

² [18 AAC 75.360](#)

Chapter 5 Cleanup

- A sampling and analysis plan (SAP) for post cleanup confirmatory sampling.¹
- Location of the cleanup treatment units and the volume of environmental media to be treated.
- A quality assurance project plan (QAPP).
- A waste management plan.
- A list of all required permits.
- A monitoring plan.
- A health and safety plan
- A description of institutional controls to be employed at the site, along with a plan for enforcing those institutional controls.

Cleanup Plans vary greatly in level of detail. For simple cleanups, the Cleanup Plan may be a few pages containing abbreviated descriptions of the above items. For complex cleanups, a substantial document may be required to provide the level of detail required to fully explain more complex plans and technologies.

5.3 Oversight and Monitoring

The CSRP project manager monitors RP or term contractor progress against the objectives, schedules and reporting requirements set out in the Cleanup Plan. The level of oversight will depend on the complexity of the site and the cleanup action; the hazards posed by the site and degree of public interest; the expertise, resources and experience of the companies and persons involved; and DEC workload. To a large extent, determining the intensity of DEC oversight is at the discretion of the CSRP Project Managers.

Oversight activities include both reviewing documentation of the cleanup effort as it progresses, and maintaining a dialog with the RP and term contractor to address issues as they arise. During oversight, CSRP staff continually evaluates progress towards the objectives established in the ROD and Cleanup Plan, changes in the hazards posed by the site due to cleanup activity, and the overall adequacy of the effort.

In most cases, oversight of field efforts concludes with a final inspection conducted upon completion of fieldwork.

5.4 Final Cleanup Report

Site cleanup efforts, successes and failures are documented in the [Final Cleanup Report](#). In accordance with regulations, at a minimum, the report includes:²

- the date, time and location of discharge or release;
- the name of the site, facility or operation;
- the identity of the owner or operator
- the type and amount of each hazardous substance discharged or released;
- a description of any environmental damage;

¹ [18 AAC 75.355](#)

² [18 AAC 75.380](#). Final Reporting Requirements

Chapter 6 Site Closure

- a free product report that summarizes the presence and disposition of free product encountered;
- a description of cleanup activities;
- locations, concentrations and amounts of contaminated materials cleaned up and any left in place;
- field screening and laboratory analytical results; and
- a description of the ultimate fate of any contaminated materials removed from the site for cleanup.

The Final Cleanup Report is prepared by the RP or DEC term contractor for state lead sites and submitted to DEC for approval. The DEC project manager reviews the results of the cleanup effort as presented in the Final Cleanup Report against the cleanup levels and other objectives set out in the ROD and Cleanup Plan. At this point, the project manager must decide one of the following:

- that cleanup levels and objectives were met and the site can proceed to closure; or
- that cleanup levels and objectives were not met in their entirety and that additional cleanup measures are warranted. In this case, the project manager requests or orders that the RP conduct the additional work, or directs the term contractor to complete the additional work; or
- that cleanup objectives were not met in their entirety, but further cleanup is not warranted. This conclusion requires a finding by the department that the remaining contamination does not present a significant risk to human health or the environment. The department may specify institutional controls¹² or long-term monitoring requirements.

Chapter 6. Site Closure

6.1 Overview

Once cleaned up in accordance with regulations, sites enter the closure phase. During this phase, DEC determines whether any additional actions are needed, such as long-term monitoring and institutional controls. If long-term monitoring or institutional controls are required at a site, DEC will not close the site in the database. RPs however will be provided with documentation that no further active cleanup action will be required.³

If the cleanup action results in all cleanup levels being achieved and there is no need for long-term monitoring or institutional controls, DEC will close the site. Legal proceedings are closed. RPs are provided with documentation that the site has been cleaned up in accordance with state regulations and that no further work is necessary. In some cases, DEC may have to act to recover costs and, perhaps, to seek reimbursement for damages from RPs. DEC will also seek public input on a proposed decision to close out a site. The database will be updated to reflect the closure status.

¹ [18 AAC 75.375](#). Institutional Controls

² Institutional Controls Policy

³ [Guidance on Decision Documentation Under the Site Cleanup Rules](#)

6.2 No Further Remedial Action Planned and Site Closure Letters

If the final cleanup action includes the use of institutional controls and/or long-term ground water monitoring, DEC will issue approval of the final cleanup report to the RP in the form of a letter which states that no further remedial action is planned for the site (“[NFRAP letter](#)”).¹

A Site Closeout will be issued to the RP if the following site conditions are met:

- Cleanup levels established at the site for all contaminants of concern in all media of concern have been met.
- For soil, the risk from contaminants at the site do not exceed a cumulative carcinogenic risk level of 1 in 100,000 across all exposure pathways and a cumulative non-carcinogenic risk at a hazard index of 1.0 for each exposure pathway.
- For groundwater, contaminant concentrations do not exceed the values found in [Table C at 18 AAC 75.345](#).
- There is no need for additional cleanup actions at the site.
- There is no need for continued long-term groundwater monitoring at the site.
- There is no need for continued institutional controls at the site.

6.3 Conclude Legal Proceedings

For successful RP-led cleanups, closure includes actions to conclude legal orders or agreements - although obligations may be extended for long-term monitoring, for institutional controls, and for remaining contamination not dealt with as part of the process. In some cases, concluding legal proceedings means negotiating or litigating to recover costs or damages. The project manager works with the Department of Law to close outstanding [legal proceedings](#).

6.4 Cost Recovery

Early in the process, the project manager began to [track costs](#) and to compile site logs and other records documenting the state's costs. At closure, the state seeks to recover any outstanding costs that were not collected during the course of the cleanup. Guidance is available that describes cost recovery procedures.² The project manager provides information, including a cost recovery expenditure package, to the Cost Recovery Unit. Staff at the Department of Law will first attempt informal cost recovery. Failing that, formal cost recovery actions are taken by the Department of Law.

With reimbursement of all outstanding costs, the project manager initiates cost recovery project closure with the DEC Division of Administrative Services and the Department of Law. With final closure, project files are sent to the state archives according to the CSRP archive schedule.

6.5 Database Closure

The project manager updates the Contaminated Sites Database to reflect closure status.³

¹ [Guidance on Decision Documentation Under the Site Cleanup Rules](#)

² [Cost Recovery Guide](#)

³ Contaminated Sites Database Guidance Manual

Appendices

Appendix A. Process Checklist

Contaminated Site Process Checklist

Site Discovery

- Confirm site.
- Receive notice.
- Determine current ownership and other currently involved parties.
- Evaluate evidence - verify complaint.
- Determine if site meets inclusion criteria and, if so, enter site into data base.
- Control any immediate health and environmental threats.
- Issue public notice and advisories, if appropriate.
- Limit site access and impose any necessary immediate institutional controls.
- Conduct immediate removal and site stabilization actions, if appropriate.
- Coordinate with other DEC, state and federal programs.
- Determine site priority.
- Gather any additional information needed to rank site priority.
- Submit site info to database manager for database entry
- Assign a preliminary priority rank to the site using the AHRM.
- Assess whether the site has potential to qualify for assessment under CERCLA and, if so, notify EPA.
- Refer high priority sites to appropriate section manager
- Refer qualifying sites for VCP processing.
- Issue "No Further Action" if indicated.
- Issue "On Hold" status if indicated.
- Determine lead for assessment and cleanup.
- Determine current ownership and other currently involved parties.
- Conduct RP search if required.
- Notify RPs of liability and obligations -- select and send appropriate RP letter(s).
- Determine lead.
- Determine the need for establishing a formal legal framework (administrative or judicial order).
- Develop and execute as required.
- Establish contractual framework for state-led assessment and cleanup using term contractors

Site Characterization

- Define nature and extent of contamination
- Plan and scope the field investigation.
- Develop conceptual site model.
- Establish preliminary cleanup objectives.
- Prepare site characterization workplan in accordance with regulation.
- Conduct field investigation.
- Calculate cleanup levels
- Determine appropriate cleanup method
- If Method 4 is appropriate, conduct risk assessment.
- Calculate cleanup level based on site characteristics in accordance with regulation
- Evaluate appropriate cleanup technologies.

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- Develop and screen cleanup technologies, if appropriate.
- Evaluate cleanup technologies according to CSRP five criteria.
- Prepare site characterization report.
- Prepare site characterization report making sure to incorporate those items that are specified in regulation.
- Submit site characterization report for DEC review and approval.

Cleanup Decision

- Establish final cleanup objectives.
- Determine prescribed cleanup levels.
- Determine appropriate cleanup technologies that will meet final cleanup objectives.
- Prepare Proposed Plan and solicit public input.
- Prepare Proposed Plan outlining results of site characterization and DEC's preferred cleanup alternative.
- Conduct 15- or 30-day public comment period, as applicable.
- If necessary, conduct public meeting during comment period.
- Prepare ROD and Responsiveness Summary.
- Prepare ROD outlining DEC's selected cleanup alternative, cleanup levels and performance standards for achieving cleanup objectives.
- If comments have been received on Proposed Plan, prepare Responsiveness Summary. DEC and RP sign ROD.

Cleanup

- Develop Cleanup Plan
- RP or term contractor develops Cleanup Plan in accordance with regulation.
- CSRP staff review and approve Cleanup Plan
- Conduct Cleanup
- RP or term contractor conducts cleanup action with appropriate oversight by CSRP.
- CSRP conducts inspection upon completion of field work.
- RP or term contractor conducts appropriate monitoring activities until cleanup levels and objectives are achieved.
- Institutional controls are imposed, if applicable.
- Prepare Final Cleanup Report
- RP or term contractor prepares Final Cleanup Report in accordance with regulations.
- CSRP reviews and approves Final Cleanup Report.

Site Closure

- Issue No Further Remedial Action Planned ("NFRAP") or Site Closure Letter.
- If cleanup action results in the need for institutional controls and/or long-term monitoring, CSRP prepares and issues NFRAP letter to RP.
- If cleanup action results in all cleanup levels being achieved and there is no need for institutional controls and/or long-term monitoring, CSRP prepares and issues Site Closure Letter to RP.
- Conclude Legal Proceedings.
- For successful RP-led cleanups, complete and terminate any administrative or judicial proceedings.
- Complete cost recovery.

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- Complete cost recovery procedures to ensure reimbursement of outstanding State costs.
- Update CSRP database to reflect closure status.

Appendices

Appendix B. Guidance Documents

Title	Date	Section Cited
State Guidance		
For a complete list of guidance documents issued after the publication of this handbook, click on this link to the CSRP web based guidance page: http://www.state.ak.us/local/akpages/ENV.CONSERV/dspar/csites/ind_docs.htm		
Alaska Hazards Ranking Model , May 2, 1993	May 2, 1993	1.9, 2.8
Arctic Zone Cleanup Levels	Under Development	
Contaminated Sites Database Guidance Manual, Draft October 2000 . Multiple documents in support and explanation of the database are available to all CS staff via Outlook, path: Public folders/All public folders/SPAR Statewide/CSRP/Database	October 2000	
Contaminated Sites Training Guidance Manual, January 16, 1996	January 16, 1996	
Cost Recovery Guide , July 1997	July 1997	1.5, 2.9, 2.11, 6.4
Delegated Authorities , February, 2001	February 2001	
Enforcement Manual , April 1997	April 1997	2.12
Guidance for Community Involvement in Contaminated Sites Prioritization , March 30, 1994	March 30, 1994	
Guidance for Fate and Transport Modeling	July 6, 1998	4.2
Guidance for Investigation and Cleanup of Petroleum Contaminated Sites	Under Development	
Guidance for Prioritization of Contaminated Site Work	January 7, 1994	2.8
Guidance for Requesting Response Funds for Contaminated Site Remediation , January 7, 1994	January 7, 1994	
Guidance on Cleanup Levels, Equations, and Input Parameters	September 16, 1998	4.2, 4.3
Guidance on Decision Documentation Under the Site Cleanup Rules	Under Development	3.2, 4.4, 4.5, 6.1, 6.2
Guidance on Developing Soil Cleanup Levels Under Methods Two and Three	Under Development	3.4, 4.2
Guidance on Public Involvement for Project Managers	February 2001	
Guidance on the Selection of Natural Attenuation as a Cleanup Alternative for Restoration of Ground Water at Contaminated Sites	January 2000	
Handbook for Conducting Cleanups of Contaminated Sites Under the Voluntary Cleanup Program	March 2000	2.1, 2.8, 2.12
Informants Policy , February 21, 1997	February 21, 1997	2.2, 2.4

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Title	Date	Section Cited
Informational Guidelines for Using DEC Term Contractors	July 1, 1993	1.6, 2.12
Institutional Controls Policy	Under Development	5.4
Investigation-Derived Waste	Under Development	
Memorandum of Agreement Between the Alaska Department of Environmental Conservation and Other State Agencies re: Cleanup of State-owned Sites		2.12
Petroleum Hydrocarbon Cleanup Goals for Oversize Materials	August 1993	
Policy for Contacting Potential Responsible Parties	March 22, 1993	2.12
Policy Workteams , January 29, 1996	January 29, 1996	
Procedures for Developing Policy and Guidance Documents , September 19, 1995	September 19, 1995	
Procedures for Routing Civil Referrals to the Department of Law , October 26, 1995	October 26, 1995	2.11
Program Jurisdiction for Hazardous Substance Discharge Response , March 4, 1993	March 4, 1993	1.8
Release Notification Report Form		2.3
Risk Assessment Procedures Manual , June 8, 2000	June 8, 2000	
Selecting a Cleanup Consultant (UST Program Guidance)	September 15, 1993	
Site Screening Form		2.3
Soil Segregation and “How Clean is Clean” (UST Program Guidance) , September 15, 1993	September 15, 1993	
Spill Response Authorities, February 7, 1994	February 7, 1994	
Technical Guidance Document on Determination of Background Concentrations	September 17, 1998	
Underground Storage Tank Procedures Manual-Guidance for Remediation of Petroleum-Contaminated Soil and Water and Standard Sampling Procedures		
Federal Guidance:		
Community Relations in Superfund: A Handbook (EPA)	January 1992	
Contaminants and Remedial Options at Selected Metal-Contaminated Sites (EPA)	July 1995	
Expedited Site Assessment Tools for Underground Storage Tanks: A Guide for Regulators (EPA)	April 1997	3.2
Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (EPA)	October 1988	3.2
Guidance for Conducting Treatability Studies under CERCLA (EPA)	December 1989	
Guidance for Performing Preliminary Assessments under CERCLA (EPA)	September 1991	3.2
Guidance for Performing Site Inspections under CERCLA (EPA)	September 1992	3.2

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Title	Date	Section Cited
Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies (EPA)	July 1991	3.2
How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites: A Guide for Corrective Action Plan Reviewers (EPA)	May 1995	
Land Use in the CERCLA Remedy Selection Process (EPA)	May 1995	
Remediation Technologies Screening Matrix and Reference Guide, Version 3 (Federal Remediation Technology Roundtable)	October 1997	
Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and Underground Storage Tank Sites (EPA)	April 21, 1999	
Other Guidance:		
Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process (ASTM Practice E 1527-93)	June 1994	3.2

Electronic Resources

Federal Guidance	Internet Address
Community Relations in Superfund: A Handbook (EPA Guidance number EPA-540-R-92-009)	This guidance is being revised and is currently not downloadable. It can be ordered online at cost from NTIS at http://www.ntis.gov/search.htm
Contaminants and Remedial Options at Selected Metal-Contaminated Sites (EPA Guidance number EPA-540-R-95-512)	http://www.epa.gov/ncepihom/nepishom/srch.htm *Please note that this address takes you to the search engine of EPA's publications internet site. You must then click on the "simple search" bar and enter the title of the EPA guidance to view the document.
Expedited Site Assessment Tools for Underground Storage Tanks: A Guide for Regulators (EPA Guidance number EPA-510-B-97-001)	http://www.epa.gov/swerust1/pubs/index.htm *Scroll down to the title of the guidance document and click.
Guidance for Conducting Remedial Investigations and Feasibility Studies under	http://www.epa.gov/ncepihom/nepishom/srch.htm *Please note that this address takes you to the search engine of

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Federal Guidance	Internet Address
CERCLA (EPA Guidance number EPA-540-G-89-004)	EPA's publications internet site. You must then click on the "simple search" bar and enter the title of the EPA guidance to view the document.
Guide for Conducting Treatability Studies under CERCLA (EPA Guidance number EPA-540-R-92-071A)	http://www.epa.gov/ncepihom/nepishom/srch.htm *Please note that this address takes you to the search engine of EPA's publications internet site. You must then click on the "simple search" bar and enter the title of the EPA guidance to view the document.
Guidance for Performing Preliminary Assessments under CERCLA (EPA Guidance number EPA 9345.0-01A or publication PB92-963303)	This document is currently not available free of charge. It can be ordered online at cost from NTIS at http://www.ntis.gov/search.htm
Guidance for Performing Site Inspections under CERCLA (EPA Guidance number EPA-540-R-92-021)	This document is currently not available free of charge. It can be ordered online at cost from NTIS at http://www.ntis.gov/search.htm
Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies, Volumes 1 & 2 (EPA Guidance number EPA-540-G-910-10a and EPA-540-G-910-10b)	http://es.epa.gov/oeca/osre/910701-1.html http://es.epa.gov/oeca/osre/910701-2.html
How to Evaluate Alternative Cleanup Technologies for Underground Storage Tanks: A Guide for Corrective Action Plan Reviewers (EPA Guidance number EPA-510-B-94-003)	http://www.epa.gov/swerust1/pubs/index.htm *Scroll down to the title of the guidance document and click.
Land Use in the CERCLA Remedy Selection Process (EPA OSWER Directive 9355.7-04)	http://www.epa.gov/brownfields/ascii/landuse.txt
Remediation Technologies Screening Matrix and Reference Guide, Version 3 (Federal Remediation Technology	http://www.frtr.gov/matrix2/

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Federal Guidance	Internet Address
Roundtable)	
Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and Underground Storage Tank Sites (EPA OSWER Directive 9200.4-17P)	http://www.epa.gov/swerust1/directiv/d9200417.pdf

Helpful hints for finding documents on EPA's web site

EPA's web site is extremely convoluted and confusing when trying to search for and download guidance documents. Several different offices each with its own home page produce relevant documents that are downloadable. In addition, EPA and its contractors maintain several electronic databases that allow downloading or ordering hard copies of guidance and policy documents. Below are a few hints for finding EPA documents:

1. If you know the EPA office that produced the document, a good place to start is at that offices' home page. For instance: Superfund, RCRA and UST enforcement guidance and policy documents (e.g. oversight of potentially responsible parties) are generally produced by the Office of Site Remediation Enforcement (OSRE) which is part of the Office of Enforcement and Compliance Assurance (OECA). Once you're on the EPA home page (<http://www.epa.gov>), you can scroll to the bottom for region links. You can also click on the button "programs" on the sidebar which will take you to a page with a subsequent link, "offices" which will take you to a page with a link to OECA, Superfund and others.
2. EPA developed and supports a cleanup information electronic database and bulletin board entitled "clu-in." This database contains extensive downloadable information and guidance about clean-up technologies both current and experimental. The address for Clu-in is <http://www.clu-in.org>
3. Many EPA publications can be searched for and then viewed and downloaded one page at a time from the National Environmental Publications Internet Site (NEPIS) at <http://www.epa.gov/ncepihom/nepishom/srch.htm>. When searching for documents on this site, you are most likely to find what you're looking for when you use the "simple search" option and then type in the name of the document.

NEPIS is maintained by the National Service Center for Environmental Publications (NSCEP). NSCEP is EPA's central repository and distribution center for EPA publications. This site allows you to search the EPA National Publications Catalog and can be accessed at <http://www.epa.gov/ncepihom/catalog.html>. You can also order free hard copies of some of EPA publications from this site. However, this is not the site for downloading publications and oftentimes the site will instruct you to order publications (at a cost) from the National Technical Information Service (NTIS).