



**DEPARTMENT OF THE ARMY**  
U.S. ARMY ENGINEER DISTRICT, HONOLULU  
FORT SHAFTER, HAWAII 96858-5440

REPLY TO  
ATTENTION OF:

CEPOH

1 October 2001  
(Corrected 5 Oct 01)

Memorandum for Record

Subject: Response to the Tanapag Action Group's (TAG) comments on the Focused Feasibility Study and Proposed Plan for Remediation of PCB contaminated soils at Tanapag Village, Saipan, Commonwealth of the Northern Mariana Islands.

1. TAG Position of the Focused Feasibility Study.

The Tanapag Action Group, adopted the unanimous vote of 68 and the over one thousand signatures of the Tanapag residents to ship all 20,000 tons of PCV (sic) contaminated soil to off island treatment location, when appropriate on-site expertise and equipment availability.

The pilot project for testing of indirect thermal desorption machinery must be conducted off island treatment location, where appropriate on-site expertise and equipment availability.

*The Army has significant difficulty implementing this alternative. First, the funding is not available. The Honolulu Engineer District (HED)'s annual budget FUDS budget is \$5 - 6 million. These funds are shared among all active FUDS projects in the district, based on risk determined priority. The cost to implement this alternative is about \$18,000,000. We don't believe we can get funding for this alternative in the foreseeable future, perhaps in four years, perhaps longer.*

*The other significant problem with implementing this alternative is logistics.*

*The logistical difficulties with shipping 20,000 tons of PCB contaminated soil are very significant. We would need to barge about 1500 containers of contaminated soils from Saipan to Guam. The Guam EPA has indicated in its comments on this project's FFS and proposed plan that it is not amenable to the prospect of addressing the management, handling, and storage of this quantity of contaminated soil on Guam or in its harbor facilities. We would need to obtain the necessary Guam permits to transit these soils through Guam. In fact, because of the quantities of soil and the time involved, we would need to obtain a TSCA storage facility on Guam.*

*If we could surmount the substantial problems with bringing this material through Guam, we would ship the soil to the US mainland for final disposal. Obtaining permits and permission to bring this quantity of soil into a US mainland port would also be difficult, in part because of the sheer quantity of the soils. In addition to working out consent to enter a port, we would need to*

*obtain a US Department of Agriculture permit to bring the soils into the US. This would require a significant testing effort and protocol to assure the USDA that the soils did not contain prohibited microorganisms or other threats to US agriculture. In addition to the USDA requirements, once we sent this material off the Tanapag site, we must test each container (say 1500 containers) in accordance with DOT regulations. If the material tests less than 50 ppm, we would send it to RCRA permitted landfill. If it tests above 50 ppm, we would have to send it to a very costly TSCA permitted landfill.*

*For all of these reasons, the shipping logistics between Saipan and Guam and Guam and the US mainland would be very time consuming and costly to work out. This alternative would require much more funding that we have or than we may be able to obtain through the FUDS program. It would also take an unreasonable amount of time to execute this alternative.*

## 2. Land Crab Survey

The edible crabs survey were found to be contaminated with PCB. All areas affected must be survey for other food sources contamination and further soil testing of COC must be conducted. Find sources of PCB and COC, characterize and remediate all COC.

*USEPA undertook a substantial sampling effort of soil, water, and foodstuffs at Tanapag. Their findings are reported in the Final Field Sampling Report, Screening Level PCB Multi-Matrix Survey of Tanapag Village Areas. USEPA evaluated surface soil, stream sediment, lagoon sediment, concrete, ground water, surface water, fish, clams, landcrabs, chicken eggs, yams, and taro root. PCBs were found in some of the soil. The Corps evacuated soil containing greater than 1 ppm of PCB and stockpiled it for treatment.*

*No PCBs were found in the surface water samples. No PCBs were found in the ground water samples, but the wells were not located near to sites in Tanapag that were contaminated, so the Corps will conduct additional groundwater sampling to determine whether there is any PCB contamination in the groundwater at Tanapag.*

*No PCBs were detected in the clam, fish, or chicken egg samples. Trace levels of PCBs were found in one of nine taro and six of nine yam samples, but were not identifiable as a specific Aroclor, and were at levels far below USEPA's risk-based consumption limits for food.*

*Aroclor 1254 and 1260 were found in five of eight landcrabs collected near Cemetery 2 in May 2000, at concentrations between 0.078 to .039 mg/kg. Additional landcrabs were collected from four locations in Tanapag in December 2000 and analyzed for PCBs.*

*Background or reference samples from Smiling Cove tested between non-detect and 0.005 mg/kg of PCB. Crabs taken from the Cemetery 2 area tested between 0.004 to 0.032 mg/kg of PCB. Landcrabs taken near the Beach Park (SS-TT excavation area) tested between 0.004 to 0.960 mg/kg of PCB. Landcrabs taken near the southern stream tested 0.001 to 0.011 mg/kg. Landcrabs taken near Achugao Stream tested non-detect to 0.035 mg/kg.*

*Based on these results, the CNMI Department of Public Health has issues a health advisory warning residents to avoid consuming landcrabs.*

*The soil contaminated with PCB has been excavated. It is reasonable to expect that the PCBs in landcrabs will diminish as they go through several lifecycles from this point forward. Sampling of landcrabs should be done in the future to confirm whether this has taken place. USEPA's reported standard for unlimited consumption is .002 ppm, and the U.S. Food and Drug Administration's tolerance for PCB in the edible portion of fish and shellfish is 2.0 ppm, 21 CFR 109.30(a)(7) (1996).*

*At the community's request, portions of the landcrab samples were analyzed for 22 metals. The USEPA survey found that aluminum, iron, and manganese were higher in the landcrabs taken from Tanapag than in those from Smiling Cove, but they are not present at concentrations which are known to pose a significant risk to people who eat landcrabs. The Smiling Cove crabs contained higher levels of animony. No significant differences among the samples existed for heavy metals of concern including cadmium, chromium, lead, and mercury. No samples analyzed for any of these 22 metals were reported to reach a level of concern that would impact human health or the environment.*

*Soil Dioxins and Furans were also tested for and analyzed. The findings concluded that the concentration of dioxin/furans found in the soils are well below USEPA's threshold for acceptable risk in dioxin-contaminated soils. One furan congener of concern was found above the limit of detection, but its toxicity equivalence concentration is well below the residential soil remediation goal of 1 part per billion per 1998 USEPA Office of Solid and Hazardous Waste and Emergency Response (OSWER) Directive 9200.4-26.*

*Based on these sampling efforts, no additional surveys, including landcrab surveys, are necessary at this time. The Department of Defense Environmental Restoration Program (DERP), Formerly Used Defense Sites (FUDS) is only authorized to investigate and remediate contamination caused by a DOD activity that qualifies under the FUDS criteria for remedial action. FUDS is not a general environmental restoration program such as the Superfund.*

3. Fuel Farm Contamination Survey.

According to site investigation of Tanapag Fuel Farm, TFF, heavy metals are present, edible crabs are found to be contaminated both PCB and COC, e.g., dioxin, dibenzofuran, chlorobenzenes and didenzofurans PAH etc. TAG demands further investigation and actual characterization of contaminated soil and organisms involve in the diet of the Tanapag residents.

*The Final Report of the Site Investigation, Tanapag Fuel Farm, Saipan, CNMI, reports the data collected from sampling for petroleum products and metals. Chapter 7 of the report states the conclusions of this effort to confirm whether soil and groundwater contamination might be present from the past operation of the fuel farm. A total of 42 tank sites were identified during this investigation out of a total of 44 referenced in historic documents prepared for and on the site. Soil and/or groundwater sampling was conducted at 21 of the 42 sites identified. Sampling was concentrated at those sites where evidence of the original tank or berm structure remains.*

*The report concludes that metals regulated by the Resource Conservation and Recovery Act as solid or hazardous wastes are generally unremarkable. Somewhat elevated levels of lead may be present in surface soils located close to deteriorating tank remnants.*

*Petroleum hydrocarbons were detected in soil samples collected at approximately 15 tanks and at the Sadog Tasi site. No BTEX was detected in any soil sample collected during the investigation. TPH was detected in ground water at Tank 13. No BTEX was detected in any groundwater sample. Based on the results of the investigation, it appears that the only petroleum hydrocarbon contamination in the soils is associated with the fuel oil tanks. The groundwater beneath the site appears to be free of petroleum hydrocarbon contamination with the exception of the area near Tank 13.*

*The historic military inspection reports suggest that by the late 1940s, significant product loss was occurring at the fuel farm. This loss plus the nearly 1 million gallons in non-pumpable fuel offer the potential for significant contamination to be present at Tanapag. However, the absence of BTEX and TPH in the groundwater suggests that large-scale historical contamination at the site never occurred or has been remediated by natural degradation and attenuation processes. The only evidence of historic spillage detected during the investigation is in the immediate vicinity of the fuel oil tanks.*

*This project is in the FUDS inventory. It will be processed for consideration based on its relative risk to human health and the environment compared with other FUDS projects' risk. The projects posing the most serious risks to human health and the environment are funded first.*