



State of Hawaii, Department of Health

HAZARD EVALUATION & EMERGENCY RESPONSE (HEER) OFFICE

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SECTION 19

SITE CLOSURES

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19.0 SITE CLOSURES

Under the Hawai'i State Contingency Plan (SCP) [i.e., Hawai'i Administrative Rules (HAR), Title 11, Chapter 451 (HAR Chapter 11-451)] an unrestricted site closure is granted as a "No Further Action," once the Hazard Evaluation and Emergency Response Office (HEER Office) of the State of Hawai'i Department of Health (HDOH) decides that no further action is necessary for a specific release, suspected release, or upon the successful completion of a response action (either removal or remedial action). If contaminated media remains on site that necessitates land use restrictions, a No Further Action with Restrictions status, generally referred to as "No Further Action with Institutional Controls (NFA w/ICs)" may be granted after all site controls are implemented and a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) and approved Long-Term EHMP are recorded on the property title in the Bureau of Conveyances. The HEER Office also may issue "No Action" determinations if sampling data indicate no evidence of a release or the documented release is judged by the HEER Office as not warranting cleanup or restriction.

An unrestricted site closure approved under the Voluntary Response Program (VRP) is granted as a "Letter of Completion" (LOC). If contaminated media remains on site necessitating land use restrictions, a Letter of Completion with Restrictions is granted following the implementation of all site controls and after a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) and approved Long-Term EHMP are recorded on the property title in the Bureau of Conveyances.

Note that a restriction is distinct from a *condition*. All LOCs have conditions, but they may not be "restrictions." For example, a site with a LOC allowing unrestricted use will have a condition that requires the LOC be noted on the deed and sent to the County agency that issues building permits.

The available types of site closures include:

- No Action
- No Further Action
- No Further Action with Restrictions (i.e., "NFA w/ICs")
- Letter of Completion (under VRP)
- Letter of Completion with Restrictions (under VRP)

Within the various types of site closures a number of possible outcomes exist, ranging from clean closures with no land use restrictions to containment-based remedies addressing contaminated media left on site with monitoring requirements and stringent land use restrictions.

The type of site closure being sought must be selected prior to or during the response action selection stage. To ensure that the potential restrictions and limitations resulting from the selected type of closure are both implementable and acceptable to stakeholders (e.g., owner, operator), use the systematic planning process (see [Section 3](#)) to guide site closure, keeping the long-term use of the site in mind.

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19.1 SITE CLOSURE SCOPING

Site closure scoping is an important step that includes evaluating future land uses and determining site closure implications of the selected remedy. Site closure scoping can be part of the removal action work plan/removal action alternatives analysis (see [Section 14](#)), or the remedial alternatives analysis/response action memorandum (see [Section 16](#)).

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19.1.1 EVALUATION OF FUTURE LAND USE

Planning and knowledge are crucial to evaluating site closure decisions regarding future land use of a site. Evaluating future land use typically involves reviewing available records, determining current land use, inspecting the site and surrounding area, and discussing future uses with local government officials, current and future property owners, and the community. Further information about evaluating future land use is available from the United States Environmental Protection Agency (USEPA, 2001d).

Even if potential future land use is determined to be other than “unrestricted,” for sites with contaminant concentrations above the Tier 1 Environmental Action Levels (EALs) but below the site-specific “restricted” EALs, a “land use restriction” is likely warranted. For example, a “land use restriction” is likely still warranted for a property that is currently zoned as commercial/industrial, where there are no plans to change the land use, and contaminants remain at concentrations above unrestricted EALs but below levels that would pose a hazard under current site conditions because the land use may still change over time. Additionally, the potential for transport of contaminated media from the site to a property with more sensitive receptors and/or fewer land use restrictions must be considered in evaluating potential environmental hazards and determining the need for long-term management. Any residual contamination that remains at the site at concentrations that exceed the Tier 1 EALs may therefore require institutional controls, and possibly engineering controls, to manage the potential environmental hazards over an unlimited time period to ensure land use remains the same and contaminated media is properly managed.

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19.1.2 REMEDY SELECTION AND SITE CLOSURE IMPLICATIONS

During the remedial alternatives analysis (for remedial response actions), remedies undergo a comparative analysis that focuses on the performance of each remedial alternative against three criteria: (1) Effectiveness, (2) Implementability, and (3) Cost (see [Section 16](#)). In addition, all potential remedial alternatives, except the required No Action alternative, must meet the threshold criterion of being protective of human health and the environment.

Considering the post-closure implications of each remedial option is essential to properly evaluating long-term effectiveness, implementability, and cost. Several issues must be considered to attain a site closure that is acceptable for the planned future site use and to the stakeholders involved.

Issues to consider during remedy selection and evaluation of post-closure implications include:

- Will the remedy restrict future land (or groundwater) use at the site?
- Will stakeholders concur with the land use restrictions?
- Will current and future property owners commit to implementing and maintaining the land use restrictions?
- What practices and safeguards will need to be implemented and maintained to ensure safe use of the property?
- Will the remedy compromise the architectural integrity of on-site structures?
- How will land use restrictions affect the property value? For example, will financial institutions be wary of loaning funds to prospective purchasers in future real estate transactions if contaminated soil and/or groundwater remains on site?
- What will be the long-term costs of institutional and engineering controls associated with managing contamination on site?
- What long-term effectiveness can be expected of the institutional and engineering controls? For example, will institutional controls (e.g., an environmental covenant) and engineering controls (e.g., a visible marker or boundary layer) be effective in preventing future site occupants from digging into contaminated soil or groundwater?
- What potential legal liabilities may be caused by managing contaminated soil or groundwater on site? Are landowners and other stakeholders willing to accept those liabilities?
- Will an exemption of liability for prospective purchasers granted for voluntary response actions (if the cleanup is completed under the VRP) increase the value of the property? Will an increase in value outweigh any additional costs associated with participating in the VRP?

Containment Remedies

Remedies that leave hazardous substances remaining on site as a permanent solution are known as containment remedies, because the hazardous substances are not removed or destroyed, but only contained. Containment remedies prevent hazardous substances from impacting public health or the environment only as long as they are maintained. Use of containment remedies will necessitate land use restrictions at the site.

If a containment remedy is being evaluated, the potential for it to fail over the long-term should be closely assessed. Several examples of potential remedy failures include:

- Failing to continue operation and maintenance of an active engineering control, such as an active vapor mitigation system.
- Failing to implement, maintain, and report on required monitoring.
- Failing to notify construction workers, tenants, etc. of use restrictions.
- Failing to prevent forbidden land uses, such as allowing residential use of land or soil cleaned up only to commercial/industrial Environmental Action Levels (EALs).
- Actively breaching a passive engineering control, such as digging through a protective soil layer, barrier, or visible marker into contaminated soil.
- Failing to incorporate protective systems designed to prevent exposure, such as constructing a new building on the site without the necessary vapor mitigation measures.
- Sale of the property without appropriate disclosures

Containment can be the least expensive remedy in terms of initial capital costs. However, when all of the associated costs are included (such as institutional control development, preparation and implementation of an Environmental Hazard Management Plan (EHMP), long-term monitoring costs, long-term operation of engineering controls, future incremental costs of managing contaminated materials, depreciation of land value, and maintenance costs), containment remedies typically have comparable costs to treatment remedies or removal actions. These long-term costs should be included in the Removal or Remedial Alternatives Analyses. The potential consequences of containment remedy selection include:

- Continued reporting
- Continued cost for monitoring and operation and maintenance
- May be ordered to take action under Hawai'i Revised Statutes (HRS), Chapter 128D ([HRS 128D](#)) (the state government)
- May be ordered to take action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (the federal government)
- Vulnerable to third-party torts if people claim harm
- Continued listing on state cleanup site lists
- Continued visibility to the community as a cleanup site with existing contamination

- Site flagged by Phase I Environmental Site Assessments
- Site listed as a liability on corporate balance sheets under Sarbanes-Oxley reporting
- Site property value decreased
- Less attractive to developers due to environmental protections needed for construction
- Engineering controls make future construction more difficult (e.g., concrete caps)
- Residual contamination may subject future construction workers to exposure hazards

In summary, remedial options must be thoroughly evaluated to determine the post-closure implications of each. Selection of a site closure option acceptable to the stakeholders involved will expedite the process and avoid costly and unnecessary delays.

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19.2 UNRESTRICTED CLOSURES

If contaminated media is removed or treated to concentrations below the Tier 1 EALs or alternate action levels approved by the HEER Office, the site may be closed with unrestricted use (i.e., a No Action, a No Further Action, or a Letter of Completion).

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19.2.1 NO ACTION

The HEER Office may, at its discretion, elect to review and provide determinations on sites where a property owner or prospective purchaser suspected a release that was disconfirmed by appropriate sampling data. In such cases, a No Action letter may be granted by the HEER Office.

Examples include Phase II sampling to investigate an identified “recognized environmental condition” and appropriate screening of former agricultural fields for pesticide contamination. In cases where representative sampling indicates that contaminant levels are present above natural background levels but below applicable EALs, the HEER Office may elect to issue a No Further Action letter rather than a No Action letter.

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19.2.2 NO FURTHER ACTION

An unrestricted site closure under the Hawai'i SCP ([HAR Chapter 11-451](#)) is granted as a No Further Action (NFA). Once the HEER Office decides that no further action is necessary for a specific release, suspected release, or upon the successful completion of a response action (either removal or remedial action), a NFA letter will be sent to the responsible party(s) and the property owner. If the response action has resulted in either (1) removal of impacted media or (2) treatment of impacted media to concentrations below EALs for a residential land use scenario and any ecological concerns, the site closure is referred to as a “clean closure” or an “unrestricted closure.” No land use restrictions are necessary and the site can be used for all potential future land uses. No



further reporting requirements are necessary to HDOH. If new information indicates that contamination is present at levels of concern, the HEER Office may re-open the site and require additional assessment and cleanup work (as necessary) to be performed.

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19.2.3 LETTER OF COMPLETION

An unrestricted site closure under the VRP ([HRS 128D](#), Part II) is granted as a LOC. The purpose of the VRP is to minimize environmental liability and assure timely HEER Office oversight in a way that will encourage prospective developers, lenders, and purchasers to voluntarily clean up properties. The VRP facilitates the cleanup process and, in certain situations, provides relief from the strict liability provisions of the Federal CERCLA and Hawai'i Environmental Response Laws. The greatest benefit to a site closure under the VRP is exemption of future liability for prospective purchasers and developers for the specific hazardous substances, pollutants, contaminants, media, and land area addressed in the voluntary response action, as specified in the LOC. An existing landowner does not receive relief from the strict liability provisions by undertaking a VRP cleanup; these protections extend only to prospective purchasers, future owners, operators, and tenants.

Following receipt of an unrestricted LOC, the site can be used for all potential future land uses. No further reporting to the HDOH is required. The LOC is noted on the property deed and is sent to the county agency that issues building permits. The LOC “runs with the land” and applies to all future owners of the property.

HDOH may only order a prospective purchaser who receives a LOC to re-open the site if future information indicates that contamination is present at levels of concern (above Tier 1 EALs) for contaminants and media *not listed in the LOC and VRP Agreement*, or if a new release of contaminants and media listed in the LOC and VRP agreement occurs after the LOC is signed.

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19.3 CLOSURES WITH USE RESTRICTIONS

If contaminated media is left on site necessitating institutional or engineering controls to prevent potential future exposures, the site is closed with restricted use (i.e., a No Further Action with Restrictions or a Letter of Completion with Restrictions). The potential environmental hazards posed by leaving contaminated media on site must be assessed and documented in an Environmental Hazard Evaluation (EHE) (see [Subsection 19.5](#)). The mechanism to manage the environmental hazards posed by contaminated media left on site following the final removal or remedial action and implementation of all site controls is called a Long-Term EHMP (see [Subsection 19.6](#)). To achieve site closure, a copy of the HDOH-approved Long-Term EHMP, along with a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#), must be recorded on the property title in the Bureau of Conveyances.

A typical example of a restricted use closure is a petroleum-release site where petroleum-impacted soil has been adequately characterized, both laterally and vertically, but cannot be fully excavated

from the site (e.g., petroleum-impacted soil cannot be removed without jeopardizing structural integrity of a building). In the example, soil gas samples have already been collected from beneath the building slab and the resulting data has indicated a potential environmental hazard from subsurface vapor intrusion into indoor air spaces. For this example, the site may be closed with restricted use following implementation of engineering controls (e.g., an active vapor mitigation system) and institutional controls (i.e., an environmental covenant to restrict land use), which would also be necessary to prevent future exposures. An EHE would be required to assess potential hazards posed by the remaining petroleum contaminated soil. After all other remediation is completed and engineering and institutional controls are implemented, a Long-Term EHMP would be required to document, maintain, and manage the residual contaminated soil, engineering controls, and institutional controls. The Long-Term EHMP typically would be attached to the closure document and the environmental covenant (see [Subsection 19.8.1](#)). In this case, although engineering controls are also part of the final remedy, in addition to institutional controls (ICs), the site would be closed as “NFA w/ICs” because those engineering controls that have already been implemented at the site will be maintained and managed long-term with ICs described in the Long-Term EHMP. The Long-Term EHMP itself is also considered an IC for the site.

Another example of a restricted use closure is a case where only a land use restriction is required, with no engineering controls. This is commonly applied in situations where representative contaminant levels are above the soil or groundwater “residential use” EALs, but below applicable “commercial/industrial use” EALs for a site zoned for commercial or industrial use. In this case, the site closure restriction would only allow commercial/industrial use of the property, until such time as additional site investigation or site remediation demonstrates contaminant levels are below EALs for residential or unrestricted use. As noted in the example above, an Long-Term EHMP typically must be attached to the closure document and to the environmental covenant, to help document and manage the institutional controls at the site (e.g., the land use restrictions).

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19.3.1 NO FURTHER ACTION WITH RESTRICTIONS

A restricted use closure under the Hawai'i SCP ([HAR Chapter 11-451](#)) is granted as a NFA with Restrictions, generally referred to as a “No Further Action with Institutional Controls (NFA w/ICs).” If the removal or remedial action has resulted in leaving contaminated media on site, the site closure is referred to as a “restricted use closure.” An EHE must be prepared to document and assess the residual environmental hazards posed by the remaining contaminated media following the removal or remedial action. Institutional controls and, where required, engineering controls are necessary to prevent future exposures; therefore, future land uses are restricted. A Long-Term EHMP is necessary to document, maintain, and manage the residual contamination, engineering controls, and/or institutional controls at the site. A [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) with a copy of the Long-Term EHMP must be recorded on the property title at the Bureau of Conveyances to achieve site closure (i.e., to receive NFA w/ICs status).

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19.3.2 LETTER OF COMPLETION WITH RESTRICTIONS

A restricted use closure under the VRP (HRS 128D, Part II) is granted as a LOC with Restrictions. An EHE must be prepared to document and assess the residual environmental hazards posed by the remaining contaminated media following the removal or remedial action. Institutional controls and, where required, engineering controls are necessary to prevent future exposures; therefore, future land uses are restricted. A Long-Term EHMP is necessary to document, maintain, and manage the residual contamination, engineering controls, and/or institutional controls. Long-term (periodic) monitoring and reporting to the HEER Office will be required. Prior to receiving the LOC with Restrictions, a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) that includes a copy of the Long-Term EHMP for the site must be recorded on the property title in the Bureau of Conveyances.

In addition to a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) and a copy of the Long-Term EHMP, the LOC with Restrictions is recorded on the property title in the Bureau of Conveyances and is sent to the county agency that issues building permits. The restrictions on the LOC “run with the land” and apply to all future owners of the property.

HDOH may order a prospective purchaser receiving a LOC to re-open the site only if institutional or engineering controls that are part of the LOC are not being maintained, contaminant concentrations are discovered at levels of concern (e.g., above Tier 1 EALs) for contaminants and media not listed in the LOC and VRP Agreement, or if a new release of contaminants and media listed in the LOC and VRP agreement occurs after the LOC is signed. Except when the prospective purchaser or future property owner fails to maintain the site controls or otherwise breaches the conditions of the LOC with Restrictions, HDOH cannot require prospective purchasers or future property owners to perform additional work for contaminants and media covered in the VRP Agreement, as they have exemption from liability under HRS 128D, Part II.

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19.4 NO FURTHER ACTIVE REMEDIATION LETTER

A No Further Active Remediation Letter is available for contaminated sites where potentially significant, environmental concerns remain but active remediation (e.g., excavation, soil vapor extraction, etc.) is no longer practical. This type of letter is often used when further excavation can jeopardize the structural integrity of buildings. If needed, a letter may be requested from the HEER Office indicating that No Further Active Remediation is required at such a site.

A No Further Active Remediation status is not considered a type of site closure. The case will remain “open” in the HEER Office site records. The letter is intended to clarify that all major cleanup actions have been completed at the site, but significant contamination remains and the site has moved into a status of long-term monitoring and management. This status may be helpful to site owners, financial institutions, and potential purchasers to establish the “environmental liability” of a site with remaining contamination prior to formal site closure. The No Further Active Remediation letter may also contain conditions of further work when (or if) the site is redeveloped. The need for



on-going groundwater monitoring or soil gas monitoring may indicate a No Further Active Remediation Letter is not yet appropriate.

An EHE must be prepared to document and assess the remaining contamination. An EHMP must be prepared to manage the contamination, engineering controls, and/or institutional controls. The EHMP must include a description of conditions that must be met before the site can be formally closed with status of either No Further Action or a No Further Action with Restrictions.

Additional information regarding No Further Active Remediation letters is presented in HDOH guidance on Long-Term Management of Petroleum-Contaminated Soils and Groundwater ([HDOH, 2007c](#); included as [Appendix 19-A](#)). This document outlines procedures for long-term management of residual petroleum contamination where a full cleanup is not practicable. The guidance document includes discussion and figures providing decision trees to address long-term oversight of residual petroleum contamination.

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19.5 ENVIRONMENTAL HAZARD EVALUATION (EHE)

Environmental Hazard Evaluation (EHE) is the link between site investigation activities and response actions. In addition, if contaminated media is left on site under a restricted use closure, the EHE is necessary to assess and document potential environmental hazards posed by the contamination. Results of the EHE are crucial in selecting the appropriate measures, such as engineering and/or institutional Controls, to prevent future exposures. [Section 13](#) presents a detailed discussion on the preparation of an EHE.

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19.6 ENVIRONMENTAL HAZARD MANAGEMENT PLAN (EHMP)

If contaminated media is left onsite at concentrations that exceed the Tier 1 unrestricted use (e.g., residential) Environmental Action Levels (EALs) and the HEER Office determines the residual contamination poses a potential environmental hazard, then institutional controls (ICs) and, where required, engineering controls must be implemented at the site during the Response Action to mitigate receptor exposure to the associated environmental hazards. Following the Response Action, preparation of an *Environmental Hazard Management Plan (EHMP)* is required to maintain the site controls and manage the environmental hazards identified in the Environmental Hazard Evaluation (EHE) until such time that future remedial actions reduce the contaminant concentrations to below levels of concern. This includes sites closed with only institutional controls (e.g., including sites where the only control is a commercial/industrial land use restriction), as well as sites that have not yet received an official closure by the regulatory authority (e.g., sites with “interim” engineering and/or institutional control implemented under an Interim Remedial Action or Removal Action that are still awaiting additional characterization and/or remediation).

The EHMP documents the presence of contaminated environmental media (e.g., soil, soil vapor, sediment, surface water, and/or groundwater) on a site at levels that could pose potential environ-



mental concerns and describes how the contamination must be managed in the absence of remediation. The EHMP presents all necessary information in a single, user-friendly, stand-alone document that identifies:

- Specific contaminants that have been identified at the site above the most conservative unrestricted/residential-use screening criteria.
- The approximate lateral and vertical extent of the contamination.
- Potential environmental hazards posed by the contamination.
- Institutional and/or engineering controls required to manage remaining contamination.
- Appropriate handling and disposal instructions for contaminated media encountered during future construction or utility work.
- Responsibilities of individual parties (e.g., owners and operators) to ensure that all requirements outlined in the EHMP are followed.

HDOH specifies four different types of EHMPs based on the specific phase and associated exposure concerns at the site:

1. *Long-Term (Site-Specific) EHMP.* Prepared for cases where site conditions have been adequately characterized, contamination is relatively localized, and a response action has been completed, but contamination remains in-place at concentrations that exceed the Tier 1 EALs and the HEER Office determines that the residual contamination poses a potential environmental hazard. A Long-Term EHMP typically applies to a single land parcel or a portion of a land parcel that constitutes the release area "site." The EHMP is typically attached to the closure document and must also be attached to a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) recorded on the property title in the Bureau of Conveyances.
2. *Interim EHMP.* Prepared for cases where site conditions have not yet been adequately characterized and/or a Response Action has not been completed but HDOH has required and approved an interim action to manage exposure to the contamination. An Interim EHMP typically applies to a single land parcel or portion of a land parcel where potential or suspected environmental hazards are known or presumed to be present. Sites managed with interim controls and an Interim EHMP do not qualify for site closure. A typical example of a site with an Interim EHMP in place is a commercial/industrial facility with contamination present underneath a structure or paved area where the contamination cannot be adequately characterized without damaging the existing cap and no immediate environmental hazards are identified. In such a case, if future site conditions change to allow access to the contaminated media, for example, if the structures at the property are demolished, then HDOH will likely require complete characterization of the site and remediation in accordance with HRS 128D and HAR 11-451 prior to approving redevelopment.

3. *Programmatic (or Area-Wide) EHMP*. Prepared for cases where widespread contamination is known or assumed to be present over a large area that crosses multiple land parcels. These often cover common/public areas or large state/county owned areas. Sites within a Programmatic EHMP Area may have Long-Term (i.e., Site-Specific) EHMPs that supersede the Programmatic EHMP. Activities conducted within a Programmatic EHMP Area may require a Construction EHMP. Contaminants of Potential Concern (COPCs) identified in a Programmatic EHMP might not be present or might not be adequately characterized in all areas encompassed by the EHMP. Therefore, additional assessment will be required prior to large-scale redevelopment activities. Preparation of a Programmatic or Area-Wide EHMP must be first approved by HDOH to determine if it is the most appropriate EHMP for the properties involved.
4. *Construction EHMP*. Prepared for sites where construction-activities will occur and contamination remains present and is managed with a site-specific Long-term or Interim EHMP or a Programmatic EHMP. The *project-specific* Construction EHMP (C-EHMP) is normally designed to protect site workers, prevent offsite migration of contamination or exacerbation of existing conditions and ensure that contaminated media and site engineering controls are not disturbed. Long-Term, Interim, and Programmatic EHMPs generally include soil management guidance for small-scale and emergency repair activities that may disturb site controls or contaminated media, but a *project-specific* C-EHMP is required for any larger scale projects. A C-EHMP incorporates site environmental hazard information from the Long-Term, Interim, or Programmatic EHMP and project-specific construction plans to provide detailed requirements for worker protection and contaminated media management during the construction project. Following the completion of the project, a re-evaluation of site hazards and revision of the EHMP may be necessary. If a Long-Term EHMP recorded on a property title with a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) requires revision due to changes in site conditions, then the covenant and Long-Term EHMP will have to be removed from the property title and replaced with updated and revised documents recorded in the Bureau of Conveyances. If a site is managed with interim controls and an Interim EHMP, then HDOH may require complete site characterization and a final Response Action prior to approving construction to proceed under a C-EHMP.

Long-Term and Interim EHMPs are generally meant to manage site conditions with minimal or no disturbance of impacted media. Construction EHMPs and, to some extent, Programmatic EHMPs are generally designed to allow for managed disturbance of the impacted media while remaining protective of human health and the environment. A more detailed discussion of each type of EHMP is provided below.

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19.6.1 BASIC COMPONENTS OF ALL EHMPs

Basic components of all EHMPs include:

- Summary of site conditions, current/historical uses, past or ongoing environmental investigations. Summaries should be brief yet must include all pertinent information.

- To-scale figures that clearly identify areas of known and suspected contamination.
- Identification of all Contaminants of Potential Concern (COPCs). This should be based on all available data/information for the site. Discuss data gaps that should be considered when determining the COPCs.
- Abbreviated Environmental Hazard Evaluation (EHE). An EHE is required prior to preparation of an EHMP, since the former serves as the basis for requirements in the latter. If a separate EHE has not been created, then one should be prepared following the guidelines in Section 13 and included as an appendix of the EHMP. The EHE should include:
 - Identification of all potential environmental concerns, as described in the HEER Office EHE guidance.
 - Identification of all potential current and future exposure to contamination by human or, as necessary, ecological receptors.
 - Evaluation of all hazards for all potential receptors. This should include evaluation of off-site residential receptors should soil potentially be transported off-site.
 - Use both site-specific Environmental Action Levels (EALs) and EALs for unrestricted use where groundwater is a potential drinking water resource and the nearest surface waterbody is less than 150 meters away (most restrictive, Tier 1 EALs).
 - Environmental Hazard Maps (i.e., to-scale maps that summarize the location and nature of potential environmental hazards at the site).
- Engineering and Institutional Controls. Provide a discussion of engineering and/or institutional controls required to address identified environmental hazards and to eliminate exposure pathways (for example, cap, vapor mitigation system, annual inspection requirements, land use restrictions, etc.). Information to be provided includes:
 - Measures for repair or replacement of engineering controls that are disturbed or breached during future site activities.
 - Requirements for recurring (e.g., annual or more frequent) inspections of Institutional Controls to be submitted to HDOH.
- Management of Contaminated Media. Discuss recommendations for proper handling and management of contaminated soil, groundwater, sediment and/or vapor that could be encountered during activities conducted at the site, including disposal requirements.
- Health and Safety Measures. Provide a specific description of employee or construction worker protections and required notifications.
- Long-term monitoring. Described long-term monitoring requirements for contaminated soil, groundwater and/or soil vapor.

For large, complex sites where significant public review is anticipated, a brief Fact Sheet that summarizes key elements of the EHMP in simple, non-technical terms will also be required.

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19.6.2 LONG-TERM (SITE-SPECIFIC) EHMPs

Long-Term EHMPs are prepared to document site conditions following the thorough site characterization, EHE, and completion of a final response action in accordance with HAR 11-451. The document provides guidance for long-term management of residual contamination at the site, including maintenance and management of engineering and institutional controls. Long-Term EHMPs are living documents and must be updated when conditions at the site change, such as following large-scale construction projects. Since the Long-Term EHMP must be attached to a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) and recorded on the property title at the Bureau of Conveyances, significant revisions of the EHMP will also require replacement of the UECA covenant in the Bureau of Conveyances records.

Prior to selecting a remedy, evaluate response actions in accordance with the hierarchy of response action alternatives presented in HAR 11-451-8(c)(2). Note that reliance on engineering and/or institutional controls alone in the absence of physical treatment or removal of contamination is the *least-preferred* response action. Long-term management requirements imposed on the site will be required indefinitely, unless the contaminated media is treated or removed at a future date or naturally attenuates to below levels of potential concern. Be aware that this could affect future development of the property as well as the property value.

All institutional and engineering controls must be implemented at the site as part of a HAR 11-451 Response Action prior to preparing the Long-Term EHMP. The Long-Term EHMP is the final institutional control for the site. The purpose of the Long-Term EHMP is to document the environmental hazard and implemented site controls, and to manage and maintain those site controls indefinitely, or until future remediation or site characterizations confirm that contamination concentrations are reduced to below unrestricted use levels. The Long-Term EHMP must be reviewed and approved by HDOH and then must be recorded on the property title along with an environmental covenant in accordance with 508C HRS at the Bureau of Conveyances as described below, prior to the issuance of a site closure document.

To ensure that future property owners are aware of and comply with the requirements of the site-specific Long-Term EHMP, it is required that an environmental covenant, in accordance with 508C HRS, with a copy of the approved Long-Term EHMP attached as an appendix be recorded in the Bureau of Conveyances and attached to the property title. This is required for all sites to receive a restricted site closure status (e.g., No Further Action with Institutional Controls). The Covenant must describe environmental hazards, restrictions, and institutional and/or engineering control requirements presented in the EHMP and note that the EHMP must be updated or revised if conditions change.

If significant activities, such as redevelopment, are planned for the site following site closure and implementation of the Long-Term EHMP, a C-EHMP will likely be required to manage exposure to environmental hazards and ensure proper handling of the contaminated media during construction. The C-EHMP must also include replacement of engineering and institutional controls that are disturbed at the site. Following construction, the Long-Term EHMP may need to be revised to reflect changed site conditions. If this is the case, then the property owner and HDOH may decide to wait until the final revised Long-Term EHMP is approved before recording the environmental covenant

in accordance with 508C HRS, on the property title in the Bureau of Conveyances. This will avoid having to remove and replace the original covenant with the earlier version of the Long-Term EHMP attached, however, note that HDOH will not issue the final closure document (e.g., the NFA w/ICs letter) until the covenant with the attached EHMP is recorded on the title in the Bureau of Conveyances.

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19.6.3 INTERIM EHMPs

Determination of the exact magnitude and extent of contamination at a site and/or full cleanup might be temporarily infeasible due to on-going operations or other limitations at the site. When this is the case, a conservative estimate of the nature and extent of contamination should be made and used to develop a conservative Preliminary EHE for the site. Sufficient sampling must be conducted to confirm whether there is an immediate hazard (e.g., potential vapor intrusion) or active migration of the release (e.g., a mobile groundwater plume) that must be addressed without delay. If there are no immediate hazards and site conditions are such that direct exposure hazards are mitigated (e.g., with an existing cap) or can be mitigated with implementation of interim controls, then an Interim EHMP may be acceptable for the site.

Prior to preparing an Interim EHMP, an Interim Remedial Action or Removal Action to implement temporary/interim engineering and institutional controls and/or document existing interim controls must be conducted in accordance with HAR 11-451. This may require a Removal Action or Remedial Action Work Plan, or may be documented in a Removal Action Report (RAR) or Interim Remedial Action Completion Report (RACR); however, since thorough site characterization has not been completed (e.g., insufficient sampling or vertical/horizontal extents not fully delineated), these will not constitute final response action completion documents. Once all temporary/interim controls have been implemented and documented in a RAR or Interim RACR that includes a revised Preliminary EHE, the Interim EHMP may be drafted to manage and maintain the interim controls until site conditions allow for further site investigation and/or remedial work. Requirements in the Interim EHMP must be adhered to until the contamination can be fully delineated and appropriately remediated. As site conditions change or new information becomes available, the Interim EHMP must be revised accordingly.

Interim management requirements imposed on the site will be required indefinitely, or until the contaminated media is treated or removed at a future date or naturally attenuates to below levels of potential concern. Be aware that this could affect future development of the property as well as the property value.

Where the property will be redeveloped, or the site conditions and limitations that prevented the site from being thoroughly characterized and/or remediated are removed (e.g., if the existing site structures are demolished, thereby providing access to characterize and remediate the site), then HDOH will usually require the site to be adequately characterized, hazards properly evaluated, and a Response Action conducted in accordance with HAR 11-451 prior to approving further activities at the site. If contamination will remain in place following the Response Action, then a C-EHMP will be required to manage exposure to environmental hazards and ensure proper handling of the con-

taminated media during construction. Following construction, if contamination remains in place, it must be mitigated with engineering and institutional controls and will require a revised Interim EHMP or a Long-Term EHMP.

The property owner must discuss with the HEER Office whether an Interim EHMP is appropriate for the site. HDOH-approved Interim EHMPs are not eligible to receive a No Further Action with Institutional Controls (NFA w/ICs) status. However, they can still be protective of site users and provide a level of confidence to property owners and financial institutions, and therefore may be recommended by the HEER Office where conditions temporarily do not allow for completion of site investigation or remedial actions.

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19.6.4 PROGRAMMATIC (AREA-WIDE) EHMPs

Programmatic or Area-wide EHMPs provide guidance for large areas or programs (e.g., specific entities and specific types of construction projects) where widespread contamination is known, suspected or could otherwise be encountered. Such EHMPs are usually prepared by HDOH or in close coordination with HDOH and do not supersede site-specific Interim or Long-Term EHMPs. The guidance provided typically addresses worker protection, soil management and disposal, hazard communication, and Best Management Practices (BMPs).

Programmatic and Area-wide EHMPs provide general guidance to manage contamination within the area(s), similar to a site-specific EHMP. The EHMPs often cover very large areas (e.g., Honolulu Harbor, Waikoloa Maneuver Area, Kahului Harbor Industrial District) or multiple areas under the oversight of a single entity (e.g., State-owned Airports). Contamination is often associated with multiple sources and involves a variety of COPCs. The full extent and magnitude of contamination might or might not have been delineated.

Programmatic and Area-wide EHMPs can normally be referred to for small-scale excavation activities and emergency repairs within the subject area or by the subject entity without the need for additional details. The property owner or operator should reach out to the HEER Office for guidance if a large-scale redevelopment will occur within an area covered by Programmatic or Area-wide EHMP. A Construction EHMP will likely be required. In many cases, additional investigation activities will be cost-beneficial or even required to confirm the presence of COPCs and optimize contamination remediation and management actions.

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19.6.5 CONSTRUCTION EHMPs

Construction EHMPs are project-specific. The C-EHMP may only be prepared for a project that is already covered by a site-specific (Interim or Long-Term) or Programmatic EHMP. If a site is not already covered by a site-specific (Interim or Long-Term) or Programmatic EHMP, then a Response



Action in accordance with HAR 11-451 must be completed before a C-EHMP can be used for a proposed project. If the site is not adequately characterized, then HDOH may require additional site characterization or, depending on the scope of the project, may allow interim controls to be implemented under an Interim Remedial Action or Removal Action in accordance with HAR 11-451.

Generally, a C-EHMP is only appropriate for those sites where a response action has been conducted; a Removal Action Report (RAR), Interim Remedial Action Completion Report (RACR), or final RACR has been prepared and approved by the HEER Office; and contamination remains at the site. For these instances, an Interim or Long-Term site-specific EHMP must be prepared prior to determining whether a Construction EHMP is appropriate. In some exceptional cases, following the response action, HDOH may allow for completion of construction under a C-EHMP prior to the completion of the site-specific Interim or Long-Term EHMP. This may be approved if the construction project itself will result in removal of a significant amount of contaminated media and/or the implementation of engineering controls. In most instances, however, both a RAR/RACR and site-specific EHMP will be required to be completed and approved by the HEER Office prior to preparing a Construction EHMP.

C-EHMPs are primarily prepared prior to conducting re-development or other construction activities and used to manage identified contamination during these activities. The Construction EHMP includes the basic components of a site-specific EHMP (brief summary) and also includes specific details regarding management of contaminated media with respect to the particular construction project. These additional details must include, at a minimum:

- Contact information for the developer, property owner, contractors, on-site qualified environmental professional, and any other pertinent personnel associated with the project;
- Evaluation of planned construction materials with regards to known contaminants at the site (i.e., evaluating gaskets for storm drains or other utilities that may be degraded in contaminated groundwater);
- Determine the compatibility of construction materials that are likely to be in contact with contaminated media;
- Should construction materials not be in contact with contaminated media or should the contaminants present at the site not pose any potential impacts to construction materials, then this should be stated in the C-EHMP;
- Detailed description of types of planned construction activities;
- Figure(s) that illustrates the location of known or suspected contamination in relation to planned construction;
- Specifics regarding soil reuse and disposal, including:
- Planned re-use or disposal locations;



- Volume of soil proposed for export;
- Sampling methodology to characterize soil for re-use or disposal
- COPCs and recommended laboratory test methods;
- Recommended sample collection methods (Multi Increment samples collected in accordance with Sections 3, 4 and 5 of the HEER TGM required for final decision making purposes);
- Specifics regarding any potential dewatering activities that may be conducted and associated requirements for groundwater disposal or re-infiltration;
- Any other construction-related environmental information that may be relevant.

C-EHMPs must be signed by the property owner, the contractor, and the qualified environmental professional to acknowledge that all parties will be responsible for implementing the requirements of the Construction EHMP. Construction EHMPs should be simple to understand guidance designed for use by the general contractor and sub-contractors at the project site. A template that can be used to help prepare an appropriate C-EHMP for individual projects is available for download from the HEER website (<https://health.hawaii.gov/heer/guidance/environmental-hazard-management-plans/#construction>).

In some cases, contamination is identified during construction activities. Construction work that could further disturb the contamination should cease immediately and the contamination must be reported to the appropriate entities, including the HEER Office. For more information on release reporting see Section 2.3.1.

The HEER Office will work with parties to determine whether additional investigation and/or remediation is required before construction activities in the affected area can restart. In some cases, the additional investigation can occur concurrent with or immediately following construction activities. In either case, an HDOH-approved C-EHMP will need to be prepared that outlines how workers will be protected and contaminated media will be managed in relation to the specific construction project prior to the restart of activities.

Within 30 days of completion of ground-disturbing activities associated with the project, the owner must provide a project completion report to HDOH that documents compliance with the C-EHMP and any variance from the approved plan, documents the replacement or implementation of any required engineering and institutional controls for the site, and includes records for all contaminated media that was disposed of or re-used on- or off-site. If significant changes to the composition or distribution of environmental hazards occurred at the site, then the completion report should include a revised Environmental Hazard Evaluation (EHE) or a separate revised EHE must be submitted to HDOH following the project. For projects where contamination will remain on-site following a construction activity, additional site characterization and/or revision of the site-specific EHMP for long-term management of the contamination will likely be required.



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19.7 INSTITUTIONAL AND ENGINEERING CONTROLS

Appropriate measures must be used to mitigate the environmental hazards posed by contaminated media left on site in restricted use closures. These measures are defined as institutional controls and engineering controls. *Institutional controls* are methods intended to prevent exposure to contaminated media by legal or procedural means (e.g., environmental covenants), as opposed to *engineering controls*, which are methods of exposure prevention by physical means (e.g., an active vapor mitigation system to prevent subsurface vapor intrusion into indoor air spaces).

Institutional controls alone are generally not sufficient to mitigate environmental hazards, with the exception of commercial or industrial zoned sites where representative sampling has demonstrated contaminant levels are above residential or unrestricted use EALs, but below applicable commercial/industrial use EALs. Once established and implemented, engineering controls require institutional controls for their long-term management and maintenance (e.g., an EHMP or other long-term management plan). Consequently, in most cases, institutional and engineering controls must be used together to adequately mitigate and manage remaining environmental hazards at restricted use closure sites.

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19.7.1 INSTITUTIONAL CONTROLS

Institutional controls are legal or administrative measures that prevent exposure by influencing human behavior through laws, rules, permits, requirements, contracts, warnings, and advisories. Institutional controls help to minimize the potential for human exposure to contaminated media by controlling activities that may affect exposure. Institutional controls also restrict land use and on-site activity that might interfere with the containment of contaminated media left on site. Examples of institutional control measures include:

- Prohibition on excavation of soil,
- Prohibition on use of groundwater,
- Prohibition on residential or other sensitive land use,
- Requirement to use a C-EHMP for large-scale projects or redevelopments that will disturb the engineering controls and/or contaminated media, and
- Requirement to conduct additional characterization and/or remediation in the event of removal of structures or other features functioning as engineering caps.

HDOH's primary legal instruments for establishing institutional and/or engineering controls at a site are the site closure document, Long-Term EHMP, and [Section 1.1.3 environmental covenant in accordance with 508C HRS](#). HDOH requires a [Section 1.1.3 environmental covenant in accordance with 508C HRS](#) to provide additional long-term protection for sites closed with residual contamination.

tion present at concentrations greater than Tier 1 EALs that are determined by HDOH to pose a potential future environmental hazard (see [Subsection 19.8.1](#)).

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19.7.2 ENGINEERING CONTROLS

Engineering controls are tangible measures that prevent exposure by physically preventing humans (or wildlife) from coming into contact with contaminated media left on site at restricted use closure sites. Institutional controls are required to ensure that engineering controls are properly managed. Examples of engineering controls include:

Soil Contamination

- Capping systems – contaminated soil is covered with a cap to reduce surface-water infiltration and leaching, control gas and odor emissions, improve aesthetics, provide a stable surface over the contaminated soil, and prevent human exposure from direct contact. Caps can range from a simple native soil cover to single layer caps (e.g., asphalt/concrete and soil/bentonite/clay) to multi-layer cover systems (e.g., Resource Conservation and Recovery Act [RCRA] caps) to buildings or structures. Consideration must be given to the type, magnitude, and extent of contaminated soil when selecting the appropriate cap. A cap for soils contaminated with highly toxic and persistent contaminants should be highly durable and long lasting, such as a multi-layer cover system. Soil caps may be appropriate at certain sites where future development/construction is highly unlikely and institutional controls are used to restrict such land use. The soil cap thickness is determined considering site-specific factors but must be adequate to reduce or eliminate the environmental hazard(s). A visible marker, such as orange construction fencing, is generally used to mark the top of the contaminated soil layer. Soil caps are typically used for non-volatile contaminants where leaching is not a concern. If a structure is used as a cap, the permanence of the proposed building must be considered. For example, a high-rise structure designed and built for the long-term would be an appropriate “building cap” for significantly contaminated soils. The shorter life span of less durable structures must be taken into account when assessing long-term effectiveness of the cap.
- On-site Encapsulation/Repository – for potentially mobile contaminants, soil is consolidated and encapsulated into a lined subsurface on-site cell or vault. Such systems are designed to eliminate or reduce surface-water infiltration and leaching, control gas and odor emissions, improve aesthetics, and prevent human and ecological exposure from direct contact. On-site repositories range from High Density Polyethylene (HDPE) liner encapsulation to subsurface concrete vaults. For non-mobile contaminants, unlined borrow pits may be adequate for on-site management.

Groundwater Contamination



- Hydraulic Containment – measures are used to control the hydraulic gradient to minimize the spread of a groundwater plume. One example is the use of pumping wells to actively prevent the plume from spreading and reaching drinking water wells, surface water, or uncontaminated aquifers, etc. Another example is a slurry wall in which low permeability materials, such as grout, are injected into the subsurface to contain a groundwater plume. Institutional controls are necessary to restrict groundwater use.
- Alternative Water Source – an alternative water source can be provided to an area where groundwater is contaminated and not suitable for ingestion. Institutional controls are necessary to restrict groundwater use.

Sediment Contamination

- Capping systems – contaminated sediments are covered with a cap to eliminate erosion and dissolution into the water body, improve aesthetics, provide a stable surface over the contaminated sediment, and prevent human and ecological exposure from direct contact. An example is lining a streambed containing contaminated sediments with an impermeable material, such as HDPE liner, and then stabilizing the liner with highly durable materials, such as riprap and concrete.
- Dredging – An ongoing dredging program can be used as an engineering control of contaminated sediments, as well.

Soil Vapor Contamination

- Vapor barriers – impermeable materials are placed beneath a proposed building site to prevent subsurface vapor intrusion into indoor air spaces. Active vapor removal systems should be considered for sites with significant soil gas issues in which a gas collection system is placed beneath the barrier and connected to a suction fan, which may be vented above the roof of the building, or connected to a vapor treatment system such as a thermal oxidizer or granular activated carbon.

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19.8 LEGAL INSTRUMENTS FOR RESTRICTED USE CLOSURES

The primary legal instruments for establishing engineering and/or institutional controls at a site are the HDOH closure determination (e.g., No Further Action with Institutional Controls determination letter) and [Section 1.1.3 environmental covenants](#). Environmental covenants and land use restrictions listed in a LOC with Restrictions and recorded on the property title in the Bureau of Conveyances for sites in the VRP are another legal instrument for establishing institutional controls. At Department of Defense (DoD) Installation Restoration sites, Land Use Controls (LUCs) are generally implemented through a Land Use Controls Implementation Plan (LUCIP), but if the property is no longer owned or controlled by DoD, then additional restrictions may be necessary.

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19.8.1 UNIFORM ENVIRONMENTAL COVENANTS ACT (UECA) ENVIRONMENTAL COVENANT

The Uniform Environmental Covenants Act (UECA) is a Uniform Law that was approved by the Uniform Law Commission (also known as National Conference of Commissioners on Uniform State Laws) in 2003. The State of Hawai'i adopted the UECA as Senate Bill 1167 in 2006 [Hawai'i Revised Statutes (HRS), Chapter 508C (HRS 508C)]. The act is codified as HRS Chapter 508C. UECA establishes requirements for a new valid real estate document called an *environmental covenant* to control the future use of sites with contaminated media left on site when real estate is transferred from one person to another.

An environmental covenant is a legal device that restricts activities for sites where contaminated media is left on site. In such cases, institutional controls are needed to restrict land use to supplement the remedy and ensure safe land use. An environmental covenant in accordance with 508C HRS is based upon traditional property law principles and must be recorded in the local land records, thereby binding successive owners of the property. The State of Hawai'i has clear rights to enforce the land use restrictions under UECA covenants, ensuring with greater certainty the protection of human health and the environment throughout the life of the land use restriction and through real estate transactions or legal actions.

HDOH requires environmental covenants in accordance with 508C HRS for sites that are closed with residual contamination left in place at concentrations greater than the Tier 1 Environmental Action Levels (EALs) where HDOH determines that the contamination must be managed in place with long-term institutional controls (ICs) and, where required, engineering controls, in order to receive a No Further Action with Institutional Controls (NFA w/ICs) status. The environmental covenant must describe 1) the environmental hazards remaining at the site, 2) the restrictions on future use of the site (if any), and 3) the requirements to maintain and manage engineering controls and ICs as described in the approved site Long-Term Environmental Hazard Management Plan (EHMP). A copy of the approved Long-Term EHMP must be attached to the UECA covenant and the documents must be recorded on the property title in the Bureau of Conveyances.

An example environmental covenant in accordance with 508C HRS is provided in [Subsection 18.6.5](#).

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19.8.2 VOLUNTARY RESPONSE PROGRAM (VRP) LETTER OF COMPLETION (LOC)

Site closure under the VRP ([HRS 128D](#), Part II) is granted as a LOC. Under HRS 128D, Part II, a LOC is noted on the property deed and is sent to the county agency that issues building permits. The benefits and restrictions of the LOC “run with the land” and apply to all future owners of the property. Also, see [Subsections 19.2.3](#) and [19.3.2](#). Where contamination is left in place at concentrations greater than the Tier 1 EALs and the HEER Office determines that the contamination must be managed in place with long-term institutional controls and, where required, engineering controls, HDOH also requires that a UECA environmental covenant be placed on the property prior to issuing the Restricted LOC. The environmental covenant must describe 1) the environmental hazards remaining at the site, 2) the restrictions on future use of the site (if any), and 3) the require-

ments to maintain and manage engineering controls and ICs as described in the approved site-specific EHMP. A copy of the approved Long-Term EHMP must be attached to the UECA covenant and the documents must be recorded on the property title in the Bureau of Conveyances.

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19.8.3 DOD LAND USE CONTROLS IMPLEMENTATION PLANS (LUCIPS)

Under DoD guidance ([DoD, 2001](#)), LUCs may be placed on DoD real property because of environmental restoration concerns. The Installation must then develop an implementation plan for the LUCs. A LUCIP is a DoD internal management tool that explains how LUCs will be established and identifies the individual(s) responsible for their maintenance and management. The LUCIP is incorporated in the DoD Installation Master Plan (DoD, 2001). DoD guidance (DoD, 2001) mandates that if a property subject to LUCs is transferred from federal ownership, the LUCs must be incorporated into the property transfer documents. Specifically, necessary language for the LUCs must be drafted, such as deed restrictions or restrictive covenants ([DoD, 2001](#)).

During the time the federal government owns a property subject to LUCs, HDOH has agreed that the DoD LUCIPs will be sufficient to comply with the UECA ([HDOH, 2007b](#)). In other words, as long as the DoD LUCs are clearly identified and observed pursuant to DoD policy (through the use of a LUCIP), HDOH does not require that DoD place UECA covenants on federally owned property. For Installation Restoration sites, the DoD must, however, provide HDOH with information including 1) the site location, 2) the specific LUCs at the site, and 3) other reasonably ascertainable information regarding the site requested by HDOH. The site will then be included in the HDOH registry of sites with land use restrictions. This provision is not currently required for active installations ([HDOH, 2007b](#)).

If a property that is subject to LUCs is transferred from federal ownership, the DoD must execute a restrictive covenant regarding the LUCs in a form acceptable to HDOH. The restrictive covenant must be recorded on the title of the property in the Bureau of Conveyances. The covenant must be in accordance with the Hawaii Uniform Environmental Covenant Act (UECA), Hawaii Revised Statute 508C, and must specify whether DoD will continue to be responsible for the maintenance of the site LUCs and if so, must specify that the new and future property owners will provide DoD access to the property for the inspection, management, and maintenance of the LUCs.

For sites where DoD will continue to maintain LUCs after the property transfer, the UECA covenant must describe 1) the environmental hazards remaining at the site, 2) the restrictions on future use of the site (if any), and 3) the requirements for DoD to maintain and manage engineering controls and institutional controls as described in the LUCIP. In this instance, the UECA covenant must be recorded on the property title in the Bureau of Conveyances with the LUCIP as an attachment.

If the covenant requires the new and future owners of the property to manage and maintain the institutional and engineering controls at the property, then an HDOH-approved Long-Term EHMP must be prepared and signed by the new owner and that EHMP will replace the LUCIP as the document to manage and maintain the site institutional and engineering controls. In this case, the UECA covenant must describe 1) the environmental hazards at the site, 2) the restrictions on fu-

ture use of the site (if any), and 3) the institutional and engineering controls described in the EHMP that must be maintained by the property owner. In this instance, the UECA covenant must be recorded on the title with the EHMP as an attachment in the Bureau of Conveyances.

If the proposed future use of the property is not consistent with the limitations under the LUCIP, HDOH may require additional site investigation and/or remediation of the site environmental hazards prior to redevelopment. For example, if the Navy closed a former unpermitted landfill and left contamination in the ground that was not fully characterized because it was determined that there was no exposure hazard due to Navy restricting access to the site and that property will be transferred to a new owner who plans to develop the property for affordable housing, then HDOH may require the site to be adequately re-characterized and, if previously unidentified hazards are discovered, HDOH may require further remediation before approving a C-EHMP for the redevelopment and re-use of the property. These additional remedial activities should be conducted by DoD prior to the land transfer. If the prospective new owner agrees to accept responsibility for conducting the required additional investigation and Response Action activities, then the required additional activities should be clearly communicated by DoD to the prospective new owner at the time of property transfer.

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19.8.4 PROPERTY TRANSFERS AND SITE CLOSURES WITH USE RESTRICTIONS

All sites closed with restrictions require ongoing participation from the property owner to maintain safe use of the property and prevent remedy failure. Therefore, HDOH strongly recommends that residual contamination and required institutional and/or engineering controls be freely disclosed to potential purchasers prior to property transfer. Following a property transfer, the new property owner must contact HDOH within 30 days of acquisition and provide documentation confirming that they will be responsible for managing and maintaining institutional and engineering controls at the property in accordance with the EHMP and any other site closure documents.

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