National Aeronautics and Space Administration
**Goddard Space Flight Center**

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# ANNOUNCEMENT

## SUBJECT: Goddard Space Flight Center (GSFC) Drinking Water

Recent news articles published in the Washington Post have raised concerns and awareness about drinking water supplies throughout the country and specifically in the Washington D.C. area. Although Goddard's drinking water supply is safe, a preliminary study has shown that when water remains in the older plumbing systems overnight, it may allow small amounts of lead from fittings and fixtures to dissolve into the water. This may only be a problem for plumbing installed before 1987, which is when lead was used in water supply fixtures and to solder joints everywhere. Many Goddard buildings, other buildings in the metro area, and many of our homes potentially have this problem.

To determine the quality of GSFC drinking water and ensure the safety of GSFC's population, the Center initiated a project to sample drinking water at various locations throughout the Center. The sampling locations were selected to represent a variety of water detention times, and to span the age ranges of buildings on the Goddard campus.

The Safety and Environmental Division has recently completed the first phase of testing our drinking water by assessing the water in Buildings 11 and 12. Results have shown that the first draw of water, which occurs first thing in the morning, may contain lead in excess of the Environmental Protection Agency (EPA) action level of 0.015 milligrams lead per 1 liter water (mg/l). This occurred in roughly half of the 33 water samples analyzed in those buildings. Lead in drinking water is regulated by EPA through a treatment technique intended to reduce the level of a contaminant in drinking water systems by controlling the corrosiveness of their water. The 0.015 mg/l action level for lead applies to providers of drinking water (Washington Suburban Sanitary Commission [WSSC]) and not to users (GSFC). Even though GSFC's water system is not specifically subject to this EPA regulation, the regulation provides a point of reference for evaluating results, and taking appropriate action.

All the samples obtained after the water was allowed to run for a few minutes had lead levels below the EPA action level. The Safety and Environmental Division is proceeding to sample the water from several other Goddard locations. However, given the age of the buildings, the results are expected to be similar to those from buildings and homes with plumbing that predates 1987. Building 90 (Child Care Center), which has relatively new plumbing did not exceed the action level from any of the five sample locations.

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The Goddard Environmental Health group has conducted a risk assessment, using the results from the Buildings 11 and 12 study, and concluded that a healthy 150 lb. person must consume 5.6 gallons of water daily at 0.094 mg/l lead level (the highest level obtained during the study) to be at an elevated risk; 1.3 gallons daily for a 130 lb. pregnant woman; and 0.9 gallons daily for a 45 lb. child. Given these results, the water supply does not pose a realistic health risk. Note that these daily quantities would have to be consumed every day for several years, from a source that has a lead content as high as the location with the highest concentration measured during this study. There is no allowance for the natural dilution of the lead in the water that occurs when the spigot is flushed. The daily quantity of lead would need to be drawn from a source entirely at one time, typically early morning, before the water has been flushed through the system.

WSSC, our water supplier, recommends customers take these actions in their homes: "Customers concerned about lead, particularly if they have an "at-risk" person in their household (i.e., young children, pregnant women, and nursing mothers) should flush the cold water tap until the water turns noticeably colder (usually for 30 seconds to 2 minutes) before using water for drinking or cooking. Hot water should not be used for drinking or cooking as lead levels generally are higher in hot water."

The Facilities Management Division is conducting a Centerwide survey to identify water fountains that were manufactured before 1987; these units have the potential to have lead lines. All water fountains identified during the survey will be replaced. In addition, signs will be posted at drinking water sources throughout the buildings to remind users to run the water before using it for drinking or cooking.

**Based on the results of the study, the risk assessment, and EPA recommendations, all GSFC employees are encourage to allow the water to run for a few minutes early in the morning, or anytime that it has not been turned on for several hours, before using it for drinking or cooking, just as you do at home.**

The following links contain information about lead in drinking water, its health effects, facts, and other helpful information from EPA, WSSC, and the Center for Disease Control:
http://www.epa.gov/safewater
http://www.wssc.dst.md.us/info/leadinformation/leadinformation.html
http://www.cdc.gov/nceh/lead/spotLights/leadinwater.htm

For the sample results, visit GSFC Environmental Program Management's Web site at http://environment.gsfc.nasa.gov/, or call the Safety and Environmental Division at x6-4613.

Additional information and results of future studies will be posted and distributed as soon as they become available.

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