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SECTION 14

REMOVAL ACTIONS INTERIM FINAL – JUNE 21, 2009

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14.0 REMOVAL ACTIONS

If a hazardous substance release substantially endangers public health or the environment, an appropriate response action is required. The Hawai'i State Contingency Plan (SCP) [Hawai'i Administrative Rules (HAR), Title 11, Chapter 451 ([HAR, 1995](#))] defines two response action processes: removal and remediation. Due to the urgency of threats posed and the need for prompt action, emergency responses are typically conducted under the removal action process, which is also used for most responses to historic releases. In general, the removal action process can be used on a variety of releases ranging from simple to complex non-emergency cleanups.

Removal actions follow a limited process and typically may be conducted more quickly and simply than remedial actions. In addition, for site assessments and removal actions found eligible to par-

anticipate, the voluntary Fast Track Cleanup Program can further streamline both assessment and removal actions by reducing the number of submittals to the State of Hawai'i Department of Health (HDOH) Hazard Evaluation and Emergency Response Office (HEER Office) (see [Section 15](#)).

Removal actions may include a range of activities including, but not limited to, the following:

- Monitoring, assessing, and evaluating a release or threat of a release
- Excavation and disposal of contaminated material
- Limiting access to the site with physical barriers such as fencing, walls, or barricades
- Evacuation of affected populations

As noted in the Hawai'i SCP [HAR 11-451-8(c) ([HAR, 1995](#))], all removal and remedial response actions should consider a hierarchy of response action alternatives in this descending order:

- Reuse or recycling
- Destruction or detoxification
- Separation, concentration, or volume reduction
- Immobilization of hazardous substances
- On-site or off-site disposal, isolation, or containment
- Institutional controls or long term monitoring

This hierarchy of response action alternatives should serve as a starting point when considering and selecting removal action cleanup alternatives (see [Subsection 14.2.3](#)).

The core decision-making process used in conducting removal actions is the same as used for remedial actions. However, for remedial actions key decisions are subject to a more intense level of review and scrutiny (see [Section 2, Figure 2-2](#) for differences in required documentation). In both cases, decision-making should be conducted in a structured manner, following the same general hierarchy of response action alternatives as noted above. In the case of an emergency response removal action, where an on-scene coordinator may be making on-the-spot decisions based primarily on field observations, the decision-making process used will correspond in general terms to that used in non-emergency release responses.

Wherever a release constitutes a threat or potential threat to human health or the environment, the HEER Office will seek to identify a responsible party and request their cooperation in conducting and paying for site assessment and/or response action, as appropriate under Hawai'i Environmental Response Law [Hawai'i Revised Statutes ([HRS 128D](#))]. If necessary, the HEER Office may enter into consent agreements or issue orders to require identified responsible parties to conduct any necessary response actions.

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14.1 REMOVAL ACTIONS FOR EMERGENCY RESPONSE

Emergency responses are handled differently than responses for non-emergency environmental cleanups (see [Subsection 2.3](#)), and may have additional release notification requirements.

Emergency responses are typically conducted as removal actions due to the immediacy of the threats, as well as limited planning and implementation timelines for emergency responses. Emergency response removal actions are conducted when there is a release or threat of release of a hazardous substance that may pose an imminent and substantial danger to human health and the environment. In general, these include recent spills or releases of hazardous substances, or the discovery of abandoned containers of suspected hazardous substances that may have leaked or have the potential to leak into the environment.

During emergency response removal actions, the completion of a detailed site assessment is rarely feasible. Regardless of the nature of the emergency, it is critical to fully document the following information:

- Source and nature of the release or threat of release
- Magnitude of the threat to public health or welfare, the environment, or natural resources
- Whether a removal action is appropriate
- Whether another party is undertaking the proper response action

This assessment data is used to make decisions to protect human health and the environment, and to initiate release response removal actions, if appropriate. The removal actions may be carried out as soon as they may be safely conducted. In an emergency response removal action, the cleanup objectives should be clearly identified as soon as possible, and should be documented in the written incident action plan (or equivalent document) during the emergency response action.

In some cases, an emergency response removal action may address all immediate health threats, but leave a non-emergency environmental cleanup situation at the site (e.g. a surface spill is removed, but subsurface soil may be potentially contaminated). These cases are typically referred from the Emergency Preparedness & Response (EP&R) Section of the HEER Office to the Site Discovery, Assessment, and Remediation (SDAR) Section for additional evaluation and consideration for non-emergency cleanup action (either removal or remedial action).

A Removal Action Report (RAR) may be required to document an emergency response cleanup. An important consideration for the RAR would be the need for or the execution of confirmation sampling to (1) demonstrate that no immediate danger to human health or the environment remains, and (2) evaluate whether any additional non-emergency cleanup assessment or response may be appropriate (see [Subsection 14.2.4](#)).

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14.2 REMOVAL ACTIONS FOR NON-EMERGENCY ENVIRONMENTAL CLEANUPS

Non-emergency environmental cleanups generally occur over a longer time frame, which allows for detailed site assessments to assist in identifying the specific environmental hazards, defining the extent of contamination, and determining if response actions are necessary to remediate the

hazardous substances. Environmental cleanups conducted for non-emergency hazardous substance releases are often responding to historic or suspect past releases rather than to observable recent evidence, such as leaking containers, spilled materials, or other obvious sources of contamination at the site.

Historic releases generally do not present immediate threats needing an emergency response, as the contamination present does not pose a significant short-term hazard. However, they may commonly represent long-term hazards to human health or the environment. The HEER Office SDAR staff oversees these types of releases and recommends removal actions or remedial actions based on the following factors:

- Immediacy of threat
- Planning and implementation time
- Risks to public health and the environment
- Costs
- Community interest
- Site complexity
- Availability of other response options

Although removal actions may be appropriate under a variety of situations and each response action determination is site-specific, removal actions are generally effective where representative sampling and assessment have documented that significant soil contamination is limited in extent and within the reach of common excavation equipment.

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14.2.1 DATA REVIEW AND DATA COLLECTION

Following the decision to conduct a non-emergency removal action, any existing data is reviewed and additional data is collected, as needed, to determine specific cleanup actions.

If a Site Assessment or an Environmental Hazard Evaluation (EHE) was performed for a particular site, they are reviewed to assess if sufficient information is available to evaluate and select among removal action alternatives. Missing data critical to the evaluation of removal action alternatives is identified and collected, as appropriate, preferably prior to the evaluation of alternatives. For example, if one of the removal alternatives is excavation and disposal, and representative toxicity characteristic leaching procedure (TCLP) testing of the contaminated soil has not been completed to determine whether the proposed disposal facility would accept the soil, this is an important data gap to fill to increase the reliability of the removal alternatives analysis.

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14.2.2 ESTABLISHING CLEANUP OBJECTIVES

The HEER Office recommends that site owners and site consultants consult with the HEER Office early in the process for planned removal actions in order to ensure that the removal action's cleanup objectives are clearly stated and acceptable. Failure to mutually agree to cleanup objectives early in the process could lead to serious and costly disagreements over the adequacy of the response.

Cleanup objectives should be clearly stated as part of a non-emergency removal action work plan. For example, cleanup objectives for a contaminated pond may include:

- Achieving protective soil and surface water quality (e.g. representative samples with levels below Tier 1 EALs [[HDOH, 2016](#)] for soil and surface waters)
- Reducing possible future impacts to groundwater
- Restoring the pond to stable conditions where vegetation and animals may be re-established

Cleanup objectives for a removal action will vary depending on the plan for the overall response to a release. In many cases the objective of the removal action is to permanently address all threats posed by the release, so the goals/objectives of the work plan would be written accordingly. However, in some cases a removal action is planned only as an interim action as part of a larger or longer-term response action and the cleanup objectives for these removal actions may have a narrower scope. For example, if a release poses imminent threats, such as acutely toxic exposure hazards posed by uncontrolled hazardous substances in surface soil, then a removal action of surface soils may be conducted with the objectives of eliminating these imminent, short-term threats. If longer-term threats posed by residual contamination of subsurface soils and non-drinking groundwater also exist, these less imminent hazards may be left for a non-emergency removal or remedial response action at a later date.

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14.2.3 SELECTING A CLEANUP METHOD

Cleanup alternatives that include the on-site management of hazardous substances (above applicable HDOH Tier 1 EALs) are the least preferred of all response action alternatives. When persistent or high risk contaminants are involved, uncertainty over long-term effectiveness and possible lower levels of community acceptance may result in the selection of a remedial action versus a removal action. However, in some cases involving non-persistent contaminants and relatively low risk levels, permanent on-site management remedies may be implemented using the removal action process.

The cleanup method used for a particular removal action will depend on a number of factors, including the type and amount of hazardous substance released, physical setting in which the release occurs, and the type, number, and proximity of potentially affected human and ecological receptors. As noted earlier, multiple removal action alternatives are available; options to recover and reuse or detoxify or immobilize contaminants are generally preferred over other options. However, the simplest and most common form of removal action is excavation of contaminated soil and disposal in an approved landfill. The technological and cost feasibility of this option is typically more

favorable for soil contamination at a site that is limited in extent and shallow enough to be accessible by excavation equipment than with a site with widespread soil contamination or with contamination at depths greater than approximately 15 feet below ground surface. A detailed discussion of common cleanup technologies is presented in [Section 17](#).

A number of removal action alternatives should be considered in selecting a final cleanup method (typically a “no action” alternative is compared to several other removal action alternatives) and the rationale for proposing the final cleanup method for the site should be clearly documented. A comparison table depicting the various alternatives considered, practicality of implementation at the site, and costs associated with each option will assist in clearly documenting the removal action alternatives. The degree of thoroughness and detail required in the removal alternatives analysis, as well as the final cleanup method, depend on factors such as the urgency of the response and complexity of the release.

“Presumptive remedies” are available for several typical release scenarios (e.g., typical contaminants or disposal practices, or based on affects on environmental media). The United States Environmental Protection Agency (USEPA) provides guidance on [presumptive remedies](#), which are preferred by the HEER Office where appropriate. When reviewing presumptive remedy guidance documents, confirm that cited methods are still considered to be best/good practices. Changes in cleanup technologies, scientific understanding, regulatory requirements, or public acceptance may affect whether a presumptive remedy is considered to be the preferred choice for a particular site.

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14.2.4 REMOVAL ACTION REPORT

Removal actions require significantly less documentation than remedial actions (see [Section 2, Figure 2-2](#)). Non-emergency removal actions are documented by a Removal Action Report (RAR). The exact content and level of detail needed in a RAR varies depending on the nature and extent of the release, and the removal action alternative selected for the cleanup.

Documenting the Removal Action involves two steps:

1. The Removal Action Work Plan – Describe the site, relevant background information and the proposed cleanup action and alternatives considered.
2. The Removal Action Report (or sometimes referred to as the Removal Action Completion Report) – Includes information from the Removal Action Work Plan, plus a description of changes made in implementing the Work Plan, the resources expended on the cleanup, and the results of confirmation testing.

The Removal Action Work Plan should be prepared and submitted to the HEER Office prior to conducting the removal action (see flexibility for work plan submittals and reviews provided under the Fast Track Cleanup Program, [Section 15](#)). Key elements for the Removal Action Work Plan include:

- Introduction and Purpose

- Background, including site description, land use, applicable Tier 1 EALs
- Description of release/threat of release and environmental hazards
- Situation preceding decision to conduct removal
- Removal action alternatives considered
- Description/rationale for the planned removal action
- Removal action tasks, scope of work
- Description of sampling and analysis methods for confirmation testing of removal action
- List of equipment and supplies
- Planned schedule
- References

A more detailed recommended content guideline for the Removal Action Work Plan is provided in [Section 18](#).

The RAR (or Removal Action Completion Report) is completed and submitted to the HEER Office after the planned removal action has been conducted. The RAR is typically a supplement to the Removal Action Work Plan, providing the following additional information:

- A description of the removal action as conducted (vs. planned)
- The resources expended to conduct the removal action
- The results of confirmation testing, including data quality evaluation
- A description of any hazardous substances and environmental hazards remaining on-site

After the cleanup has been completed, the environmental hazard evaluation (see [Section 13](#)) conducted before the removal action should be updated. The initial environmental hazard evaluation documented the threat posed prior to cleanup activities; the updated environmental hazard assessment documents the threats (if any) posed after cleanup activities.

A more detailed recommended content guideline for the RAR is provided in [Section 18](#).

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14.2.5 PUBLIC PARTICIPATION

Public participation serves two purposes: (1) to inform the public about the hazardous substance release and the proposed or selected response action; and (2) to obtain information from the public about the release, or about conditions in the community that may affect the release or the proposed response action.

Small removal actions, removal actions for contaminants that are judged very low risk, and/or removal actions in certain locations may not warrant significant public participation. However, large,

extensive, highly visible, or highly toxic releases will warrant public participation, either because the release or the response has attracted public attention, or because the release or the response has affected or will significantly affect the public in some way. The HEER Office makes the determination regarding public participation requirements for each proposed removal action.

The public is required to be provided notice of a Removal Action Work Plan, and an opportunity for review and comment, if:

1. The HEER Office is conducting the removal action (e.g. when a responsible party cannot be identified) and expenditures on the site are reasonably expected to exceed, or have exceeded, \$25,000
2. The HEER Office determines that significant concern has been expressed or is likely to be expressed by affected or potentially affected public or private interests, including local communities, as a result of the implementation of removal action activities
3. The HEER Office determines that public participation would be in the public interest

The minimum requirements of the public notice procedure, if selected for removal actions, consist of the following steps:

- A notice of the availability of the administrative record for the removal action is published in a newspaper of general circulation in the county affected by the proposed action, and if appropriate, in a newspaper of general circulation in the state, no later than 60 days after initiation of on-site removal activity. An example Public Notice for a Removal Action is provided in [Section 18](#).
- A public comment period of at least 30 calendar days after relevant site documents are made available for review, to provide the public with a reasonable opportunity to submit written and oral comments on the removal action.

These public participation activities would be conducted by the HEER Office in the case of HEER Office-led removal actions, and required of potential responsible parties (with HEER Office oversight) in the case of removal actions carried out by those parties.

The public participation activities listed above are the minimum necessary to comply with the Hawai'i SCP. When the HEER Office requires public participation elements, it is recommended that the following actions be conducted, where feasible:

- A public notice of the proposed removal action published in the newspaper and notice also distributed by other means well before the start of the on-site removal activity. An example Public Notice for a Removal Action is provided in [Section 18](#).
- A digital copy of the public notice posted to the HEER Office website
- A copy of the public notice submitted for inclusion in the HDOH Office of Environmental Quality Control (OEQC) Environmental Notice [semi-monthly newsletter](#) (http://oegc2.doh.hawaii.gov/_layouts/15/start.aspx#/The_Environmental_Notice/Forms/AllIt)
- Copies of the public notice should be provided to any interested parties identified, as a courtesy

- Courtesy copies of the public notice should be provided to state and local elected representatives or other representatives of the area affected by the removal action: state senator, state representative, county council member, and if applicable, neighborhood board.

For releases of significant public interest or impact, additional public participation and community involvement activities may be warranted (e.g. a public meeting). The HEER Office may conduct, or may require the potential responsible parties to conduct, additional public participation activities if they are determined appropriate.

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14.2.6 NOTIFICATION OF NATURAL RESOURCE TRUSTEES

If a release affects or may affect natural resources (for example, endangered species, migratory birds, marine mammals, or other sensitive ecological resources), the HEER Office will notify the appropriate state and federal natural resource trustees. This notification may trigger a Natural Resource Damage Assessment (NRDA), which may result in cost recovery for damages in order to restore damaged natural resources identified in the assessment.

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14.2.7 SITE CLOSURES FOR REMOVAL ACTIONS

A removal action may be conducted either as a stand-alone response action, or as an interim response action to be followed by further removal or remedial action at a later date. In addition, a removal action may result in long-term management of contamination on site. Each of these different types of removal actions has implications for site closure. See [Section 19](#) for detailed guidance on site closures and for specific discussion on site closure implications of response action selection.