Steve Dean /R9/USEPA/US
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To Steve Dean/R9/USEPA/US@EPA,
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Subject HPNS322 Draft Final

July 20, 2004

MEMORANDUM

SUBJECT: HPNS Building 322 Radiation Confirmation Survey

FROM: Steve M. Dean (SFD-8-B)
Superfund Technical Support

TO: Michael Work (SFD-8-3)
DOD and Pacific Islands Section

On Wednesday, June 30, 2004, I performed a radiological confirmation survey at the Hunters Point Naval Shipyard Building 322. Brian Gerry, a Navy contractor with New World Technology assisted me with the investigation. The building was used as the main gate security office during shipyard operations. The building itself has been removed and all that remains is the gravel substrate from the concrete slab foundation. The footprint of the building is still well defined by the sidewalk that surrounds three sides of the building. The back wall of the former building faced the base of a steep, grass covered, slope.

I conducted the radiation survey using two radiation measuring devices, a Ludlum 2221 Ratemeter/ Scalar with a Model 43-20 (3 inches by 3 inches) Gamma Scintillation Probe and an Exploranium GR130 Mini Spectrometer.

I selected a grassy area adjacent to the investigation area to serve as the reference site and performed a 100 percent walkover survey of that area. Next, I determined mean background by taking 10 one-minute counts at random locations within the reference area. I then calculated the mean background to be 16,700 (16.7k) counts per minute (cpm), equivalent to about 6 microRoentgen per hour (μR/hr). The highest reading I got in the reference site was 22k cpm designated Spectrum #3.

The mean background for the B322 investigation area is 18,289 cpm based on 10 one-minute counts at random locations about 7 microRoentgen per hour. The highest gamma reading found in the investigation area at the back fence is 26k cpm (Spectrum #1).

I performed gamma spectrum analysis with the GR130 at five locations; two reference locations and three investigation sites. All gamma spectra revealed only naturally occurring radionuclides with no fission product radionuclides above ambient fallout levels.

The GR 130 identified Potassium 40 (K40), a primordial naturally occurring radionuclide found in sea water, as the most abundant radionuclide at the most elevated gamma readings in the reference and investigation areas. Potassium (and its radioisotope) is very prevalent in California coastal soils so its presence at Hunters Point is to be expected. K40 is water soluble and tends to accumulate in low-laying areas such as Sample Point #1 located at the base of a slope.

The spectra taken on the gravel footprint of the building revealed trace amounts of Thorium 232 (Th232), another primordial natural radionuclide, at levels that are consistent with those found in concrete gravel aggregate. It is the presence of these trace levels of Th232 that accounts for the slightly higher (less than 1 μR/hr) background in the investigation area.

I conclude that there is no radiological contamination impacting the environment of Hunters Point Naval Shipyard due to activities previously conducted at the former Building 322. Further radiological investigation at this site is not warranted. Based on radiological issues the site of former Building 322 is eligible for release for unrestricted use.

If you care to discuss this issue further contact me at 415 972 3071. Thank you.