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GOVERNOR OF HAWAI'I

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In reply, please refer to:
File: EHA / HEER Office
2014-142-ES

March 28, 2014

Walter Chun, Ph.D.

Personal Matters / Ex. 6

Facility/Site: Military family housing sites at Marine Corps Base Hawai'i

Subject: HDOH Response to Your 3/5/2014 Letter "RE: Dept of Health Practices to 'Approve' Unsafe Housing for the Military Families"

Dear Dr. Chun:

This letter responds to your 3/5/2014 letter regarding the management of pesticide-impacted soils (PI soils) at Marine Corps Base Hawai'i (MCBH). Our responses to your concerns are attached. We have taken the liberty of summarizing the concerns you expressed in your letter for clarity and ease of response.

Thank you for your interest and concern. Upon receipt of inquiries from you and community members at MCBH, the HEER Office recently sent requests for information to Ohana Military Communities (OMC), the U.S. Navy, and the U.S. Marine Corps. These requests seek all soil sampling data related to PI soil management at MCBH, as well as information on OMC's implementation of its *Pesticide Soils Management Plan* at MCBH.

Upon receipt, we will be reviewing soil sampling data and information regarding implementation of OMC's *Pesticide Soils Management Plan*, which HDOH approved in 2007, in order to evaluate current conditions, clarify current practices, and confirm that proper measures are being taken to ensure protection of residents throughout MCBH's neighborhoods. Should you have further questions about site-specific issues at Marine Corps Base Hawai'i, please contact Eric Sadoyama of my office at *eric.sadoyama@doh.hawaii.gov* or (808) 586-0955.

Sincerely,

FENIX GRANGE, Supervisor
Site Discovery, Assessment, and Remediation Section
Hazard Evaluation and Emergency Response Office

ATTACHMENT 1

HDOH Response to Your 3/5/2014 Letter "RE: Dept of Health Practices to 'Approve' Unsafe Housing for the Military Families"

HDOH Reviewer: Eric Sadoyama

HDOH Review Date: 3/28/2014

	Concern	HDOH Response
1.	HDOH has no authority to establish alternative EALs.	The establishment of environmental action levels ("EALs") by HDOH, both the statewide default EALs as well as site-specific EALs, is based on HDOH's authority under Hawaii Administrative Rules 11-451-10 to determine when no further response appears appropriate where a release of a hazardous substance to the environment has occurred.
2.	The alternative EALs are not supported by sound science.	HDOH has set the alternative EALs for military family housing (MFH) sites to be protective of the most-sensitive members of the population (children and infants) when used with an effectively implemented management plan for pesticide-impacted soils ("PI soils"). These alternative EALs are protective of both cancer and noncancer health risks.
a.	**The alternative EALs do not address exposure to sensitive subpopulations** such as: children, toddlers, infants, newborns, fetuses, pregnant women, and individuals with compromised immune systems. Also, **the alternative EALs do not address exposure to pets**.	HDOH's EALs typically focus on exposure of children during the first 6 years of their development. Additional precautions regarding prenatal exposures and exposures to infants and children apply only to chemicals that are known to be mutagenic. Based on current science, USEPA considers that the organochlorine pesticides chlordane, aldrin, and dieldrin are not mutagenic and therefore do not warrant additional adjustments for children and infants beyond the safety factors already included in the childhood exposure models used. Exposure to nonhuman animals is addressed in the "ecological toxicity" component of EAL development.
b.	**The alternative EALs do not address all potential health impacts**, such as: cancer, neurological disorders, respiratory disorders, skin disorders, and gastrointestinal disorders. Also, use of an exposure period of 6 years is inappropriate. HDOH's original default exposure period was based on EPA's PRGs, which were originally set assuming a lifetime exposure period of 70 years and then later set to 30 years. They do not address the potential for delayed long-term effects. Adverse effects from short-term exposures may be delayed for 20+ years. They do not address long-term low-level exposure. HDOH must consider long-term low-level exposure by conducting long-term actions to continuously assess the safety of these environments.	HDOH has concluded that for chlordane, aldrin, and dieldrin, the weight of evidence is stronger for noncancer health effects (including neurological disorders, respiratory disorders, skin disorders, and gastrointestinal disorders) than for cancer endpoints. The alternative EALs are set to prevent noncancer health effects in children. Cancer risks due to long-term exposure are within USEPA's target risk range of between 10^{-6} and 10^{-4}. The weakness of the evidence for human carcinogenicity supports a focus on noncancer risk to children where the evidence of potential health effects is much stronger and more important. USEPA guidance recommends that noncancer health hazard assessments focus on the first 6 years of childhood development and that a 6-year exposure period be used to develop soil cleanup levels.

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c.	**The alternative EALs do not address all potential exposure pathways**, such as contact with surface soils, contact with contaminated soil particles deposited on indoor surfaces, and indoor inhalation of contaminants.	HDOH's EALs reflect exposure assumptions and health risk assessment guidance published by the USEPA. USEPA guidance is based on data from published exposure studies.
3.	**The protectiveness of the alternative EALs has not been verified.** No action has been taken to verify the protectiveness of the alternative EALs by monitoring for actual human health impacts.	Monitoring for actual human health impacts on a site-by-site basis is not practical for epidemiological reasons.
4.	**The effectiveness of OMC's PI soil management plan for MCBH has not been verified.** No action has been taken to verify that the PI soil management plan used by Ohana Military Communities (OMC) has been effectively implemented. Marine Corps Base Hawaii (MCBH) residents have reported instances where contractors have not complied with soil management procedures such as controlling demolition dust/debris during construction.	To date, HDOH has not conducted intensive oversight of OMC's activities. As a result, we do not currently have detailed information on OMC's PI soil management practices. We have requested that OMC provide us with more detailed information on their PI soil management activities so that we can better evaluate their performance.
5.	**Residents have experienced health impacts due to the use of the alternative EALs and improper PI soil management practices.** In an informal survey, 250+ past and present MCBH residents have reported a wide range of illnesses such as miscarriages, neurological illnesses, childhood asthma, liver illnesses, skin illnesses, and respiratory distress. In many cases residents' doctors have ruled out genetic or other causal factors and can only conclude the causal factors are environmental. Residents' pets have also experienced unexplained illnesses and deaths.	Thank you for bringing the existence of this informal survey to our attention. We will evaluate the results of this survey and include it in our evaluation.
6.	Existing data on pesticides in MCBH neighborhoods is not representative due to inappropriate sampling methods. Data from multi-incremental sampling and composite sampling methods do not accurately report the degree of contamination present on site. Actual representative data has not been obtained. In the absence of representative site data, acceptable risk assessments cannot be developed.	Evidence supporting the accuracy and reproducibility of data collected using multi-increment sample collection is strong. We suggest that you review the discussion of multi-increment sample collection in Chapter 4 of the HDOH HEER Office's *Technical Guidance Manual* (http://www.hawaiidoh.org/tgm.aspx).

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7.	Residents have not been informed of their potential exposure to PI soil. The degree of risk has been misrepresented to residents. They have been told that they must "eat handfuls" of contaminated soils to get sick, and that there is no airborne exposure because the pesticides cling to the soil particles. Also, residents' doctors have not been informed of their patients' potential exposure to PI soils. HDOH has not made efforts to educate and work with the medical community in this State on this issue.	Residents are alerted to the presence of PI soil in OMC neighborhoods upon their arrival at MCBH via notice in the OMC *Community Handbook, Marine Corps Neighborhoods*. We encourage all members of the public to contact us if they should have concerns regarding public health impacts in their communities.
8.	**HDOH has not heard of concerns from residents for the following reasons**: (1) **MFH residents fear reprisal if they speak up.** Military families are reluctant to complain due to fear of workplace retaliation by their employers and the lack of other feasible housing alternatives. (2) **MFH residents are transient.** Military residents are unlikely to complain since they typically relocate every 4-6 years and would be unlikely to suspect exposure in Hawaii, especially when never informed of such exposure.	We encourage all members of the public to contact us if they should have concerns regarding public health impacts in their communities.
9.	**HDOH has not applied its EALs consistently.** HDOH has approved alternative EALs for some military housing projects in the State. What about other military housing projects? Not all of them have been evaluated and addressed.	HDOH establishes site-specific EALs on a site-by-site basis depending on the specifics of each site. In every case, whether they are site-specific or statewide default values, the EALs used for that site are set to be protective of public health and the environment.
10.	HDOH has not addressed my complaints from 2004 to the present.	**Chun letter** 1/28/2008 "Report to the 24th Legislature [...]" 5/18/2009 "Violation of NPDES [...]" 8/1/2009 "Violation of NPDES [...]" 3/27/2012 "DOH Change of EALs [...]" 7/3/2012 "Public Comments to Draft RAM [...]" **HDOH response** 3/17/2008 "MCBH Military Housing Chlordane [...]" (2008-077-FG) 6/19/2009 "Violation of NPDES [...]" (2009-411-FG) 10/14/2009 "Management of pesticide-impacted soils [...]" (2009-644-ES) 5/17/2012 "Response to DOH Change of EALs [...]" (2012-278-ES) 10/17/2012 "Transmittal of Signed Final RAM [...]" (2012-589-ES)

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11.	HDOH should take the following actions:	---
a.	**Rescind the alternative EALs.** Stop any further approvals or any other authorization allowing elevated levels of pesticides without an adequate characterization and risk assessment. Inform residents and the general public that HDOH approval was not based on sound scientific data but was for economic benefit.	The existing alternative EALs for OMC, which were established in 2006, are protective. HDOH is evaluating additional toxicity information developed since 2006 to determine whether adjustments to these alternative EALs are warranted.
b.	**Measure actual exposures to MFH residents** by conducting air sampling and wipe sampling in and around houses, and use the collected data to continuously analyze human health impacts.	Air sampling and wipe sampling are not warranted, as exposure via airborne dust is already accounted for in the exposure assessment.
c.	**Enforce compliance with PI soil management procedures** to prevent improper soil management, and **establish "effective, meaningful and OBJECTIVE oversight committees"** to ensure compliance and transparency.	HDOH is working to coordinate with OMC to ensure that their PI soil management procedures are effectively implemented.
d.	**Conduct studies of MCBH residents (past and present) and their pets** to evaluate pesticide-related health impacts.	Health effects from exposure to organochlorine pesticides have been documented in cases involving high-level exposure, such as during pesticide application, or due to intentional or accidental poisoning. We are not aware of any documented cases of health effects due to exposure at the low levels associated with organochlorine pesticide residues in soil. In addition, the EALs have several conservative safety factors to further ensure that there will be no health risk to children who may be potentially exposed to residual pesticide levels in soil. We therefore believe it is extremely improbable that residents' health concerns are linked to exposure to potential low-level residual pesticides in soil. Considering the extreme improbability of this relationship, we do not believe that the extensive commitment of time and resources required for a formal health study would be justified.