



National Institute for Occupational
Safety and Health
1090 Tusculum Avenue
Cincinnati OH 45226

July 28, 2016
HHE 2016-0152

Mr. Chris Bolinger
Chief, Buildings Operations Branch
General Services Administration
2300 Main Street
Kansas City, Missouri 64108

Dear Mr. Bolinger:

This letter is in response to your health hazard evaluation (HHE) request to the National Institute for Occupational Safety and Health (NIOSH). The request concerned potential employee exposures to legacy contaminants such as lead and asbestos at the Goodfellow Federal Center (GFC), St. Louis, Missouri. We visited the facility in late June to meet with employees to hear their concerns about legacy contamination and to look for pathways for the legacy contamination to enter office space. This letter is to follow-up on the results of recent industrial hygiene testing in the Veterans Benefits Administration (VBA) areas and blood lead level (BLL) testing on VBA employees. This industrial hygiene testing was done by a contractor and the BLLs were done by the Veteran's Administration Medical Center after our visit and the results were shared with us.

In our letter dated July 11, 2016, (sent shortly after we visited the facility), we noted the following:

- The VBA file clerks spent their work day in the expansive Veterans Administration Management Center file room. They filed incoming records and pulled records of veterans to be sent to regional offices.
- The file room had an exposed ceiling and beams that had been sprayed with fireproofing material.
- The air handling units providing file room ventilation were very sophisticated and equipped with medium efficiency pre-filters and high-efficiency secondary air filters.
- The air handling units for the file room had direct steam humidification and ultraviolet germicidal irradiation lamps in the ductwork.
- Results from surface sampling for lead done by a General Services Administration (GSA) contractor in the VBA file room prior to our visit were below the analytical laboratory's limit of detection. However, surface sampling on the top of some file cabinets and on a lower shelf by an Occupational Safety and Health Administration (OSHA) compliance officer found lead levels up to 3000 micrograms (μg) per wipe sample. On the basis of the limited OSHA sampling results we recommended BLL testing on VBA file room employees, requiring employees to wear gloves while handling files, and encouraging employees to wash their hands prior to eating in their designated break room. However, the VBA made a decision to stop working in the file room.

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In late June, GSA contracted with an independent environmental consultant to collect 235 additional surface wipe samples. The purpose of this sampling was to further characterize the potential surface contamination in the file room and adjacent VBA offices. These samples were analyzed for lead and several other metals, including chromium, arsenic, and cadmium. In most instances each surface wipe sample was collected over 100 square centimeters (100 cm²). VBA file room employees (approximately 75) also received a BLL test.

The following is our summary of the results of the surface wipe samples and BLL tests.

- The hazardous metal most frequently detected in the surface wipe samples, and at the highest concentrations, was lead; lead levels ranged from not detected to 52 ug/100 cm².
- The wipe sample results fell into three groups:
 - 35% not detectable, that is, below the laboratory limits of detection of either 0.5 µg or 1.0 µg of lead per sample
 - 43% below 4.3 µg per 100 cm², the Environmental Protection Agency (EPA) guideline for cleanup of commercial and residential buildings following the World Trade Center attack.
 - 22% above the EPA guideline
- None of the 235 surface wipe sample results were close to the levels found in the wipe samples taken during the OSHA investigation.
- Some employees had expressed concern that files transferred from the file room to the VBA offices might be contaminated. Most of the 24 surface samples taken on the outside and the inside of the paper files did not detect any metals. Lead levels were very low in the wipe samples where metals were detected (range ND to 3.1 µg per 100 cm²).

Most (75%) of the 235 samples had no detectable levels of cadmium (limit of detection was 0.2 µg per sample). Of the samples with detectable cadmium, the median concentration was 0.92 µg per 100 cm² (range 0.21 to 34 µg per 100 cm²). There are no EPA guidelines for cadmium on surfaces. Arsenic was not detected in any samples. Other generally nonhazardous metals were detected, including trivalent chromium and selenium (both essential elements for humans), barium, and silver.

It is important to note that metals, both hazardous and nonhazardous, are present on surfaces in many environments in low levels. For example, a recent NIOSH investigation in an office found lead in 15 of 15 surface wipe samples (in concentrations ranging from the limit of detection to 10 µg per 100 cm²), cadmium in 15 of 15 samples (in concentrations ranging from the limit of detection to 3.4 µg per 100 cm²), and barium in 15 of 15 samples (in concentrations ranging from the limit of detection to 77 µg per 100 cm²). At that facility, there were no obvious sources of these metals and no manufacturing or production activities that generate these metals were performed.

It was reported to us that all but four of the 75 employees' BLLs were below the laboratory limit of detection of 2 µg per deciliter of blood (µg/dL). The lead levels of these four employees (3 µg/dL) were within the range of lead that is found in the U.S. general population, which is up to 3.36 µg/dL. On the basis of these results we do not recommend any further BLL testing or

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biological testing for other metals of VBA employees. Cleaning of the VBA facility is ongoing. It will be important to maintain good housekeeping after this major cleaning effort is complete.

Thank you for your cooperation with our ongoing evaluation. We encourage you to share this letter with your employees. We will be visiting GFC next week to meet with employees and managers again. After that, we will prepare our final report for you. If you have questions, please contact Gregory Burr at 513-841-4582 or Elena Page at 513-458-7144.

Sincerely yours,

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Industrial Hygiene Team Lead

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