



HAWAII STATE
DEPARTMENT
OF HEALTH

HEER NEWS

The Hawaii Department of Health, Office of Hazard Evaluation and Emergency Response (HEER Office), has prepared this newsletter to provide select updates and announcements to recent and current HEER activities. With the newsletter the HEER Office hopes to better inform the environmental community and the public of the roles and services that the agency offers.

January 2011, Volume 2, Issue 1

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East Kapolei II Pesticide Mixing and Loading Site – A Brownfields Remediation Shaped by the Community

“East Kapolei II” is a new, native Hawaiian community that will ultimately consist of 2,000 residential homes as well as educational and commercial facilities. The project is being developed by the Department of Hawaiian Homelands (DHHL) on 400-acres of former sugarcane land which has been carefully tested under DOH oversight to ensure that the soils are safe for families and neighborhoods. In addition to sugarcane harvesting areas, the property also includes a small, approximately half-acre, former mixing and loading area contaminated with pesticides; this area is known as the PML Site. The site is the former Ewa Plantation Company and then Oahu Sugar Company pesticide mixing and loading area located near Kualakai Parkway, 1.2 miles east of Kapolei and 2 miles southwest of Waipahu. The primary contaminants of concern (COC) were arsenic, dioxins/furans, pentachlorophenol, and triazine pesticides (ametryn, atrazine, simazine, and trifluralin), all associated with the past use of pesticides for weed control in the cane fields. The PML Site will be capped to prevent future exposure to contaminants in the soil and no residential units will be located on the PML Site itself. The community has been very involved in contributing ideas to help the HEER Office and DHHL select protective uses for the PML Site that would benefit the neighborhood.

DHHL secured \$1,970,000 in funding through a loan from the Hawaii Brownfields Cleanup Revolving Loan Fund (HBCRLF) Program to be repaid by DHHL’s Hawaiian Home Lands Trust Fund. The Hawaii Department of Business Economic Development and Tourism (DBEDT) received the revolving loan fund from the U.S. Environmental Protection Agency (EPA), awarded it to DHHL, and provides oversight of the loan. In 2009, DHHL was selected to receive an EPA Brownfields Cleanup Grant in the amount of \$200,000 with a required recipient cost sharing of 20 percent. A Brownfields site is real property whose redevelopment may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The EPA Brownfields Program administers financial assistance to eligible applicants with a qualified Brownfields site. The remainder of the cleanup costs will be paid by DHHL’s Hawaiian Home Lands Trust Fund. Table 1 shows a breakdown of the total cleanup costs and how it is funded.

A significant accomplishment of this project is the Community Involvement Plan (CIP). The CIP is a requirement of both the HBCRLF and the EPA Brownfields Cleanup Grant. The exemplary development and implementation of the CIP by DHHL and its team members is highly commendable. The CIP serves as a framework for community involvement and outreach efforts associated with

Feature Article

(Continued from page 1) DHHL’s remediation of the East Kapolei PML Site. DHHL went beyond the activities planned in the CIP and has been involved with a variety of wide-ranging public outreach efforts. A summary of public outreach activities is provided in Table 2.

Table 1: Funding Sources and Total Estimated Cleanup Costs

Funding Source	Dollar Amount	% of Cleanup Cost
Hawaii Brownfields Cleanup Revolving Loan Fund/ DHHL’s Hawaiian Home Lands Trust Fund	\$1,970,000	80%
DHHL’s Hawaiian Home Lands Trust Fund	\$241,050	10%
EPA Brownfields Cleanup Grant	\$200,000	8%
EPA Brownfields Cleanup Grant/DHHL’s Hawaiian Home Lands Trust Fund 20% Cost Share ¹	\$40,000	2%
Total Estimated Cleanup Cost	\$2,415,050	100%

¹ Cost Share can be in the form of money, labor, materials, or services, and must be eligible and allowable costs.



The successes of this project are also attributed to DHHL’s effective partnerships with government agencies, the private sector, and community organizations to develop its lands and to improve community life. DHHL effectively leverages resources and capital investments, mitigates the undesirable impacts of development, coordinates area growth, reduces risks in large-scale community projects, and creates broad community benefits through partnerships. These partnerships allow for better prioritization and coordination of infrastructure improvement and development of regional public and residential facilities. Consistent coordination helps individual organizations achieve their goals, while bringing long-term benefits to the community and the region. As a valued

partner, DHHL contributes land for development in strategic locations; potential use of tax-exempt financing; access to legislative appropriations; access to federal funding such as the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Agriculture (USDA), and the U.S. Small Business Administration (SBA); flexibility in application of development standards, zoning, and design; and cultural understanding and resources.

East Kapolei II is surrounded and supported by other work, live, play and learn opportunities. The various partners will help bring community benefits, such as approximately 2,000 housing units, on-site and regional infrastructure improvements (roads, drainage, sewer, water, and electrical), a fire station, a Hawaiian Homestead Heritage Center, spaces for Hawaiian organizations, the Kroc Community Center, a shopping center, headquarters for DHHL, parks, and schools. Additionally, the University of Hawaii (UH) West Oahu Campus will be located adjacent to the community, providing opportunities in higher education for both area residents and Oahu’s larger population.



Three key project successes for the community are that the contamination at the PML Site was identified and addressed well before development was initiated; the community is involved in the future use of the PML Site; and DHHL has formed lasting, cooperative relationships with government agencies and private organizations that will continue to benefit the East Kapolei II community. The East Kapolei II project is an excellent example of how Brownfields can be optimally redeveloped. Visit <http://hawaii.gov/dhhl/publications/east-kapolei-ii-pesticide-mixing-and-loading-site/> for more information on this project.



Table 2: Summary of Public Outreach Activities

Dates	Activities
October 7, 2008	Public Notice, Notice of Availability of Public Review Draft, Application for EPA Brownfields Cleanup Grant DHHL published a notice in the <i>Honolulu Star Bulletin</i> of the availability of the draft application for public review and comment.
October 21, 2008	Maluohai Residents Association (MRA) Meeting DHHL met with the MRA to discuss the cleanup project, EPA Brownfields cleanup grant application, and to solicit community input.
November 13, 2008	Ewa Neighborhood Board Meeting DHHL met with the MRA to discuss the cleanup project, EPA Brownfields cleanup grant application, and to solicit community input.
November 14, 2008	Submittal of Proposal, EPA Brownfields Clean Up Grant DHHL executed the formal submittal of the agency's proposal for the EPA grant.
March to April 2009	Architectural Inventory Survey and Section 106 Consultation DHHL prepared an Architectural Inventory Survey to evaluate the property's eligibility for nomination to the national Register of Historic Places. DHHL consulted the DLNR State Historic Preservation Division, which issued a letter indicating that the project may proceed.
April 13, 2009	Hawaii Brownfields Cleanup Revolving Loan Fund (HBCRLF) Application DHHL submitted the application to HBCRLF Program, administered by the state DBEDT Office of Planning.
May 14, 2009	Ewa Neighborhood Board Meeting DHHL met with the Ewa Neighborhood Board to announce approval of the EPA Brownfields cleanup grant, approval of the HBCRLF, completion of the National Historic Preservation Act Section 106 consultation, and to solicit community input.
June 29, 2009	Press Release, EPA Brownfield Cleanup Grant Award EPA issued the press release: "EPA awards \$200,000 Brownfields grant to Department of Hawaiian Home Lands, <i>Cleanup of East Kapolei site will help protect affordable house project for native Hawaiians.</i> "
October 2009	Community Involvement Plan (CIP) DHHL completed the CIP to delineate the agency's plan for providing public information and input of cleanup of the project site.
October 27 to November 23, 2009	Interviews with Elected Officials and Community Leaders To solicit input on proposed project and planned community involvement activities, DHHL conducted personal interviews with eight elected officials and community leaders.
October 28, 2009	Makakilo/Kapolei/Honokai Hale Neighborhood Board Meeting DHHL conducted a project presentation, indicated that the agency is commencing community outreach regarding remediation of the project site, and indicated that demolition of the existing on-site structure would begin December 2009.
November 2009	Distribution of Project Update for East Kapolei Master Plan, Fact Sheet & Comment Form DHHL distributed a project update for the East Kapolei Master Plan, project information packets to the agencies, organizations, interested parties listed in the CIP, as well as to the existing and future lessees and residents of DHHL's Kanehili (East Kapolei I) development and East Kapolei II development.
November 12, 2009	Ewa Neighborhood Board Meeting DHHL provided background information, indicated that the agency is commencing community outreach regarding remediation of the project site, and indicated that demolition of the existing on-site structure would begin December 2009.
November to March, 2009	Hawaiian Homes Commission (HHC) Community Meeting in Waimanalo, Nanakuli and Kapolei DHHL held meetings in Waimanalo, Nanakuli, and Kapolei to discuss the cleanup project in addition to other ongoing DHHL projects.
December 31, 2009	CIP Addendum No. 1 DHHL completed and submitted to the DOH an addendum to the CIP documenting DHHL's community outreach from October through December 2009. The addendum includes a summary of all public comments and questions received through December 2009.
January 7 & 28, 2010	Public Informational Meeting On January 7, DHHL distributed an invitation to government agencies, community leaders, organizations, and DHHL beneficiaries in East Kapolei I and II to attend a public informational meeting. On January 28, approximately 30 community members gathered at the meeting hosted in conjunction with DOH and DBEDT.
February 28, 2010	Distribution of Project Update DHHL distributed a project update newsletter to all project contacts and interested parties.
May 4 & 20, 2010	Public Health Forum On May 4, DOH distributed an invitation to government agencies, community leaders, organizations, and DHHL beneficiaries in East Kapolei I and II to attend a public health forum. On May 20, DOH conducted a community information session in cooperation with DHHL to discuss contaminants at the project site and related public health issues.
June 30 & July 8, 2010	Draft Response Action Memorandum (RAM) DOH published a notice of availability of the public review Draft RAM in the <i>Honolulu Star Advertise</i> and in the Office of Environmental Control's <i>The Environmental Notice</i> .

HEER Dioxin and Arsenic Guidance Update

In June 2010, the Hawaii Department of Health (HDOH) HEER Office released an *Update to Soil Action Levels for Toxic Equivalent (TEQ) Dioxins and Recommended Soil Management Practices*. The updated dioxin TEQ soil action level under unrestricted (such as residential) land use was decreased from 450 nanograms per kilogram (ng/kg) to 240 ng/kg. The action level for commercial/industrial land use was reduced from 1,800 ng/kg to 1,500 ng/kg (also used as the construction /trench worker action level). Exposure to dioxins and furans in soil at or below these levels is not considered to pose a significant health risk under the noted exposure scenarios. Reported concentrations of TEQ dioxins in soil above these action levels does not necessarily indicate that a health risk is posed, but warrants additional evaluation. The updated soil action levels are based on multiple lines of evidence, most notably the World Health Organization (WHO) Permissible Tolerable Monthly Intake (PTMI) factors and typical Pacific-Asian dietary exposure. The June 2010 technical memorandum can be viewed under on the Environmental Action Levels page of the HEER Office website.

Soil management was refined into four categories for evaluating and managing dioxin-contaminated soil. Table 1 provides a quick synopsis of the updated categories:

Table 1: Summary of TEQ Dioxin Soil Action Levels and Associated Soil Management Categories

Soil Management Category	TEQ Dioxin Range nanogram/kilogram (ng/kg)	Action
Category A	≤20 ng/kg	Background – No further action required and no restrictions on land use.
Category B	>20 but ≤240 ng/kg	Minimally Impacted – Includes in remedial actions for soil in more heavily contaminated spill areas as practicable to reduce exposure (such as the outer margins of pesticide mixing areas). Off-site reuse of soil for fill material or as final cover on a decommissioned landfill is acceptable, pending agreement by the landfill and barring hazardous waste restrictions.
Category C	>240 but ≤1,500 ng/kg	Moderately Impacted – Restriction to commercial/industrial land use required with a formal restriction to the deed against sensitive land uses (for example, residential, schools, day care, and medical facilities). Preparation of a site-specific, Environmental Hazard Management Plan (EHMP) required if soil is left on site for long-term management.
Category D	>1,500 ng/kg	Heavily Impacted – Remedial actions required under any land use scenario to reduce potential exposure.

Note: for complete action details, please see June 2010 Technical Memorandum, Update to Soil Action Levels for TEQ Dioxins and Recommended Soil Management Practices. It includes further guidance for homeowners and developers.

More recently, arsenic levels in soil were categorized in a similar manner by the HDOH HEER Office. An *Update to Soil Action Levels for Inorganic Arsenic and Recommended Soil Management Practices* was released in October 2010. The most notable update is that soil management categories have been simplified into four categories and are presented in Table 2. The arsenic soil action levels presented in the 2008 technical



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memorandum has not been adjusted, and the updated document reflects additional support for the action levels released in 2008.

HDOH continues to place a higher level of confidence in the noncancer toxicity factors and believes these factors provide the technical support for regulatory decisions. A comparison of exposure to arsenic in soil with dietary exposure to arsenic based on a Pacific-Asian diet high in rice and fish suggests that dietary exposure to inorganic arsenic is anticipated to far exceed exposure to arsenic in soil at the stated action levels. Details of the October 2010 technical memorandum can be viewed under on the Environmental Action Levels page of the HEER Office website.

Table 2: Summary of Inorganic Arsenic Soil Action Levels and Associated Soil Management Categories

Soil Management Category	Arsenic Range milligram/kilogram (mg/kg)	Action
Category A	Total Arsenic (<2mm size fraction) ≤20 mg/kg	Background – No further action required and no restrictions on land use.
Category B	Total Arsenic (<2mm size fraction) >20 and Bioaccessible Arsenic (<250µm size fraction) ≤23 mg/kg	Minimally Impacted /unrestricted land use – Includes soil in remedial actions for more heavily contaminated spill areas as practicable to reduce exposure (such as the outer margins of pesticide mixing areas). Off-site reuse of soil for fill material not recommended for soil with more than 100 mg/kg total arsenic. Use of soil for intermediate (for example, temporarily inactive portions) or interim (daily or weekly) cover at a regulated landfill is acceptable, pending agreement by the landfill and barring hazardous waste restrictions.
Category C	Bioaccessible Arsenic (<250µm size fraction) > 23 but ≤95 mg/kg	Moderately Impacted, Commercial /Industrial Land Use Only – Restriction to commercial/industrial land use is typically required in the absence of remediation or significant institutional and engineered controls and HDOH approval. Use of soil as intermediate (temporarily inactive portions) or interim (daily or weekly) cover at a regulated landfill is acceptable, pending agreement by the landfill and barring hazardous waste restrictions. Preparation of a site-specific, EHMP required if soil is left on site for long-term management.
Category D	Bioaccessible Arsenic (<250µm size fraction) >95 mg/kg	Heavily Impacted/Remedial Actions Required – Remedial actions required under any land use scenario to reduce potential exposure. Disposal of soil at a regulated landfill is acceptable, pending agreement by the landfill and barring hazardous waste restrictions. Preparation of a site-specific EHMP is required if soil is left on site.

Note: for complete action level details, please see October 2010 Technical Memorandum, Update to Soil Action Levels for Inorganic Arsenic and Recommended Soil Management Practices. It includes further guidance for homeowners and developers.



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MIS Pilot Study and Guidelines for VOCs

In June 2010, the HEER Office conducted a pilot study using the multi-increment sampling (MIS) and decision unit (DU) strategy for characterizing subsurface soils contaminated with volatile organic compounds (VOCs). The pilot study was conducted at a former aircraft refueling and maintenance facility located at Hickam Air Force Base. Trichloroethylene (TCE) contamination in the soil and groundwater had been identified at the site. The purpose of the study was to improve characterization of VOC-contaminated subsurface soils, which has traditionally been difficult to delineate.

Some of the unique aspects of the pilot study included the following:

- Evaluating the use of MIS data to identify the mean contaminant concentration and mass within a given DU in comparison to using traditional discrete sampling data;
- Evaluating the appropriate spacing or “resolution” of increments needed per core interval to adequately estimate mean contaminant concentration;
- Evaluating the use of a MIS “row and column” (layer and boring) approach to identify zones of concentrated contamination with a DU; and
- Evaluating the use of subsets of MIS samples to refine the location and mass approximations for identified zones of concentrated contamination.

Approximately 8,000 5-gram increments were collected and combined into more than 200 MIS samples during the pilot study. The HEER Office is currently examining the analytical data and plans to develop a three-dimensional representation of the MIS sample data for future information and training. Check the HEER Office website in the near future for announcements regarding presentations on the study results.

“HEER Office guidance on the use of multi-increment sampling to collect representative soil samples is currently focused primarily on non-volatile contaminants and surface soil sampling. The fieldwork the HEER Office recently completed with the support and assistance of multiple contractors and the Air Force was testing procedures we believe will lead to more in-depth guidance on how to effectively and efficiently apply representative multi-increment sampling procedures to volatile contaminants (as well as non-volatile contaminants) found in sub-surface soils.”

*John Peard, HEER Office
Remedial Project Manager*



To collect a MIC sample, each core was sub-sampled by collecting multiple 5-gram increments of soil at a designated spacing interval using a Terra Core sampling device (Left). Each increment was transferred to an amber container filled with methanol to minimize loss of VOCs (Center). After all increments were collected, the weight of the MIC sample in the amber container was recorded (Right).



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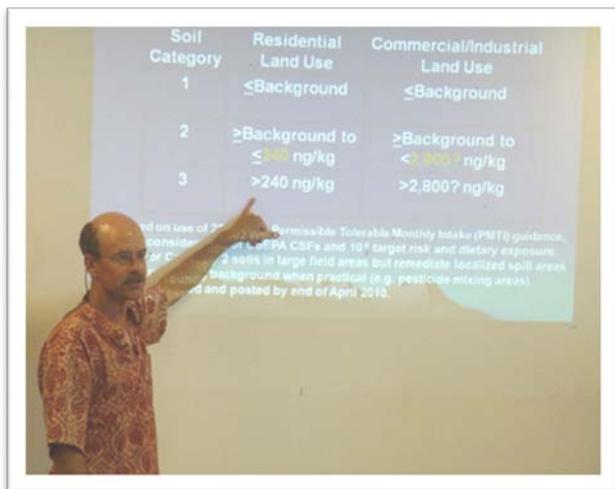
Clean Fill Guidelines

The HEER Office is developing guidance on the acceptability of fill material that is imported to or exported from sites with contamination concerns. Currently, the State of Hawaii does not have any guidance related to fill material, and there is no formal definition of “clean fill material” in the state’s administrative rules and regulations. The HEER Office’s goal is to provide clear guidance on evaluating whether a fill source is “suspect” for contamination, evaluating suspect fill material in situ or in soil stockpiles to assess whether significant levels of contamination are present, as well as to provide recommendations for action when contamination is identified. The guidance may be useful for consideration at numerous sites where fill material is imported or exported, but was primarily developed for use on sites that are under HEER Office oversight (such as environmental investigation and cleanups). Several potential environmental hazards are related to the import and export of contaminated fill material, such as direct exposure, leaching to groundwater, vapor intrusion, and general nuisance hazards. It is important to determine that the proposed fill material does not pose unacceptable environmental hazards to human health and the environment because fill material may come from a variety of areas with different historical uses. Key parts of the guidance will include a definition of “acceptable fill material,” sources of fill material that should be considered suspect for contamination, how to decide whether proposed fill materials are acceptable, sampling rates and protocols for in situ or stockpiled fill materials, and other fill management considerations.

A guidance document, fact sheet, and education and outreach efforts with stakeholders are planned. The guidance document and fact sheet are scheduled to be completed by the end of 2010 and will be posted to the HEER Office website. There are also plans to incorporate the guidance document into the HEER office’s on-line Technical Guidance Manual.



Workshops, Forums and Trainings



Roger Brewer, Ph.D., an Environmental Scientist with the HEER Office, presented a draft update to the soil action levels for TEQ Dioxins at the State Sites Investigation and Cleanup Process Workshop held in April 2010. In June 2010, the HEER Office released a technical memorandum with the updated action levels and corresponding technical guidance (see HEER Office Dioxin and Arsenic Guidance Update, page 4).

COMPLETED TRAINING: State Site Investigation and Cleanup Process Workshop – In April 2010, the HEER Office used funds provided by the U.S. Environmental Protection Agency to provide a brown-bag workshop on the *State Site Investigation and Cleanup Process*. Workshop highlights included a presentation on the new *HEER Office Report Review Worksheet*. The worksheet (available on the HEER Office website) is intended to be used as a tool by Remedial Project Managers (RPM) in the HEER Office for reviewing and evaluating whether a report sufficiently fulfills investigation and cleanup requirements presented in the *HEER Technical Guidance Manual (TGM)*. The worksheet can also be used by those who prepare reports or request DOH oversight for a site, and it is intended that the worksheet will aid in clarifying HEER Office expectations for investigation and cleanup reports. Additional workshop topics included a presentation on the DOH Cost Recovery process that is currently under development, a review of the Fast Track Cleanup process, and a presentation on the draft updates to the TEQ dioxin soil action levels.

COMING SOON: Fifth Brownfields Forum – In Spring 2011, the HEER Office will host the *Fifth Brownfields Forum*. The goal of the *Forum* is to facilitate the identification, cleanup, and redevelopment of contaminated property in Hawaii. This year, the HEER Office has formed a new partnership with the State of Hawaii Department of Business, Economic Development and Tourism (DBEDT) and the U.S. Department of Housing and Urban Development (HUD) to bring together the *Annual Hawaii Build and Buy Green Expo* and the *Brownfields Forum* into one great event. Combining the events will bring the *Forum* to a broader audience and integrate topics such as alternative energy and green building practices with Brownfields redevelopment. Planning is currently under way and registration will be opening in the near future.

Announcements

Rules Effective for the Hawaii Emergency Planning and Community Right-to-Know Act

On November 5, 2010, the Hawaii Administrative Rules (HAR) became effective for Chapter 11-453, Hawaii Emergency Planning and Community Right-to-Know Act (HEPCRA). The purpose of the rules is to better implement and improve compliance with the requirements of HEPCRA, Chapter 128E, Hawaii Revised Statutes (HRS).

HEPCRA is modeled after the federal EPCRA which establishes requirements for the storage and use of hazardous and toxic chemicals. The purpose of “Community Right-to-Know” is to help communities plan for emergencies involving hazardous substances and increase the public’s knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. The administrative rules cover identification of facilities and chemicals subject to HEPCRA reporting requirements; reporting procedures and requirements; and responsibilities of implementation agencies. The rules can be downloaded from the HEER Office website.

