

Hilo, Hawai'i 96720-4623

Approved Cleanup Action Plan Hakalau/Pepe'ekeo Sugar Company Pesticide Storage/Mixing site, Hakalau, Hawai'i

TMK 3-2-9-02:79&81

July 8, 2014

Introduction

The State of Hawai`i Department of Health (HDOH) is providing this information on the cleanup action approved for the Shropshire Group, LLC property located in Hakalau, Hawai`i County (Figure 1). The HDOH Hazard Evaluation and Emergency Response Office (HEER Office) is providing oversight, and the investigation and public participation requirements are being conducted pursuant with Hawai`i Administrative Rules Chapter 11-451.

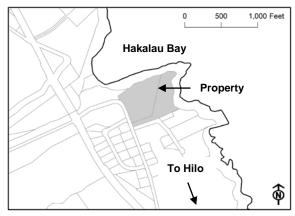


Figure 1. Property Location, in Hakalau, HI

Site Description and Property Information

subject property (site) consists approximately 8.7 acres of land along the coastline at Hakalau, Hawai'i, which formerly housed Hakalau and Pepe'ekeo Company facilities. The parcel TMKs are 03-2-9-02: 79 and 81. The site supported former operations in the plantation fields and the mill facility located just north and down in the Hakalau stream gulch. Historic operations on the subject property included offices; maintenance shops; warehousing; storage for gasoline, oil, fertilizer; seed dipping; and pesticide storage and mixing. Two former plantation warehouses remain on the property, with the remainder vacant and vegetated.

Site investigations have been conducted by HDOH and the property owner to identify the contaminants of concern and areas of soil contamination. Arsenic, which was historically used as an herbicide in sugar cane cultivation, is the principal chemical of concern and environmental hazard in soils on part of this site. Soils in the vicinity of the former pesticide mixing area ("source area") show high arsenic concentrations in surface soils, and impacts extend to a depth of approximately 6.5 feet below grade in the source area. Elevated soil arsenic is also present downhill or somewhat outside the source area, however only in the shallow soils (typically <2 feet in depth).

HDOH manages soil arsenic hazards based on a measure of bioaccessible arsenic, which is the fraction of total arsenic that is expected to be available for uptake by way of incidental soil ingestion of arsenic-contaminated soil. Soils with bioaccessible arsenic below 23 mg/kg (Category B soils) are considered minimally impacted, and are "within acceptable health risks for long-term exposure". Category C soils (moderately impacted) have bioaccessible arsenic levels from 23 to 95 mg/kg, and sites with these soils need further evaluation or controls unrestricted (i.e residential) land use. Category D soils with bioaccessible arsenic above 95 mg/kg (heavily impacted) typically require remedial action irrespective of future land use.

Site investigation work indicates that there are approximately 5,300 cubic yards (cy) of Category C arsenic contaminated soils, and 800 cy of Category D arsenic contaminated soils at the site.

Draft Removal Action Report and Comment

A proposed site cleanup plan as well as a number of cleanup alternatives was presented in a Draft Removal Action Report (Draft RAR) dated April 25, 2013. Public comment was solicited from May 15 through June 20, 2013, and a public meeting was held on the Draft RAR for the Hakalau-area community at the Honomu

Gym on the evening of May 23, 2013. In addition, a public notice regarding the Draft RAR and public meeting was published in the Hawaii Tribune Herald and the OEQC Environmental Notice, the Draft RAR and other related documents were placed in the Hilo Public Library for access during the public comment period, a letter inviting Draft RAR review and comment (along with a 3-page fact sheet) was Hakalau-area mailed to 27 residents, landowners, or interested parties, and an announcement and electronic copies of the Public Notice, Fact Sheet, and Draft RAR were posted on the HEER Office website for access.

Cleanup Alternatives

The primary objective of the cleanup alternatives considered was to protect human/ecological health by preventing direct exposures to arsenic-impacted soils. The Removal Action alternatives considered in the Draft RAR included:

- 1. No Action (included for comparative baseline)
- Excavation and Offsite Landfill Disposal of Arsenic Category C and D Soils
- 3. Onsite Containment Cell for Arsenic Category C and D Soils
- Onsite Containment Cell for Arsenic Category C Soils, Offsite Landfill Disposal of Arsenic Category D Soils
- Onsite Consolidation and Capping of Arsenic Category C and D Soils at Source Area.

Each alternative was considered in light of the primary cleanup objective and elements related to effectiveness, implementability, and cost. The preferred alternative recommended in the Draft RAR was Alternative #4 (see above). This option was judged most appropriate and feasible to reduce risks to human health or the environment.

Final Cleanup Action Approved

The final cleanup alternative approved for the site was different than the "preferred" alternative identified in the Draft RAR. Alternative #5, Onsite Consolidation and Capping of Arsenic Category C and D Soils at Source Area was selected, primarily due to the issue of maintaining cliff stability in/near the shoreline setback area, where the bulk of the site contamination is located. Discussion with County planners raised the cliff stability

concerns, which was subsequently confirmed by a geologist with expertise in cliff stability issues. The geologist recommended excavations of no more than 1-foot depth in the shoreline set back area where much of the soil contamination is found (some at depths up to 6-7 feet). Consequently, the remaining soil contamination will be capped and managed in place. The Consolidation and Capping Alternative approved will allow only limited removal (to an approved landfill) of Category D arsenic soils found less than 1-foot deep while the Consolidation and Capping work is implemented. A specific soil/dust control plan will be required during any limited soil removal work, to help ensure the community is protected from potential exposures.

The clean soil "cap" placed above the consolidated arsenic-contaminated soil will be a minimum 2-foot thickness above any Category C or Category D arsenic soils, with Category D soils remaining within the 40-foot shoreline setback area requiring a minimum of a 3-foot clean soil cap. Before the clean soil cap is added, a geotextile barrier material will be placed, along with a grid of metal warning tape, to mark the sub-surface location of remaining arsenic-contaminated soils. Low vegetation will be established and maintained on top of the soil cap area, the cap area marked at the surface, long-term administrative controls required of the landowner to ensure only passive use of the cap area (no commercial or residential development of cap area), and periodic inspection and maintenance to ensure the soil cap integrity. A detailed implementation work plan construction specifications to be reviewed and approved by the HDOH HEER Office will be prepared by the landowner before this cleanup action is started.

More details on the final cleanup action approved for this site, including a summary response to public comments received, can be found in the **Final Removal Action Report** (**Final RAR**), dated June 18, 2014. This report (76 pages) can be accessed through the HEER Office website: http://www.hawaii.gov/doh/heer-in the "What's New" section of the homepage. If you would like a copy of the Final RAR sent to you via U.S. mail or have any questions regarding this project, please contact: John Peard, HDOH Project Manager, at (808) 933-9921, or john.peard@doh.hawaii.gov