



**TGM for the Implementation of the Hawai'i State Contingency Plan
Section 18.0
REPORT FORMATS AND CONTENT GUIDELINES**

**SECTION 18
REPORT FORMATS AND CONTENT GUIDELINES**

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TGM for the Implementation of the Hawai'i State Contingency Plan

Section 18

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Section 18

ACRONYMS AND ABBREVIATIONS

SECTION 18 ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or relevant and appropriate requirements
CAD	Computer-Aided Design
CD	Compact-disc
CFR	Code of Federal Regulations
CSV	Comma separated values
DQO	Data Quality Objective
DVD	Digital video disk
EAL	Environmental Action Level
EHMP	Environmental Hazard Management Plan
FTP	File Transfer Protocol
GIS	Geographical Information System
HAR	Hawai'i Administrative Rules
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HDOH	Hawai'i Department of Health
HEER Office	Hazard Evaluation and Emergency Response Office
HRS	Hawai'i Revised Statutes
ID	Identity
LEPC	Local Emergency Planning Committees
LIMS	Laboratory Information Management System
LOC	Letter of Completion
NAD83	North American Datum 1983
NFA	No Further Action
NRC	National Response Center
OSHA	Occupational Safety and Health Administration
PDF	Portable Document Format
PRP	Potentially Responsible Party
QA/QC	Quality Assurance and Quality Control
QAPP	Quality Assurance Project Plan
RAA	Remedial alternatives analysis
RAM	Response Action Memorandum
RAR	Removal Action Report
SAP	Sampling and Analysis Plan
SCP	Hawai'i State Contingency Plan
SDAR	HEER Office Site Discovery, Assessment and Remediation Section
TBC	To-Be-Considered
TGM	Technical Guidance Manual
TMK	Tax Map Key
UECA	Uniform Environmental Covenants Act (HRS, Chapter 508C)
USGS	United States Geological Survey

UTM
VRP

Universal Transverse Mercator
HEER Office Voluntary Response Program



TGM for the Implementation of the Hawai'i State Contingency Plan

Section 18.0

REPORT FORMATS AND CONTENT GUIDELINES

18.0 REPORT FORMATS AND CONTENT GUIDELINES

This section presents recommended format and content guidelines for planning, documentation, decision-making, and management document submittals under the Hawai'i State Contingency Plan (Hawai'i SCP) (Hawai'i Administrative Rules [HAR] 11-451). The objective of these guidelines is to produce clear, complete, easily-interpreted documentation of environmental response activities conducted under the Hawai'i SCP. This guidance promotes consistency in reporting, which expedites the review and approval process conducted by the Hawai'i Department of Health (HDOH) Hazard Evaluation and Emergency Response (HEER) Office.

In conjunction with this guidance, follow the **systematic planning approach** presented in [Section 3](#). Reporting needs will vary depending on investigation and response complexity (e.g., remedial vs. removal actions) and other factors; report outlines presented in this Section should not be viewed as required "fill in the blank" templates. The HEER Office acknowledges a variety of existing report contents/formats used by environmental consultants and does not require a single specific report template. Rather, the detailed guidance presented throughout the Technical Guidance Manual (TGM) should be closely reviewed and followed during development of report submittals. Report outlines within this Section provide guidance to assure that necessary report elements are included in submitted reports.



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Section 18.1

GENERAL GUIDELINES AND TIPS

18.1 GENERAL GUIDELINES AND TIPS

The following guidelines generally apply to all reports submitted to the HEER Office. Additional report-specific requirements follow in [Subsections 18.4](#) and [18.5](#).

Signature: Final reports should be signed by the responsible consultant and the Potentially Responsible Part (PRP) (or their designated representative).

Page numbering and labeling: Number and label all document pages, especially when including pages from another document, for example when appending pages copied from another document.

Print quality: For printed documents, submit reports that are legibly and clearly printed. If using an image that was originally in color, then present it in color, not as a black-and-white copy. Label and caption all maps, figures, graphs, diagrams, and photographs, and indicate sources (filenames if applicable).

Paper size: For printed documents, where practicable, use 8.5"x11" sized paper. If larger sheets are used, they should be folded so that they can be stored within 8.5"x11" sized hard copies.

Binding: For printed documents, where practicable, use compact binding methods to optimize document storage capacity. For example, documents bound with three-ring binders do not fit into expandable file folders since they are wider and taller than the 8.5"x11" sheets they hold, whereas documents bound with same-sized report covers take up less space for storage.

Maps and Figures: Include a scale bar and a North arrow on all maps. Please orient maps so that North is at the top of the sheet where practicable.

When presenting multiple maps of the same area to show different data sets, such as different chemicals at a site, or the same chemical at different times at the site, use the same scale and extent for all maps to make it easier to compare one map to another (unless a detail view is intended).

When presenting a figure generated by software interpolation or extrapolation, for example contaminant concentrations generated by a contour mapping program, please identify the software program used on the figure or in the accompanying text.



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Section 18.2

ELECTRONIC DOCUMENTS

18.2 ELECTRONIC DOCUMENTS

Electronic documents offer many advantages over paper, as they can be easily searched, indexed, analyzed, and transmitted. They also take up less room, conserving physical office space. The HEER Office is in the process of converting its existing printed document archives to electronic format.

Effective January 1, 2010, the HEER Office requests that all new detailed report documents be submitted in electronic format on permanent physical storage media [e.g., compact-disc (CD) or digital video disk (DVD)] where practical. Please check with the project manager to see if there are parts of the documents, such as large graphics, that should also be submitted in hard copy form. Document submittals via email or File Transfer Protocol (FTP) are also being considered by the HEER Office, and procedures will be announced when this is generally available.

18.2.1 GENERAL ELECTRONIC REPORT GUIDELINES

Where practicable, present the entire report as a single Portable Document Format (PDF) file, so that a complete and accurate duplicate of all pages of the original paper report can be reproduced solely from the PDF file, including all figures, graphs, pages with handwritten signatures or entries, etc. Geographical Information System (GIS) maps and other images should also be presented in their native formats as discussed below. Text in the PDF file should be searchable, where that option is available (depending on the underlying source). Reports may be split into multiple PDF files for practical reasons. For example, many email systems limit attachment size; also, it may be appropriate to separate the main body of a report from lengthy appendices.

18.2.2 MAP DATA

Electronic maps are managed by GIS software programs that link maps to computer databases. GIS software stores, manages, analyzes, and displays spatial data. Use of GIS to manage environmental cleanup site data can greatly improve report clarity and enhance data interpretation. The HDOH GIS platform is ArcGIS (currently version 9.3).

- Submit files in formats readable by ArcGIS 9.3, preferably as .mdx or .shp files. Project the data in North American Datum 1983 (NAD83) Universal Transverse Mercator (UTM) Zone 4N, in units of meters.
- Be sure to georeference all computer-aided design (CAD) files used for mapping purposes.
- Extensive basemap data, including coastlines, roads, aerial and satellite images, Tax Map Key (TMK) parcels, streams, aquifer classifications, etc. are available from the [Hawai'i Statewide GIS Program](#) and the United States Geological Service (USGS) [Hawai'i Data Clearinghouse](#).

18.2.3 PHOTOGRAPHS, DIAGRAMS, AND OTHER IMAGES

Include photographs and similar images as separate files in their native formats as well as embedding them in the PDF report. Label and caption all photos. Image files should be named in a manner that matches the labeling in the report. For example, if a photograph is labeled "Figure 3" in the report, then the photo's corresponding image file might be "figure03.jpg".

18.2.4 CHEMICAL DATA

In addition to displaying tabular data (such as chemical data results tables) in the PDF report, include the tables as separate files in spreadsheet or comma separated values (CSV) formats as well, to facilitate data assessment. Name the data files in a manner that matches the labeling in the report.

Modern analytical laboratories generate and store environmental sample data using laboratory information management systems (LIMS). LIMS developed by different instrument manufacturers may be inconsistent and incompatible. Data standards to facilitate the exchange of chemical data are under development. The HEER Office is exploring the feasibility of developing a system to manage electronic data deliverables for chemical data at cleanup sites but has not yet established such a system for submittals.



TGM for the Implementation of the Hawai'i State Contingency Plan Section 18.3 TYPES OF DOCUMENTS, REPORTS AND FORMS

18.3 TYPES OF DOCUMENTS, REPORTS AND FORMS

Several types of documents, reports, and forms are used during the Hawai'i SCP release response process. In preparing documentation, several basic questions should be considered. For example, hazardous substance releases vary greatly in size, impact, and complexity, but the same essential questions are asked about every release and every response action:

- What hazardous substance was released? Where did it go in the environment?
- Did you look for the right things, in the right places, using the right methods?
- Could the release pose an environmental hazard? What kind of environmental hazard, and under what circumstances?
- What are the possible cleanup actions you could take to address these hazards?
- What cleanup action did you choose to do? Why did you choose that action?
- Was your cleanup successful? How did you measure your success? What was your cleanup objective, and did you meet it?
- Did you leave any hazardous substances onsite after completion of the cleanup? If so, what and where are they, and what should be done about them?

The documentation of a response action should address all of these questions. The level of detail needed to do so will vary greatly depending on the specific circumstances of each hazardous substance release.

In emergency response removal actions, due to the urgent threats posed by these releases, there is little opportunity for formal review and consultation with other parties prior to decision-making. Many of these questions are addressed informally, often with pre-established decisions for specific scenarios, and simply documented after the fact (see [Section 2.3](#)).

In non-emergency environmental cleanups (site investigations, removal actions, or remedial actions), these questions should be addressed in detail. Reports should explain the objectives, methods, and results in enough detail to be clearly understandable by the HEER Office and provide adequate documentation and support for investigation and cleanup decisions. If reports are poorly documented, decisions cannot be supported by the HEER Office regardless of how appropriate and well-executed the investigation or response may have been.

The primary Hawai'i SCP reports and forms are listed below. Suggested outlines for each, as well as applicable forms, are presented in [Subsection 18.5](#).

- Release Notification Report
- Site Prioritization Form*
- Response Action Determination Form*
- Removal Action Plan
- Removal Action Report
- Public Notice for Removal Action Report
- Sampling and Analysis Plan (SAP)
- Quality Assurance Project Plan (QAPP)
- Site Investigation Report
- Environmental Hazard Evaluation
- Remedial Investigation Report
- Remedial Alternatives Analysis (RAA) Report
- Response Action Memorandum (RAM)*
- Public Notice for Draft Response Action Memorandum
- Remedial Action Work Plan
- Remedial Action Report
- Environmental Hazard Management Plan
- "No Further Action" Letter*
- "No Further Active Remediation" Letter*
- Voluntary Response Program Letter of Completion*

* These forms, memoranda, or letters are the responsibility of the HEER Office to document official HEER Office decisions. However, they may be utilized by consultants/PRPs as planning tools.

Supporting Hawai'i SCP documents and forms include:

- Soil Boring Log
- Monitoring Well Installation Log
- Monitoring Well Abandonment Form
- Voluntary Response Program Application
- Environmental Covenant
- Removal or Remedial Action Fact sheets



TGM for the Implementation of the Hawai'i State Contingency Plan Section 18.4 COMMON REPORT ELEMENTS

18.4 COMMON REPORT ELEMENTS

This section presents several common report elements to be included in many of the documents used in the Hawai'i SCP release response process.

18.4.1 BASIC IDENTIFYING INFORMATION

Include basic identifying information in the various types of documents. Basic identifying information includes the following:

Document information

- Document title
- Document date
- Document preparer (include signature of preparer and PRP on Final Documents)

Facility/Site information

- Facility/Site name
- Administrative information
 - Facility/Site PRP: company name, mailing address
 - Facility/Site contact person: name, mailing address, phone, email
- Physical location
 - Facility/Site location address: street address, city, state, ZIP code
 - Facility/Site tax map key parcel(s)
 - Facility/Site map coordinates

Hazardous substance release information

- HEER release IDentity (ID) Number (if applicable)
- Hazardous substance information
 - names of hazardous substances released
 - quantities (or estimates) of hazardous substances released

18.4.2 SITE BACKGROUND

Site background information is necessary in several of the documents. Site background information generally includes the following:

Site Description

- Climate
- Soils/Geology/Hydrology
- Surface Water
- Groundwater (including location of drinking water and other known wells on or near to the site)

Historic Land Use

Sources of information to determine historic land use, include, but are not limited to, aerial photographs, Sanborn fire insurance maps, street directories, title information, newspaper archives, and interviews.

Current Land Use

- Site Owners
- Site Occupants
- Site Zoning
- Conceptual Site Model

Conceptual Site Model

The Conceptual Site Model is prepared during the first step of **systematic planning** as a comprehensive representation of site environmental conditions with respect to recognized or potential environmental hazards. Exposure pathways to human and ecological receptors are indicated in the Conceptual Site Model. See [Section 3.3](#) for a detailed discussion of Conceptual Site Models.

18.4.3 HEALTH AND SAFETY PLAN

Hawai'i SCP hazardous substance release sites generally fall under the definition of "uncontrolled hazardous waste sites" pursuant to Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Title 29 Code of Federal Regulations (CFR) Section 1910.120(a)(1). A health and safety plan (HASP) is required under Title 29 CFR, Section 1910.120, which includes a requirement for a hazard communication program meeting the requirements of 29 CFR 1910.1200, adopted by HAR Title 12, Chapters 60 and 203.1, Division of Occupational Safety and Health Standards. See [Section 3.6.3](#) for more information regarding Health and Safety Plans.



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Section 18.5

DOCUMENT OUTLINES

18.5 DOCUMENT OUTLINES

This section presents suggested outlines for the documents and reports used in the Hawai'i SCP release response process, as well as the applicable forms.

18.5.1 RELEASE NOTIFICATION REPORT (FOR EMERGENCY RESPONSES)

If a spill or release of hazardous substances exceeds a threshold quantity referred to as the "reportable quantity" (see [Section 2, Appendices 2-A](#), through [2-D](#)), you must immediately verbally notify the HEER Office, your County Fire Department, your local County Emergency Planning Committee (LEPC), and the National Response Center (NRC), as required by the Hawai'i SCP. NRC notification is not required for releases of oil or for trichloropropane. See [Section 2.3](#) for additional information regarding emergency response actions for sudden, accidental releases.

A written follow-up notice regarding the release must be sent to the state and county contacts noted above (written follow-up not required for the NRC), postmarked no later than 30 days after initial discovery and verbal notification of the release, and sent by certified mail or other means that provides proof of delivery.

The following information is required for both the initial verbal notification and follow-up written Release Notification Report:

- Chemical name of the released hazardous substance
- Approximate quantity released
- Reportable quantity that is basis for notification
- Location of release
- Media / pathway into which release occurred or is likely to occur (e.g. soil, storm drain, or stream)
- Source and cause of the release (what happened?)
- Date, time, and duration of the release
- Date and time that the person in charge became aware of the release
- Name, address and telephone number of the caller
- Name, address and telephone number of the facility owner
- Name and telephone number of a facility contact person
- Response actions taken or planned
- Facility owner's ability to pay for response actions
- Other government agencies that have been notified
- Health risks associated with the release
- Any other relevant information for assessing the hazard posed

The form in [Section 2, Appendix 2-B](#) can be used in preparing the written follow-up notice.

18.5.2 SITE PRIORITIZATION FORM

Sites that are not considered emergencies (e.g., historic releases) and sites that may have been stabilized but not entirely cleaned up following emergency response actions are prioritized by the HEER Office Site Discovery, Assessment and Remediation (SDAR) Section for evaluation and/or response action (HAR 11-451-9(d)). See [Section 2.4.3](#) for additional information regarding site prioritization.

The Site Prioritization Form provides key information used by the HEER Office in evaluating the relative priority given to release or potential release sites. This information includes:

- Site identification information
- Documents or site information sources used for the evaluation
- Whether certain threshold hazard criteria are known or suspected to be exceeded at the site
- A description or discussion of the hazards exceeding threshold criteria
- Final determination of priority ranking (high, medium, low, or No Further Action)
- Name of HEER Office evaluator and date of evaluation

An example Site Prioritization Form is presented below. Note that other environmental hazard factors or considerations, in addition to those listed in the example form below, may be used by the HEER Office to establish a site priority ranking. In addition, the site priority ranking may change over time as additional information about the site is documented during site investigation.

Site Prioritization Form	
Release Identifying Information (Facility/Site Name, Location, Etc.):	
List of documents or site information sources used to make evaluation:	
Determination:	
<ul style="list-style-type: none"> • High Priority 	Signature _____
<ul style="list-style-type: none"> • Medium Priority 	Name _____
<ul style="list-style-type: none"> • Low Priority 	Date _____
<ul style="list-style-type: none"> • No Further Action 	
Hazard Threshold Criteria	Check if Applicable
Actual or probable release to groundwater that is a drinking water supply	
Actual or probable release to surface water that is a drinking water supply	
Actual or probable release to air that poses a threat to public health	
Actual or probable release to and extensive contamination of soil that poses a direct contact hazard due to uncontrolled facility access	
Actual or probable existence of uncontrolled hazardous substances, pollutants, or contaminants, such as leaking containers or impoundments, that pose a direct contact hazard due to uncontrolled facility access	
Actual or probable adverse impact to natural resources	
Actual or probable imminent danger of fire or explosion	
A determination by the director that a facility or vessel poses a substantial endangerment to public health or welfare, the environment, or natural resources	
Discussion	

18.5.3 RESPONSE ACTION DETERMINATION FORM

The HEER Office SDAR Section determines whether a proposed response action for environmental cleanups will be conducted as a removal action or a remedial action based on recommendations made by site environmental consultants, data provided in the site investigation and environmental hazard evaluation reports, and/or additional assessment that may have been required. See [Section 2.4.5.1](#) for additional information regarding Response Action Determinations.

The Response Action Determination Form provides key information used by the HEER Office SDAR Section to determine whether a response action for environmental cleanups will be conducted as a removal action or a remedial action. This information includes:

- Site identification information
- Immediacy of threat, including threat of fire or explosion

- Presence of hazardous substances on-site
- Complexity of site, including extent of contamination, access to contamination, and feasibility of cleanup options
- Conditions that may results in releases of hazardous substances
- Actual/potential human exposures, drinking water contamination
- Name of HEER Office evaluator and date of evaluation

An example Response Action Determination Form is presented below. Determination factors or considerations other than those in the example may be used. In addition, the response action determination may change as additional information about the site is documented during site investigation.

Response Action Determination Form	
Release Identifying Information (Facility/Site Name, Location, Etc.):	
Determination:	Signature: _____
<ul style="list-style-type: none"> • Removal Action 	Name: _____
<ul style="list-style-type: none"> • Remedial Action 	Date: _____
Determination Factors	Check if Applicable
Immediacy of the threat	
Planning time (including site characterization)	
Implementation time	
Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances, pollutants or contaminants	
Actual or potential contamination of drinking water supplies or sensitive ecosystems	
Hazardous substances, pollutants, or contaminants in drums, barrels, tanks, or other bulk storage containers, that pose or may pose a threat of release	
High levels of hazardous substances, pollutants, or contaminants in soils largely at or near the surface, that may migrate	
Weather conditions that may cause a release of hazardous substances, pollutants, or contaminants to migrate or be released	
Threat of fire or explosion	
Cost, including the extent to which deferral from removal to remedial action will result in increased cost or increased risk to public health or welfare, the environment, or natural resources	
Community interest	
Site complexity (e.g. extent of release, accessibility, feasibility of cleanup options)	
Availability of other appropriate federal, state, county, or private response mechanisms to respond to the release	
Other situations or factors that may pose an imminent and substantial endangerment to public health or welfare, the environment, or natural resources	
Discussion	

18.5.4 REMOVAL ACTION WORK PLAN

The Removal Action Work Plan typically is completed prior to initiating a removal action; however, this may not be possible in the case of emergency response. See [Section 2.3](#) and [Section 14](#) for additional information on removal actions. The following is a suggested outline for a Removal Action Work Plan.

Outline for a Removal Action Work Plan	
1.0	Introduction and Purpose
2.0	Background
2.1	Site Description
2.1.1	Climate
2.1.2	Soils/Geology
2.1.3	Surface Water
2.1.4	Groundwater
2.2	Current/Future Land Use
2.3	Applicable Tier 1 Environmental Action Levels
2.4	Efforts by HDOH to Obtain Response by Other Parties (if appropriate)
3.0	Description of Release/Threat of Release
3.1	Situation Preceding Decision to Conduct Removal
3.2	Applicable Remedial Action Levels
4.0	Removal Action Tasks
4.1	Removal Action Alternatives Considered
4.2	Description of the Removal Action
4.3	Project Goal
4.4	Scope of Work
5.0	Description of Sampling Methods for Confirmation Testing of Removal Action
5.1	Soil Sampling Activities
5.2	Groundwater Sampling Activities
5.2	Laboratory Sample Preservation Procedures
5.3	Laboratory Analytical Procedures
5.4	Sample Chain-of-Custody and Transportation
5.5	Sample Identification
5.6	Decontamination Procedures
5.7	List of Equipment, Containers, and Supplies
6.0	Schedule
7.0	References

18.5.5 REMOVAL ACTION REPORT

The Removal Action Report (RAR) presents results of the removal action, based on the Removal Action Work Plan (typical for non-emergency environmental cleanups). Several RAR report elements are the same or very similar to the Removal Action Work Plan, which generally may be edited to include changes made to the planned work, a description of resources expended, results and documentation for confirmation testing. In the case that any hazardous substances remain on site after the removal action (above Tier 1 Environmental Action Levels), the RAR must describe these in detail. For emergency responses, the RAR may be required after the emergency response has been completed (see [Section 2.3](#)). A very important component of any RAR is a summary and analysis of confirmation testing conducted to demonstrate effectiveness of the removal action. See [Section 14](#) for additional information on removal actions. A suggested outline for a RAR is presented on below.

Outline for a Removal Action Report	
1.0	Introduction and Purpose

2.0	Background
2.1	Site Description
2.1.1	Climate
2.1.2	Soils/Geology
2.1.3	Surface Water
2.1.4	Groundwater
2.2	Current/Future Land Use
2.3	Applicable Tier 1 Environmental Action Levels
2.4	Efforts by HDOH to Obtain Response by Other Parties (if appropriate)
3.0	Description of Release/Threat of Release
3.1	Situation Preceding Decision to Conduct Removal
3.2	Applicable Remedial Action Levels
4.0	Removal Action Tasks
4.1	Removal Action Alternatives Considered
4.2	Description of the Removal Action
4.3	Project Goal
4.4	Scope of Work
4.5	Resources Expended
5.0	Description of Sampling Methods for Confirmation Testing of Removal Action
5.1	Soil Sampling Activities
5.2	Groundwater Sampling Activities
5.3	Laboratory Sample Preservation Procedures
5.4	Laboratory Analytical Procedures
6.0	Analytical Results of Confirmation Testing
6.1	Analytical Results of Soil Samples
6.2	Analytical Results of Groundwater Samples
6.3	Analytical Results of Waste Samples
6.4	Waste Profiling
7.0	Description of Hazardous Waste Remaining On-Site (if applicable)
8.0	Conclusions and Recommendations
9.0	References

18.5.6 PUBLIC NOTICE FOR A REMOVAL ACTION

When a removal action option has been selected for environmental cleanups, the HEER Office may require public notice and a public comment period, particularly if significant public concern has been expressed, is likely, or is perceived by the HEER Office. In these cases, any public comment would be carefully considered and addressed, as appropriate, before making a final decision on the appropriate response action. In the case of emergency response removal actions, or if a non-emergency removal action has proceeded due to unique circumstances, the public notice is typically published after the removal action has been initiated or conducted. See [Section 2.4.5.2](#), [Section 2.4.6](#), and [Section 14](#) for more information regarding Removal Actions.

The public notice provides key information to inform the public and assist in evaluating the proposed removal action, including:

- Site identification information
- Hazardous substances and media being addressed
- Availability of key site documents
- Availability of a "fact sheet" or an executive summary document containing concise information on the site and response action proposed, with contact number/e-mail to request

- Solicitation of written or oral comments on the proposed response action within the specified public comment period of at least 30 days, the address and e-mail to send comments; whom to call with questions
- Date, time, and location of public meeting, if scheduled

A sample public notice is presented below.

(Example Public Notice for a Removal Action)

Notice of Proposed Removal Action
SITE NAME
ADDRESS, CITY, STATE, ZIP
TMK

On or about **RELEASE DATE**, a release of **HAZARDOUS SUBSTANCES** to the environment as a result of **CAUSE OF THE RELEASE** occurred at the **SITE**, located at **ADDRESS, CITY, STATE, ZIP, TMK**. A removal action pursuant to HAR 11-451-13 was conducted to clean up contaminated **MEDIA** at the site.

[DETAILS OF THE CLEANUP]

Pursuant to Hawai'i Administrative Rules 11-451-13(f), a Removal Action Work Plan detailing the proposed Removal Action is available for public review and comment. HDOH is accepting comments on the Removal Action Work Plan for 30 days.

The Removal Action Work Plan, as well as supporting documentation, is available for review online at **URL**. The Removal Action Work Plan and supporting documentation may also be reviewed at HDOH offices at 919 Ala Moana Boulevard #206, Honolulu, HI 96814. To arrange for a review date, please contact **RPM NAME**, the HEER Office project manager for the site, at (808) 586-4249 or **RPM EMAIL**. Oral and written comments on the Removal Action Work Plan will be accepted through **COMMENT DEADLINE**. Written comments should be mailed to the Office of Hazard Evaluation and Emergency Response, Hawai'i Department of Health, 919 Ala Moana Boulevard #206, Honolulu, HI 96814, or faxed to (808) 586-7357.

18.5.7 SAMPLING AND ANALYSIS PLAN (SAP)

The Sampling and Analysis Plan (SAP) designates the types and quantities of samples or monitoring information to be collected; where, when and under what conditions they should be collected; the variables to be measured; and the Quality Assurance/Quality Control (QA/QC) procedures to ensure that sampling design and measurement errors meet the specified Data Quality Objectives (DQOs).

Sampling and Analysis Plans are prepared for a variety of environmental investigations ranging in complexity from preliminary to highly detailed. However, not every project will require submittal of a formal sampling plan and related reports prior to initiating site investigation activities; this should be discussed with a project manager in the HEER Office. See [Section 3.6](#) for additional information regarding Sampling and Analysis Plans. A suggested outline for a Sampling and Analysis Plan is presented below.

Outline for a Sampling and Analysis Plan	
1.0	Introduction and Purpose
2.0	Background
2.1	Site Description
2.1.1	Climate
2.1.2	Soils/Geology
2.1.3	Surface Water
2.1.4	Groundwater
2.2	Historic Land Use

- 2.3 Current/Future Land Use
- 2.4 Conceptual Site Model
- 3.0 Investigation History**
- 4.0 Site Investigation Objectives/ Data Quality Objectives**
 - 4.1 Problem Statement
 - 4.2 Identify Objectives and Chemicals of Potential Concern
 - 4.3 Identify Data Information Needs
 - 4.4 Define the Decision Units
 - 4.5 Decision Statements
 - 4.6 Statistics for Data Evaluation
- 5.0 Scope of Work**
 - 5.1 Surface Soil Investigation
 - 5.2 Subsurface Soil Investigation
 - 5.3 Groundwater Investigation
 - 5.4 Soil Vapor Investigation
 - 5.5 Summary of Environmental Samples
- 6.0 Description of Sampling Activities**
 - 6.1 Surface Soil Sampling Activities
 - 6.2 Subsurface Soil Sampling Procedures
 - 6.3 Groundwater Sampling Procedures
 - 6.4 Soil Gas Sampling Procedures
 - 6.5 Laboratory Sample Preservation Procedures
 - 6.6 Laboratory Analytical Procedures
 - 6.7 Sample Chain-of-Custody and Transportation
 - 6.8 Sample Identification
 - 6.9 Decontamination Procedures
 - 6.10 List of Equipment, Containers, and Supplies
 - 6.11 Investigation Derived Waste
- 7.0 Quality Assurance/Quality Control Plan**
 - 7.1 Quality Assurance/Quality Control Data Objectives
 - 7.2 7.2 Chain of Custody Maintenance
 - 7.3 Calibration Procedures and Frequency
 - 7.3.1 Field Equipment Calibration
 - 7.3.2 Laboratory Instrument Calibration
 - 7.4 Data Reduction and Validation
 - 7.5 Field Quality Control Checks
 - 7.5.1 Field Replicates Collection
 - 7.5.2 Field Replicates Evaluation
 - 7.6 Laboratory Quality Control Checks
 - 7.6.1 Method Blank
 - 7.6.2 Laboratory Control Sample
 - 7.6.3 Matrix Spike/Matrix Spike Duplicate
 - 7.6.4 Surrogate Spike
 - 7.7 Preventative Maintenance
 - 7.8 Data Quality Assessment

	7.8.1	Accuracy
	7.8.2	Precision
	7.8.3	Completeness
	7.8.4	Determining if Data Meets DQOs
	7.9	Corrective Action
8.0		Documentation and Reporting
	8.1	Field Documentation
	8.2	Investigation Report
9.0		Schedule
10.0		Health and Safety Plan
11.0		References

18.5.8 QUALITY ASSURANCE PROJECT PLAN (QAPP)

The Quality Assurance Project Plan (QAPP) specifies the operational procedures and QA/QC requirements for obtaining environmental data of sufficient quantity and quality to satisfy site investigation objectives. The QAPP is required for all data collection activities that generate data for use in decision-making. See [Section 3.7](#) for additional information regarding QAPPs. The QAPP is typically presented as part of the Sampling and Analysis Plan. The suggested outline for the QAPP is presented as Section 7.0 of the Sampling and Analysis Plan outline in [Section 18.5.7](#).

18.5.9 SITE INVESTIGATION REPORT

The Site Investigation Report presents accurate and thorough documentation of the sample plan design, sample collection and handling procedures, laboratory analyses, data assessment, and a summary of the data collected. See [Section 3.9](#) for additional information regarding Site Investigation Reports. A suggested outline for a Site Investigation Report is presented below.

Outline for a Site Investigation Report	
1.0	Introduction and Purpose
2.0	Background
	2.1 Site Description
	2.1.1 Climate
	2.1.2 Soils/Geology
	2.1.3 Surface Water
	2.1.4 Groundwater
	2.2 Historic Land Use
	2.3 Current Land Use
	2.4 Conceptual Site Model
3.0	Summary of Investigation History
4.0	Summary of Data Quality Objectives
5.0	Field Activities
	5.1 Selection of DUs
	5.2 Surface Soil Sampling Activities
	5.3 Subsurface Soil Sampling Activities
	5.4 Groundwater Sampling Activities
	5.5 Soil Vapor Sampling Activities
	5.6 Summary of Environmental Samples
6.0	Sample Control Procedures
	6.1 Sample Containers and Preservation
	6.2 Chain of Custody
	6.3 Laboratory Analytical Methods

7.0	Field Observations during Sampling
7.1	Surface Soil Sampling Observations
7.2	Subsurface Soil Sampling Observations
7.3	Groundwater Sampling Observations
7.4	Soil Gas Sampling Observations
6.5	Laboratory Sample Preservation Procedures
8.0	Data Quality
8.1	Laboratory Quality Control
8.1.1	Surface Soil Samples
8.1.2	Subsurface Soil Samples
8.1.3	Groundwater Samples
8.1.4	Soil Gas Samples
8.2	Field Quality Control
8.3	Field Replicates Analyses and Summary
8.4	Field Data Quality Assessment
8.5	Conclusions
9.0	Analytical Results
9.1	Surface Soil Sampling Analytical Results
9.2	Subsurface Soil Sampling Analytical Results
9.3	Groundwater Sampling Analytical Results
9.4	Soil Gas Sampling Analytical Res
10.0	Summary of Results and Extent and Magnitude of Contamination
10.1	& Surface Soil
10.2	& Subsurface Soil
10.3	& Groundwater
10.4	& Soil Gas
11.0	Environmental Hazard Evaluation
	(see Subsection 18.5.10 below for details. This may be a separate document, especially for more complex sites)
12.0	Conclusions and Recommendations
13.0	References

18.5.10 ENVIRONMENTAL HAZARD EVALUATION

Environmental Hazard Evaluation is the link between site investigation and response action. The Environmental Hazard Evaluation may be prepared as a stand-alone document or as part of the Site Investigation or Remedial Investigation Reports. See [Section 3.10](#) and [Section 13](#) as well as the HDOH document *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater (HDOH, 2016)* for a detailed discussion of Environmental Hazard Evaluation. A suggested outline is presented on the following page.

Outline for an Environmental Hazard Evaluation	
1.0	Introduction and Purpose
2.0	Background
2.1	Site Description
2.1.1	Climate
2.1.2	Soils/Geology
2.1.3	Surface Water
2.1.4	Groundwater

2.2	Historic Land Use
2.3	Current/Future Land Use
2.4	Conceptual Site Model
3.0	Chemicals of Potential Concern
4.0	Decision Units
5.0	Summary of Data Representativeness
6.0	Magnitude and Extent of Contamination
7.0	Description of the Environmental Hazard Evaluation Process
8.0	Potentially Applicable Tier 1 Environmental Action Levels
9.0	Targeted Tier 1 EALs and Comparison to Site Data
9.1	Targeted Tier 1 Soil EALs
9.2	Comparison of Targeted Soil EALs to Site Data
9.3	Targeted Tier 1 Groundwater EALs
9.4	Comparison of Selected Groundwater EALs to Site Data
9.5	Targeted Tier 1 Soil Gas EALs
9.6	Comparison of Selected Soil Gas EALs to Site Data
10.0	Environmental Hazards
10.1	Potential Human/Ecological Receptors
10.2	Potential Exposure Pathways
10.3	Potential Environmental Hazards
10.4	Targeted Environmental Hazards
11.0	Maps of Areas with Contaminants above Tier 1 EALs (or acceptable alternative action levels) and Associated Environmental Hazards
12.0	Conclusions and Recommendations
13.0	References

18.5.11 REMEDIAL INVESTIGATION REPORT

A remedial investigation is typically an additional site investigation that focuses on more sampling to further delineate contaminant distribution, identify likely remedial action options and applicable technologies (including the presumptive remedies demonstrated to work well in similar circumstances), or fill data gaps related to remedial alternatives that are important for decision-making. Similar to a Site Investigation Report, a Remedial Investigation Report presents accurate and thorough documentation of the sample plan design, sample collection and handling procedures, laboratory analyses, data assessment, and a summary of the data collected. The Site Investigation Report outline presented in [Section 18.5.9](#) also applies for a Remedial Investigation Report.

18.5.12 REMEDIAL ALTERNATIVES ANALYSIS (RAA) REPORT

The Remedial Alternatives Analysis (RAA) Report provides a comparison of various remedial strategies. Typically, at least five strategies (including a "no action" strategy) are initially selected and analyzed, with at least three of the strategies judged most appropriate then presented and compared in detail in the RAA report. Primary considerations in weighing the strengths and weaknesses of remedial alternatives include:

- Effectiveness
- Technological and Administrative Feasibility
- Cost

Based on these considerations, comparisons, and associated information, a preferred or preliminary remedial alternative is selected for the site and documented in the RAA Report. See [Section 16](#) for additional information regarding RAA Reports. A suggested outline for a RAA Report is presented below.

Outline for a Remedial Alternatives Analysis Report

- 1.0 Introduction and Purpose**
- 2.0 Background**
 - 2.1 Site Description
 - 2.1.1 Climate
 - 2.1.2 Soils/Geology
 - 2.1.3 Surface Water
 - 2.1.4 Groundwater
 - 2.2 Historic Land Use
 - 2.3 Current/Future Land Use
 - 2.4 Conceptual Site Model
- 3.0 Magnitude and Extent of Contamination**
 - 3.1 Contaminant Fate and Transport
- 4.0 Environmental Hazards Evaluation**
 - 4.1 Chemicals of Potential Concern
 - 4.2 Exposure Setting
 - 4.3 Potential Human/Ecological Receptors
 - 4.4 Exposure Pathway Analysis
 - 4.5 Environmental Hazard Evaluation Summary
- 5.0 Establishing Alternatives**
 - 5.1 Introduction
 - 5.2 Potentially Applicable or Relevant and Appropriate Requirements (ARARs) and To-Be-Considered (TBC) criteria
 - 5.2.1 Potential Chemical-Specific ARARs and TBCs
 - 5.2.2 Potential Location-Specific ARARs and TBCs
 - 5.2.3 Potential Action-Specific ARARs and TBCs
 - 5.3 Remedial Action Objectives
 - 5.4 General Response Actions
- 6.0 Detailed Analysis of Alternatives**
 - 6.1 Alternative 1: No Action
 - 6.2 Alternative 2
 - 6.3 Alternative 3
 - 6.4 Alternative 4
 - 6.5 Alternative 5
- 7.0 Comparative Analysis of Remedial Alternatives**
 - 7.1 Overall Protectiveness
 - 7.2 Compliance with ARARs
 - 7.3 Reduction of Toxicity, Mobility, and Volume through Treatment
 - 7.4 Long-Term and Short-Term Effectiveness
 - 7.5 Implementability
 - 7.6 Estimated costs
- 8.0 Preferred Alternative**

18.5.13 RESPONSE ACTION MEMORANDUM (RAM)

A Draft Response Action Memorandum (RAM) is written first, for public review and comment. The Draft Response Action Memorandum (Draft RAM) is a concise summary of site investigation and environmental hazard data, supplemental remedial investigation data (if obtained), the remedial alternatives analysis, and the preliminary remedial alternative selected for the site. See elements 1.0 through 5.0 in the Outline for Final Response Action Memorandum in [subsection 18.5.13.2](#) below for a recommended report format for a Draft RAM.

18.5.13.1 PUBLIC NOTICE FOR DRAFT RESPONSE ACTION MEMORANDUM

The Draft RAM is a HEER Office document intended for review and public comment. A public notice must be published regarding availability of the Draft RAM and a minimum 30-day comment period provided for review. See [Section 16](#) for additional information regarding the Draft RAM and [Subsection 2.4.6.1](#) for additional information regarding public notices.

The public notice (published in the newspaper and provided to interested parties) provides key information to inform the public and assist in evaluating the proposed response action, including:

- Site identification information
- Hazardous substances and media being addressed
- Availability of the Draft RAM (and other key site documents)
- Availability of a "fact sheet" or an executive summary document containing concise summary information on the site and response action proposed, with contact number/e-mail to request
- Solicitation of written or oral comments on the proposed response action within the specified public comment period of at least 30 days, the address and e-mail to send comments; whom to call for questions
- Date, time, and location of the public meeting, if scheduled

A sample public notice regarding the Draft RAM is provided below.

(Example Public Notice for Draft RAM)

Notice of Proposed Remedial Action

SITE NAME
ADDRESS, CITY, STATE, ZIP
TMK

The Hawai'i Department of Health (HDOH) is proposing a cleanup remedy for the **SITE** located at **ADDRESS, CITY, STATE, ZIP, TMK. MEDIA** at the site are contaminated with **HAZARDOUS SUBSTANCES** as a result of **CAUSE OF THE RELEASE. PRP NAME**, who operated the **SITE** and is responsible for the cleanup, has investigated the environmental contamination at the site and evaluated three potential remedies: (1) **REMEDY 1**, (2) **REMEDY 2**, and (3) **REMEDY 3**. Based on recommendations from the site environmental consultant, as well as a review of the site investigation and remedial alternatives reports, HDOH has tentatively selected the third remedial option, **REMEDY 3**.

Pursuant to Hawai'i Administrative Rules 11-451-15(i), a draft Response Action Memorandum detailing this proposed remedy is available for public review and comment. HDOH is accepting comments on the draft Response Action Memorandum for 30 days, after which HDOH will evaluate all comments received and make a final remedy selection decision for the site.

The Draft Response Action Memorandum, as well as supporting documentation, is available for review online at **URL**. The draft Response Action Memorandum and supporting documentation may also be reviewed at the **LIBRARY NAME** public library located at **LIBRARY ADDRESS** or at the HDOH offices at 919 Ala Moana Boulevard #206, Honolulu, HI 96814. To arrange for a review date at the HDOH offices, please contact **RPM NAME**, the HDOH remedial project manager for the site, at (808) 586-4249 or **RPM EMAIL**. Oral and written comments on the draft Response Action Memorandum will be accepted through **COMMENT DEADLINE**. Written comments should be mailed to the Office of Hazard Evaluation and Emergency Response, Hawai'i Department of Health, 919 Ala Moana Boulevard #206, Honolulu, HI 96814, faxed to (808) 586-7357, or emailed to **RPM EMAIL**.

18.5.13.2 FINAL RESPONSE ACTION MEMORANDUM

A Final RAM documenting the final remedial alternative approved by the HEER Office for the site is provided after completion of the public comment period on the Draft RAM. All public comments are considered and addressed, as appropriate, in the Responsiveness Summary section of the Final RAM. See [Section 16](#) for additional information regarding the RAM. A suggested outline for a Final RAM is provided below.

Outline for a Final Response Action Memorandum	
1.0	Site Location and Description
1.1	Site Description
1.2	Site Background
1.3	Investigation History
1.4	Magnitude and Extent of Contamination
1.5	Current/Future Land Use
2.0	Environmental Hazard Evaluation
2.1	Chemicals of Potential Concern
2.2	Exposure Setting
2.3	Potential Human/Ecological Receptors
2.4	Exposure Pathway Analysis
2.5	Environmental Hazard Evaluation Summary
3.0	Remedial Strategy
3.1	Development of Remedial Action Objectives
3.1.1	Applicable Remedial Action Levels
3.1.2	Remedial Action Objectives
3.2	Estimation of Soil Volumes Needing Remedial Action
3.3	General Response Actions
3.4	Development of Remedial Alternatives
4.0	Evaluation of Remedial Action Alternatives
5.0	Proposed Remedy
6.0	Descriptions and Rationale for Modifications from Proposed Remedy (if any)
7.0	Final Remedy Selected
8.0	Responsiveness Summary (specific responses to public comments)
9.0	References

18.5.14 REMEDIAL ACTION WORK PLAN

A Remedial Action Work Plan is required to document the proposed approach to implement the selected remedial action. A very important component of any Remedial Action Work Plan is a detailed plan for representative confirmation testing to demonstrate effectiveness of the remedial action in reducing contaminant levels below Tier 1 EALs. See [Section 16](#) for more information regarding Remedial Actions. The suggested outline for the Remedial Action Work Plan is presented below.

Outline for a Remedial Action Work Plan	
1.0	Introduction and Purpose
2.0	Background
2.1	Site Description
2.1.1	Climate
2.1.2	Soils/Geology
2.1.3	Surface Water
2.1.4	Groundwater

2.2	Current/Future Land Use
2.3	Conceptual Site Model
2.4	Nature and Extent of Contamination
2.5	Applicable Remedial Action Levels
3.0	Summary of the Environmental Hazard Evaluation
4.0	Remedial Action Tasks
4.1	Description of the Selected Remedial Alternative
4.2	Project Goal
4.3	Remedial Approach
4.4	Scope of Work
5.0	Description of Confirmation Sampling Activities
5.1	Chemicals of Potential Concern
5.2	Decision Units for Confirmation Sampling
5.3	Field replicate sampling and evaluation
5.4	Soil Sampling Activities
5.5	Groundwater Sampling Activities
5.6	Laboratory Sample Preservation Procedures
5.7	Laboratory Analytical Procedures
5.8	Sample Chain-of-Custody and Transportation
5.9	Sample Identification
5.10	Decontamination Procedures
5.11	List of Equipment, Containers, and Supplies
5.12	Investigation Derived Waste
6.0	Schedule
7.0	References

18.5.15 REMEDIAL ACTION REPORT

The Remedial Action Report presents accurate and thorough documentation of the Remedial Action. See [Section 16](#) for additional information regarding remedial actions. A suggested outline for a Remedial Action Report is presented below.

Outline for a Final Remedial Action Report	
1.0	Introduction and Purpose
2.0	Background
2.1	Site Description
2.1.1	Climate
2.1.2	Soils/Geology
2.1.3	Surface Water
2.1.4	Groundwater
2.2	Current/Future Land Use
2.3	Conceptual Site Model
2.4	Nature and Extent of Contamination
2.5	Applicable Remedial Action Levels
3.0	Summary of the Environmental Hazard Evaluation
4.0	Remedial Action Tasks
4.1	Description of the Selected Remedial Alternative
4.2	Project Goal

4.3	Remedial Approach/Design
4.4	Scope of Work
4.5	Construction Details
4.6	Field Observations during Remedial Action Activities
5.0	Operation and Maintenances
6.0	Confirmation Sampling Activities
6.1	Soil Sampling Activities
6.2	Groundwater Sampling Activities
6.3	Sample Control Procedures
6.3.1	Sample Containers and Preservation
6.3.2	Chain of Custody
6.3.3	Laboratory Analytical Methods
6.4	Data Quality
7.0	Confirmation Sampling Analytical Results
7.1	Field Replicates Evaluation
7.2	Laboratory QA/QC Data Evaluation
8.0	Post-Remedial Environmental Hazards
9.0	Conclusions and Recommendations
10.0	References

18.5.16 ENVIRONMENTAL HAZARD MANAGEMENT PLAN

If contaminated media is left on-site after the response action is completed, an Environmental Hazard Management Plan (EHMP) must be prepared to manage environmental hazards identified in the Environmental Hazard Evaluation over the long-term. An EHMP presents all necessary information in a single, stand-alone document that identifies the nature and extent of residual contamination, potential environmental concerns posed by the contamination, and appropriate measures to ensure that these concerns are adequately addressed. See [Section 19](#) for additional information regarding EHMPs. A suggested outline for an EHMP is presented below.

Outline for an Environmental Hazard Management Plan	
1.0	Introduction and Purpose
2.0	Background
2.1	Brief Summary of the Site Background and History of Contaminant Releases
2.2	Chemicals of Potential Concern
2.3	Conceptual Site Model
3.0	Clear Map Descriptions of the Extent and Magnitude of Remaining Contamination
	(to scale, with north arrow, and including footprints of any on-site buildings nearby contaminated areas)
4.0	Summary of Potential Environmental Hazards
5.0	Long-Term Monitoring Requirements
6.0	Engineering Controls Requirements
7.0	Institutional Controls Requirements
8.0	Implementation
9.0	Soil and Groundwater Management for Future Site Activities Affecting On-Site Contamination
9.1	Consultation with HEER Office
9.2	Pre-Excavation Evaluation of Soils and Groundwater

9.3	Soil Excavation and Handling
9.4	Soil Stockpiling/Storage
9.5	Soil Disposal
9.6	Groundwater Handling
9.7	Groundwater Disposal
10.0	Exposure Management
10.1	Awareness/Training for Contamination Managed On-Site
10.2	Construction Worker Notifications and Protections
10.3	Use Restrictions to Protect Site Workers, Guests
10.4	Emergency Response for Chemical Exposure
10.4.1	Eye and Skin Exposure to Chemicals
10.4.2	Internal Exposure to Chemicals
10.4.3	Inhalation Exposure to Chemicals
11.0	References

18.5.17 "NO FURTHER ACTION" LETTER

An unrestricted site closure under the Hawai'i SCP (HAR 11-451) is granted as a No Further Action (NFA) letter. A restricted use site closure is granted as a NFA with Restrictions. Once the HEER Office decides that no further action is necessary for a specific release, suspect release, or the successful completion of a response action (either removal or remedial action), a NFA letter will be sent to the responsible party(s). See [Section 19](#) for additional information regarding site closures.

A No Further Action letter includes the following information:

- Site identification information
- Hazardous substances and media being addressed
- List of key site documents reviewed
- Final determination of site (NFA or NFA with Restrictions)
- Description of restrictions (NFA with Restrictions)
- Description and requirement of an Exposure Hazard Management Plan (NFA with Restrictions)
- Name of HEER Office evaluator and date of evaluation

An example NFA Letter is presented below. After issuing the letter, the HEER Office may later require additional action if new information indicates a continuing threat to public health, the environment, or natural resources.

(Example: No Further Action Letter)

Dear [**RESPONSIBLE PARTY, TITLE, COMPANY, ADDRESS**]:
Reference: [**FACILITY/SITE NAME, ADDRESS (TMK)**]

Subject: No Further Action (NFA) Determination at
FACILITY/SITE, ADDRESS

Dear **POINT OF CONTACT**:

We have reviewed [**REPORT(S)**] regarding a release or suspected release of [**HAZARDOUS SUBSTANCE**] at the subject Facility/Site [**PROVIDE ADDITIONAL DETAILS TO IDENTIFY THE RELEASE - DATE, LOCATION, ETC.**].

Based on our review, we have determined that the site currently poses no threat to human health or the environment, and no further action is required in response to this release or suspected release. Please be aware that if future information indicates that contamination is present at the site at levels that pose a threat to

public health, the environment, or natural resources, we may require additional investigative and response actions be performed. Thank you for your cooperation in this matter. Should you have any questions about this letter, please contact [**REMEDIAL PROJECT MANAGER**] at [**PHONE NUMBER**] or [**EMAIL ADDRESS**].

Sincerely,
[**SDAR SECTION SUPERVISOR**
HEER OFFICE]

18.5.18 "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 on-site buildings. If needed, a letter can 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 and that the site has moved into a status of long-term monitoring and management. See [Section 19](#) for additional information regarding site closures.

A No Further Active Remediation Letter is issued by the HEER Office and provides the following information:

- Site identification information
- Hazardous substances and media addressed
- List of key site documents reviewed
- Description of potential future hazards
- Description and requirement of an Exposure Hazard Management Plan
- Final determination of site (No Further Active Remediation)
- Name of HEER Office evaluator and date of evaluation

An example "No Further Active Remediation" Letter is presented below. Note that if future information indicates that contamination present at the site is posing a threat to public health, the environment, or natural resources, the HEER Office may require additional investigative and response actions.

(Example No Further Active Remediation Letter)

Dear [**RESPONSIBLE PARTY, TITLE, COMPANY, ADDRESS**]:
Reference: [**FACILITY/SITE NAME, ADDRESS (TMK)**]

Subject: No Further Active Remediation Determination at **FACILITY/SITE, ADDRESS**

We have reviewed [**REPORT(S)**] regarding a release of [**HAZARDOUS SUBSTANCE**] at the subject Facility/Site [**PROVIDE ADDITIONAL DETAILS TO IDENTIFY THE RELEASE - DATE, LOCATION, ETC.**].

Based on the site investigation and environmental hazard evaluation conducted in [**REPORT(s)**], the release at this site poses no current hazards to public health, the environment, or natural resources. However, potential future hazards may exist if [**DESCRIBE POTENTIAL FUTURE EXPOSURE SCENARIO**]. Implementing your Exposure Hazard Management Plan [**DATE, ATTACHED**] will monitor for and prevent, avoid, or mitigate these hazards.

We have determined that no further active remediation is required in response to this release, assuming that the Exposure Hazard Management Plan [**DATE, ATTACHED**] is properly implemented at the site. However, you should note that if

future information indicates that contamination at this site is posing a threat to public health, the environment, or natural resources, we may require additional investigative and response action to be performed. Thank you for your cooperation in this matter. Should you have any questions about this letter, please contact [**REMEDIAL PROJECT MANAGER**] at [**PHONE NUMBER**] or [**EMAIL ADDRESS**].

Sincerely,
[**SDAR SECTION SUPERVISOR**
HEER OFFICE
:attachment

18.5.19 VOLUNTARY RESPONSE PROGRAM LETTER OF COMPLETION

An unrestricted site closure under the Voluntary Response Program (VRP) (HRS[Hawai'i Revised Statutes (HRS) 128D, Part II]) is granted as a Letter of Completion (LOC). A restricted use site closure is granted as a LOC with Restrictions. The purpose of the Voluntary Response Program is to minimize environmental liability and assure timely HEER Office oversight in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties. See [Section 19](#) for additional information regarding site closures.

A VRP Letter of Completion includes the following information:

- Site identification information
- Legal property description
- Requesting party and prospective purchaser
- List of contaminants and specific media
- Exemptions from future liability
- Final VRP determination of site (LOC or LOC with Restrictions)
- Description of restrictions and management conditions (LOC with Restrictions)
- Description and requirement of an Exposure Hazard Management Plan (LOC with Restrictions)
- Name of HEER Office evaluator and date of evaluation

An example VRP Letter of Completion is presented below. Note that HDOH may order a prospective purchaser receiving a LOC to re-open the site *only* if any institutional or engineering controls that are part of the LOC subsequently are not complied with, or future discoveries indicate contaminants present at concentrations exceeding Tier 1 EALs for contaminants and media *not listed* in the LOC and VRP Agreement. HDOH may not require prospective purchasers to perform additional work for contaminants and media covered in the VRP Agreement, as they have exemption from liability under HRS 128D, Part II.

Model Letter of Completion for Prospective Purchaser as Requesting Party

NOTE: Actual letter issued may vary, and a LOC is different for a site owner conducting a voluntary cleanup rather than a prospective purchaser - please consult with the HEER Office.

Re: Letter of Completion Pursuant to the Voluntary Response Program Agreement Dated [**Insert date of the Voluntary Response Agreement**] between [**Insert Requesting Party name**] and the Hawai'i Department of Health

Dear [**Insert Requesting Party name**]:

I am sending this Letter of Completion ("Letter") in accordance with Chapter 128D, Hawai'i Revised Statutes, and the Voluntary Response Program Agreement ("Agreement") dated [Insert date of the Voluntary Response

Agreement] between [Insert Requesting Party name] and the Hawai'i Department of Health ("Department"). The purpose of the law is to facilitate voluntary and timely responses to hazardous substance releases and provide relief from liability for eligible prospective purchasers who conduct voluntary response actions.

This Letter pertains to environmental contamination related to the real property located at [Insert Property Location Address] ("Property") and described in detail in Exhibit A, Attachment 1.

[Insert Requesting Party name] has completed the investigation and voluntary response action set forth in Exhibit B of the Agreement dated [Insert date of the Voluntary Response Agreement]. Pursuant to HRS 128D, Part II, carcinogens listed in Exhibit A, Attachment 2 do not pose an incremental cancer risk in excess of one in one million. Subject to the terms and provisions set forth herein, the Department hereby acknowledges satisfactory completion of the Voluntary Response Action in accordance with the Agreement and Hawai'i Revised Statutes (HRS), Chapter 128D.

These terms and provisions assure the long-term effectiveness of the Voluntary Response Action. The Department has determined that the Voluntary Response Action was an acceptable approach to managing the potential risks of exposure to the Contaminants at the Property, and that this Voluntary Response Action constitutes the "clean up" specified in HRS §128D-40(c).

Exemptions from Future Liability

Subject to the terms and provisions set forth herein, the Department hereby grants to [Insert Requesting Party name] and future prospective purchasers (as defined in §128D-32, HRS) of this Property exemptions from future liability to the Department and, to the extent authorized by law, third parties for the contaminants listed in Exhibit A, Attachment 2. Also, as provided for in §128D-40, HRS, §113(f) of the federal Comprehensive Environmental Response, Compensation, and Liability Act (P.L. 96-510), and to the fullest extent authorized by law, [Insert Requesting Party name] and future prospective purchasers shall not be liable for claims for contribution or indemnity regarding the provisions herein and Contaminants listed in Exhibit A, Attachment 2.

Exemptions from liability apply only to the Contaminants/media listed in Exhibit A, Attachment 2 that were documented and addressed in the response action on the property listed in Exhibit A, Attachment 1. Exemptions from liability do not apply to any contamination released on the Property subsequent to the date of this Letter of Completion. [Insert Requesting Party name] and future prospective purchasers must comply with any land use restrictions or management conditions that are part of the Letter of Completion (Exhibit A, Attachment 3). Not complying with applicable land use restrictions or management conditions will void the Letter of Completion, and the Department may re-open the site for additional investigation and/or action.

The Department hereby exercises its administrative authority and holds [Insert Requesting Party name] and future prospective purchasers harmless from liability to the Department and, to the extent authorized by law, third

parties for the Contaminants, Property, and specific media as addressed in the Voluntary Response Action.

Acknowledgement of land use restrictions or management conditions as part of the Letter of Completion

Note: If no land use restrictions or management conditions apply to the Letter of Completion, record this fact in this section and in Exhibit A, Attachment 3. Otherwise, provide the signature documentation below and details of any restrictions/conditions in Exhibit A, Attachment 3.

[Insert Requesting Party name] acknowledges and accepts the land use and/or management conditions as set forth in Exhibit A, Attachment 3. In the event these land use and/or management conditions are not followed, the Letter of Completion will be void and HDOH may initiate additional investigations and/or actions.

Signature: :
Title/Company:

Date

In closing, I would like to thank [Insert Requesting Party name] for participating in the Hawai'i Voluntary Response Program and for taking actions to address contaminated property in the state.

Sincerely,
[Director of Health]
Exhibit A, Attachment 1

Legal Property Description

Note: This complete legal description must cover the specific land area(s) included in the Voluntary Response action taken as a result of the Voluntary Response Agreement. If the area of the Voluntary Response action is only a portion of a larger parcel, this must be clear in the description. Please include Tax Map Key number(s) and map(s), Certificate of Title and any associated documents, or other documents to ensure a complete legal description of the Property.

Exhibit A, Attachment 2

List of Contaminants and Specific Media

Contaminants:

Media:
Exhibit A, Attachment 3

Terms and Conditions

(List any Land Use Restrictions or Management Conditions that are tied to the LOC)



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18.6 SUPPORTING FORMS AND OTHER DOCUMENTS

18.6.1 SOIL BORING LOG

Accurate boring logs are essential for evaluating and interpreting analytical results. Soil Boring Logs are included in Site Investigation Reports and Remedial Investigation Reports, as well as other reports, where appropriate. See [Section 5.5.7](#) for additional information regarding Soil Boring Logs.

Recommend boring log contents include:

- Date, time (both starting and ending, if multiple days)
- Weather and site conditions
- Name(s) of field or sampling personnel
- Name of drilling contactor
- Drilling method
- Borehole coordinates - latitude and longitude
- Sketch showing the sampling location (including reference distances)
- Diameter and total depth of borehole
- Drilling fluid and angle (if applicable)
- Blow counts
- Site name and identification
- Boring location identification
- Sample identification number (if applicable)
- Depth to water and/or bedrock (refusal) when encountered
- Soil description
- Sample recovery (and portion submitted for analysis)
- Type of sample equipment used
- Field measurements (where appropriate)
- General comments (e.g., odor, staining, etc.)
- Planned sample analyses

A sample soil boring log is presented in [Section 5, Figure 5-32](#).

18.6.2 MONITORING WELL INSTALLATION LOG

Throughout the drilling and well installation process, detailed observations are recorded in the Monitoring Well Installation Log. Prepare a well installation log for each monitoring well. See [Section 6.2.1.5](#) for additional information regarding installation logs.

A recommend list of monitoring well installation log contents includes the following:

- Project name and location
- Well designation and location relative to contaminant source
- Date and time of well installation start and completion
- Environmental consulting company and on-site consultant
- Drilling company
- Drilling method
- Volume of drill fluid and/or pre-development fluid lost into well during installation
- A graphical depiction of the well
- Casing material type, diameter, joint type, and screen slot size
- Filter pack material, calculated and actual volume
- Annular seal material, calculated and actual volume
- Annular grout seal material, calculated and actual volume

- Placement method for filter pack, seal and grout (tremie, pumped, gravity)
- Borehole diameter
- Depth to bottom of borehole
- Depth to bottom of casing
- Depth to bottom and top of screen interval
- Depth to bottom and top of solid riser
- Depth to bottom and top of filter pack
- Depth to bottom and top of annular bentonite seal
- Depth to bottom and top of annular grout
- Depth to bottom of surface seal
- Depth to the water table
- Surface seal and well apron design
- Protective box/casing and cap designs
- Ground surface elevation
- Top of casing elevation

A sample Monitoring Well Installation Log is presented in [Section 6, Figure 6-7](#).


18.6.3 MONITORING WELL ABANDONMENT FORM

A groundwater monitoring well that is no longer needed, sustains damage, or is determined to be improperly installed, must be properly abandoned so the well itself will not become a pathway for contamination. See [Section 6.2.5](#) for additional information regarding well abandonment.

The monitoring well abandonment form (i.e., Abandonment of Monitoring Well Summary Report) must include the following:

- Location
- Owner Information
- Well Construction Information, including installation date, depth to groundwater, casing and screening material, etc.
- General Abandonment Information, including drilling firm and consulting firm contact information, etc.
- Well Abandonment Information, including date and reason for abandonment, sealing material, method for placement of sealing material, etc.

A sample Monitoring Well Abandonment Summary Report Form is provided below.

	Abandonment of Monitoring Well Summary Report _____ (Monitoring Well ID)
Submit form within 30 days of well abandonment or within 90 days if included in a site closure, monitoring, or investigation report. In addition, submit copies of the original boring log and well construction diagram for the monitoring well, a site map showing the location of the abandoned monitoring well, and the disposal documentation for wastes generated during the abandonment process. Submit all documentation to: Hawai'i Department of Health, Hazard Evaluation and Emergency Response Office, Attention: SDAR, 919 Ala Moana Blvd, Rm. 206, Honolulu Hawai'i 96814.	
Location Information	Owner Information
Facility Name:	Well Owner:
Facility Address:	Contact Person:
	Mailing Address:
Latitude:	
Longitude:	Phone Number: Fax Number:
TMK:	Land Owner:
Location Description:	Contact Person:

	Mailing Address:
Monitoring well location map attached: Y / N	Phone Number: Fax Number:
Well Construction Information	
Date of Installation:	Casing Material: Casing Diameter:
Drilling Company:	Casing Length: Casing Depth:
Total Depth:	Screen Material: Slot Size:
Depth to Water:	Screen Length: Screen Depth:
Was well set in an aquifer that is current or potential drinking water source? Y / N:	Annular Material: Depth:
Boring log / well construction diagram attached: Y / N	Annular Material: Depth:
General Abandonment Information	
Drilling Firm:	Consulting Firm:
Contact Person:	Contact Person:
Mailing Address:	Mailing Address:
Phone Number: Fax Number:	Phone Number: Fax Number:
Well Abandonment Information	
Date of Abandonment:	Sealing Material Depth:
Reason for Abandonment:	Volume/Weight/Bags Mixing Ratio:
Casing/Screen Removed: Y / N	Sealing Material: Depth:
If Yes, was annular material removed? Y / N	Volume/Weight/Bags Mixing Ratio:
If No, was casing cut off below surface? Y / N	Method of Sealing Material Placement:
Comments:	
Driller's Signature:	Date:
Consultant's Signature:	Date:

18.6.4 VOLUNTARY RESPONSE PROGRAM APPLICATION

An application is necessary to determine eligibility to participate in the Voluntary Response Program (VRP). A list of necessary application elements (no specific application form is required) can be found at the HEER Office web page at <http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/voluntary-response-program> (see How Can I Apply to Participate?). In addition, this website includes a "checklist" that can be downloaded that lists specific application elements that the HEER Office evaluates on new VRP applications.

18.6.5 ENVIRONMENTAL COVENANT



An environmental covenant is a legal device that restricts activities on sites where contaminated media is left on-site. The Uniform Environmental Covenants Act (UECA), HRS, 508C, was enacted by the Hawai'i State legislature in July 2006. The UECA provides a regulatory mechanism for recording engineering or institutional controls on a property, and requires the creation of a publically accessible web-based registry to identify properties utilizing this mechanism. HDOH, at its discretion, may require UECA covenants. In general, these covenants are required for risk-based closures with extensive or highly persistent contamination. They may also be required where there are foreseeable future use changes that could expose sensitive populations.

Information in a UECA covenant includes the following:

- Site identification information
- Grantor and Owner information
- Site background
- Intent of environmental covenant
- Affected property
- Activity and use restrictions
- Obligations of the Grantor and all future owners and users of the Property
- Duration
- Effective date
- Representations and warranties
- Information regarding termination or modification of covenant
- Enforcement of covenant
- Rights of access to Property
- Recording and registry
- Execution

A sample environmental covenant has been developed by the HEER Office (below), however alternate formats may be acceptable on a case-by-case basis.

**SAMPLE
STATE OF HAWAII'
ENVIRONMENTAL COVENANT**



Return by Mail () Pickup () To: _____

Document contains ____ pages

Tax Map Key: Portions of [_____]

Environmental Covenant # []
[Covenant Name]

SITE _____

This Environmental Covenant (**Covenant**") is made by and between _____ ("**Grantor**"), _____ ("**Owner**"), and the State of Hawai'i Department of Health ("**Holder**"). Grantor, Owner, and Holder are collectively the "**Parties**" to this Covenant.

1. Background.

1.1 On July 6, 2006, the Hawai'i Uniform Environmental Covenants Act, Hawai'i Revised Statutes Chapter 508C ("**UECA**") became law in the State of Hawai'i. The legislature found that there is a growing reliance on the risk-based cleanup of contaminated property when removal of contamination to unrestricted levels is infeasible, impracticable, or unnecessary. In such cases, certain land use restrictions, environmental monitoring requirements, and engineering controls known as Activity and Use Restrictions are required to protect the public and the environment from contamination that remains on the Property. The Hawai'i Department of Health, Hazard Evaluation and Emergency Response (HEER) Office uses environmental covenants to ensure compliance with the terms and conditions of risk based cleanup projects under Hawai'i Revised Statutes Chapter 128D.

1.2 _____ ("Owner") is the owner of real property consisting of: (a) a [] acre portion of TMK: _____ located at _____ more particularly described in Exhibit A attached hereto and incorporated herein (**the "Property"**).

1.3 Grantor and ___ (Owner's predecessor-in-interest) entered into that certain [] filed in the Office of the Assistant Registrar of the Land Court of the State of Hawai'i as Document No. [] and noted on Transfer Certificate of Title Nos., [] which affect the Property.

1.4 Pursuant to said Reciprocal Easement Agreement, Grantor undertook an environmental response project on the Property pursuant to Hawai'i Revised Statutes Chapter 128D and the Voluntary Response Program Agreement between Grantor and Holder dated June 2001 (the "Environmental Response Project").

1.5 The Environmental Response Project is described in the administrative record identified as [FACILITY/SITE NAME, LOCATION, DATE] which record is located at the Office of Hazard Evaluation and Emergency Response, State of Hawai'i Department of Health ("HDOH").

1.6 In consideration of the Environmental Response Project, the Holder has issued a Letter of Completion under Hawai'i Revised Statutes Section 128D-39 dated _____, [YEAR] ; attached hereto as Exhibit B, ("Letter of Completion") subject however, to the execution and delivery of an environmental covenant made in accordance with and pursuant to UECA.

2. **Intent** . The parties executing this Covenant intend it to be an "environmental covenant" created and executed pursuant to UECA. The State of Hawai'i Department of Health is deemed to be a "holder" in accordance with the UECA. The property shall be burdened by the Activity and Use Restrictions described in paragraph 4 to the benefit of the Holder, and, in accordance with the Covenant, and use of this Property shall be subject to the Environmental Response Project or this Covenant. This Agreement is to be governed by and construed in accordance with Hawai'i law, and courts sitting in the State of Hawai'i, including the United States District Court for the District of Hawai'i to the extent it has jurisdiction.

3. **Affected Property** . This Covenant applies to the Property.

4. **Activity and Use Restrictions**. The Grantor and Owner shall comply with the following Activity and Use Restriction:

4.1. [List applicable activity and use restrictions here]

5. Obligations of the Grantor and all future owners and users of the Property .

The Grantor and Owner for themselves and on behalf of their heirs, successors, assigns and all persons acquiring or owning any right, title, or interest in the Property and their respective heirs, successors, assigns, lessees, licensees, executors, administrators, devisees and any users of the Property, now agree to comply with the Activity and Use Restrictions and incorporate either in full or by reference the restrictions of this Covenant in any deed, lease, license or other instruments granting a right to use the Property and any mortgage.

6. Duration. This Covenant shall be perpetual unless amended, terminated or modified pursuant to and in compliance with UECA.

7. Effective Date . This Covenant shall be effective at such time as all of Grantor, Owner, and the Holder have executed this Covenant.

8. Representations and Warranties. Each person signing this Covenant warrants that, to the best of his or her knowledge, he or she is the appropriate individual to represent his or her own interest or the interest of the entity on whose behalf the person is signing this Covenant in matters related to this Covenant. Each person signing also warrants that he or she possesses the proper authority to enter into this Covenant in the capacity stated in the applicable signature block. Additionally, the Grantor and Owner warrant that to their knowledge, there are no recorded or unrecorded interests in the Property that have not been disclosed.

9. Termination or Modification of this Covenant. This Covenant may be amended or modified or terminated only by a recorded document signed by the Grantor, Owner, and Holder and only in accordance with applicable provisions of UECA.

10. Enforcement. This Covenant is subject to the enforcement provisions of UECA.

11. Rights of Access to the Property. The Holder shall have the right to enter the Property at reasonable times without prior notice for the purpose of determining compliance with the terms of this Covenant. Nothing in this Covenant shall impair any other authority the Holder may otherwise have to enter and inspect the Property. No confidential information secured by an official, agent, or employee of the Holder within the scope and course of his or her inspection shall be disclosed by them except as it relates directly to Property contamination and then, only in connection with their official duties and employment.

12. Recording and Registry. This Covenant and any modification, amendment or termination instrument shall be recorded with the State of Hawai`i Bureau of Conveyances or Office of the Assistant Registrar of the Land Court of the State of Hawai`i or both as applicable. The Grantor shall provide a copy of the final recorded Covenant, any amendments, any termination documentation, and documentation of any other matters related to this Covenant to the Holder. The validity of this Covenant is not affected by failure to provide a copy of the Covenant. This Covenant is, however, subject to the laws of the State of Hawai`i governing recording and priority of interests in real property. A copy of this Covenant and any modification, amendment or termination instrument shall be available at the Holder's Registry of Environmental Covenants.

19. Execution. This Covenant may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

The Parties hereby execute this covenant as of this _____ day
of _____, [YEAR] .

By _____

Name: _____

Title: _____

Grantor

State of Hawai'i Department of Health

By _____

Name: _____

Title: _____

Holder

By _____

Name: _____

Title: _____

By _____

Name: _____

Title: _____

Owner

NOTARY SEAL FOLLOWS

EXHIBIT A

Insert Detailed Legal Description of Property where Covenant applies

18.6.6 REMOVAL OR REMEDIAL ACTION FACT SHEETS

To support public participation, a Fact Sheet may be necessary to summarize site information, the response action process, and the proposed response action. A Fact Sheet also presents information regarding the opportunity to review the record and submit public comment on the proposed response action within a specified comment period (at least 30 days). See [Section 2.4.6](#) for additional information regarding public participation. The following outline is suggested for a Removal or Remedial Action Fact Sheet. Sample Fact Sheets are also available on the [HEER Office Web page](#).

Example Outline for a Removal or Remedial Action Fact Sheet	
1.0	Introduction
2.0	Site and Vicinity Description
3.0	Site Characterization
4.0	Environmental Hazards

5.0	Removal or Remedial Action Development
6.0	Proposed Removal or Remedial Action
7.0	Next Steps (timetable)
8.0	Community Involvement
9.0	Information Repository
10.0	Agency Contact



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Section 18

REFERENCES

SECTION 18 REFERENCES

Citation references for this TGM Section denoted with an "a", "b", "c", etc... after the year of publication may not appear in sequence as these refer to the order placed in the [Master References](#) List for the entire TGM.

HDOH, 2016. Hawai'i Department of Health, Office of Hazard Evaluation and Emergency Response. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Website URL: <http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/EALs>. Summer 2016 (and updates).