

# Former Nike Missile Launch Site #92 Kingston, Washington

The Washington State Department of Health, in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR), completed a health consultation that looked at whether people may be exposed to chemicals in groundwater, surface water, and soil at the former Nike Missile Site #92 in Kingston. This included reviewing citizens' concerns and environmental sampling data provided by the Environmental Protection Agency (EPA), US Army Corps of Engineers (ACE) and Kane Environmental, Inc (KEI). This fact sheet summarizes the results of the health consultation.

## Site Background

The former Nike Missile Launch Site #92 is located approximately one mile west of the town of Kingston, in Kitsap County, Washington and covers around 50 acres. The area was used as a missile site from 1954-1975. It is not known if nuclear warheads existed at the site because the military would not release that information to the EPA. Currently the Spectrum Community School and the North Kitsap County School District Bus Maintenance Facility occupy part of the site. The rest of the site is undeveloped.

The Spectrum Community School (a small alternative High School) has been located in a building formerly used as a barracks since the early 1980's. The High School serves about 150 students from all over the North Kitsap School District. Students attend the school for a period of 1-3 years. No health concerns from students or parents have been reported to the principal since the school was placed on the city's drinking water system 10 years ago. The North Kitsap School District is now considering building a new high school on the former Nike missile launch site.

In October 2003, EPA began the process for a site evaluation. In May 2004, EPA contractors collected and analyzed soil and ground water samples. In July 2004, EPA completed their inspection of the Kingston Nike site. EPA concluded that levels of chemicals in soil and drinking water wells were so low that no further action would be required.

A community member raised the issue that nuclear warheads may have existed at the site and requested that the area be tested for radiation. The state Department of Health and EPA carried out a radiation field survey in August of 2004 for alpha and beta-gamma radiation and conducted private drinking water sampling for isotopic plutonium and uranium.

## Community Concerns About Cancer

A community member petitioned ATSDR, who then asked the state Department of Health to conduct this health consultation due to concern over perceived elevated cancer cases in the Kingston community related to the former Nike missile site. The Department of Health evaluated cancer data from the state cancer registry for Kingston area, Kitsap County, and Washington State. The rate of cancer within Kingston and Kitsap County is not significantly different from the rate for Washington State. These results, combined with the lack of identifying any cancer-causing contaminants at levels of public health concern at the site, lead the Department of Health to conclude that **no further cancer investigation is needed.**



Mike Brennan of DOH and Steve Merritt of Ecology & Environmental, Inc. search for evidence of radiation at the former Nike Missile site in Kingston, Washington.

## Contaminants of Concern

Contaminants of concern at the site include arsenic, antimony, manganese, and radiation. Arsenic is a naturally occurring element in the earth's soil. It is difficult to know how arsenic will affect someone because people react differently to arsenic. Illnesses linked to long-term exposure to small amounts of arsenic in drinking water are bladder cancer, lung cancer, skin cancer, liver cancer, prostate cancer, kidney cancer, cardiovascular disease, diabetes, nerve damage, and changes to the pattern of color or thickness of the skin. **Levels of arsenic at the Nike site are too low to cause illness.**

Antimony is a naturally occurring element in the earth's soil. Exposures to antimony are caused by inhaling contaminated soil or dust particles, and by ingesting contaminated water or food. Antimony contaminated soil can accidentally be ingested by hand to mouth activity that could increase exposure. **Levels of antimony at the Nike site are too low to be a human health concern.**

Manganese is a naturally occurring metal that is found in many types of rocks. Manganese is an essential trace element and is necessary for good health. Manganese can be found in several food items, including grains and cereals, and is found in high amounts in other foods, such as tea. Manganese can also be found in pesticides and as a fuel additive in gasoline. Manganese was detected in drinking water from some private wells. The Kingston area is known to have high manganese levels and it is considered to be naturally occurring. **However, the levels of manganese at the Nike site are too low to be a human health concern.**

Concern was expressed that radioactive contamination might be present on the site. The Department of Health's Office of Radiation Protection and EPA contractor, Ecology and Environmental, Inc. (E&E), conducted a field investigation to determine the levels of radioactive contamination onsite. The field survey included roadways and building access areas. Alpha and beta-gamma radiation measurements were taken at the same coordinates. Background instruments survey samples were taken above and off-site of the Nike site. Drinking water samples were also collected and analyzed at the Department of Health's Public Health laboratory. Several private wells next to the Nike site and the closest municipal well were sampled. The water samples were analyzed for plutonium and uranium. Plutonium and uranium were selected because they were used in nuclear weapon warheads. **The exploration survey showed no elevated radiation at the former Nike missile site.** The field investigation and water samples showed that **radiation contamination is not present above natural background levels, nor caused by the operation of the former Nike site.**

## Conclusions

1. No current or future health hazard exists for children exposed to soil at Nike Site #92.
2. No current or future health hazard exists from exposure to drinking water near or at Nike Site #92.
3. Based on an evaluation of all cancer types in the area, the Department of Health found no significant elevations in cancer incidence for Kingston area or Kitsap County.

**For more information, contact Washington Department of Health**

**Lenford O'Garro**

Public Health Advisor

1-877-485-7316

Lenford.O'Garro@doh.wa.gov

Health consultation reports are posted on the Department of Health website

(<http://www.doh.wa.gov/ehp/oehas/consults.htm>).