DEPARTMENT OF HEALTH AND HUMAN SERVICES Public Health Service

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

July 11, 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 employee exposures to legacy contaminants such as lead and asbestos at the Goodfellow Federal Center (GFC), St. Louis, Missouri. This letter summarizes our visit from June 27, 2016 through June 30, 2016.

Before the site visit, NIOSH investigators reviewed records of prior environmental sampling and analysis at GFC performed by consultants hired by the General Services Administration (GSA). The goals of our site visit were (1) to determine if potential pathways existed for contaminants from the basement, tunnels, and crawl spaces to enter occupied offices; (2) to determine if there were pathways for contaminants to enter through the outdoor air intakes in the air handling units that provided ventilation to the occupied offices; and (3) to meet with employees to listen to their concerns and provide our expert opinion concerning occupational safety and health matters. Our activities included the following:

- We checked the direction of air flow at the entrances to the basement and tunnels in buildings 104, 104E, 104F, 105, 105E, 105F, 107, and 110.

- We conducted walk-through surveys of the mechanical rooms housing the air handling units for buildings 103, 104 (including annex buildings), 105 (including annex buildings), 107, and 110.

- We met with employer and employee representatives from GSA, maintenance and housekeeping contractors, and tenant agencies at the office complex.

At the end of our visit, we met with employee and employer representatives. We summarized our activities, and shared preliminary observations, and recommendations. These are described below.

- We reviewed all environmental exposure evaluations posted on the GSA intranet, dating from 2003 until 2016. These documented soil contamination with polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), trichloroethylene (TCE), and

lead, including the dirt floor in crawlspaces beneath some GFC buildings. Friable (easily crumbled) asbestos-containing material was found in crawlspaces. In 2016, air sampling for lead and asbestos in the crawlspaces did not detect either substance, but sampling was done while no work was being performed. Air sampling in the office spaces did not detect lead or asbestos, suggesting that neither substance was being circulated through the ventilation systems. Surface sampling results for lead in office spaces were all below the limit of detection (LOD), but lead was found on surfaces in crawlspaces, tunnels, mechanical rooms, on metal beams above a dropped ceiling, on the top of ceiling tiles, and in some stairwells, among other places. The Social Security Administration contracted Federal Occupational Health (FOH) to perform additional sampling in building 110. FOH investigators concentrated on air and surface sampling for lead and asbestos in occupied office areas, and all results were below the LOD.

- Potable water testing had been done and did not demonstrate contamination with lead; however, we recommended expanded water testing in all buildings that would include more Environmental Protection Agency regulated contaminants known to be present in the soil surrounding the water lines, such as PCB s, PAHs, and TCE. We made our recommendation because of the potential for backsiphonage (negative pressure in the system that draws contaminated water into the potable water supply). We also recommended continued testing for metals including lead because of the potential for lead to leach from older pipes.

- The entrances to the basement, tunnels, and crawl spaces in buildings 104 and 107 were under negative air pressure relative to the offices. This means that air flowed from offices into the basement, which would help minimize the migration of odors and airborne contaminants potentially coming up from the basement and into the offices.

- A powered fan adjacent to building 103 provided exhaust ventilation for the basements, tunnels, and crawl space network connecting buildings on the GFC campus, which would help to maintain the negative pressure in these areas. This exhaust fan was recently set to operate 24 hours per day, 7 days per week.

- The entrances to the basement, tunnels, and crawl spaces in buildings 105 and 110 were found to be under neutral pressure relative to the offices (instead of negative air pressure as found in buildings 104 and 107), meaning that air neither consistently flowed into nor from the basement. This may be because these entrances were farthest from the basement/tunnel exhaust ventilation fan located adjacent to building 103. We recommended that these areas be maintained under negative pressure relative to the offices. One method to accomplish this would be by installing exhaust fans in the exterior walls to provide additional exhaust ventilation since part of building 105 and 110 basement walls were slightly above grade.

- We conducted walk-through surveys of mechanical rooms housing air handling units for buildings 103, 104, 105, 105E, 105F, 107, and 110. All but the building 107 mechanical room (in the basement) were located on rooftops. The mechanical rooms were uncluttered, and the air handling units appeared well maintained. None of the outdoor air intakes for these air handling units were in, connected to, or near the basement/tunnel network.

- All but two of the air handling units that we surveyed had MERV 8 air filters. MERV stands for "minimum efficiency reporting value" and is a rating scale developed by ASHRAE, an international organization that develops consensus standards dealing with ventilation. MERV 8 air filters are a common air filter used in office buildings. Newer air handling units in two buildings (104 and 110) were equipped with MERV 8 prefilters followed by much higher efficiency MERV 14 secondary filters. However, two of the air handlers that we inspected in building 103 were equipped with less efficient (less than MERV 8) roll-type air filters. We were informed by the maintenance contractor that a request was in process to replace these roll filters with MERV 8 air filters.

- The most common concerns expressed by employees in our meetings were:
    - Is there lead-containing dust on top of the suspended ceiling tiles, or on beams located above the ceiling tiles, and could this dust enter the office spaces?
    - Are contaminants from the crawlspaces entering the office spaces?
    - Is lead or asbestos being recirculated through the ventilation systems in the office spaces?
    - Is the water safe to drink?
    - Should employees have medical testing specific to these potential exposures?

- We learned more about the different tenant agencies and their work from our meetings, which helped direct our recommendations:
    - Contract employees of ICE JV perform all maintenance work at the complex. This requires routine entry into the crawlspaces, tunnels, mechanical rooms, and work above ceiling tiles. We were informed that until recently, the contractors were not fully informed of the conditions of the work.
        - Because of the nature of their work and potential exposures, we recommend that the employees performing maintenance each receive a medical evaluation consisting of a detailed occupational history and physical examination performed by an occupational medicine physician.
        - Because of their potential exposure to asbestos fibers, which have been found on asbestos-wrapped pipes, and in the soil in the crawlspaces and tunnels, the maintenance employees should have a baseline chest x-ray with B-reading (a specialized interpretation of the chest x-ray, examining it for changes caused by certain dusts, like asbestos dust), and spirometry.

        - Because the maintenance employees are disturbing materials with a significant lead content in the crawlspaces, tunnels, and above the ceiling spaces, in a manner that could reasonably be expected to cause potentially harmful exposure through inhalation or ingestion, they should have periodic blood lead level (BLL) testing. We were made aware that the ICE JV maintenance employees had low BLL results (below 3 micrograms per deciliter) twice recently; however, they had not been in the areas of concern for 2 months. We recommended performing BLL tests on all lead-exposed employees every 6 months. The continuing need for BLL testing should be re-evaluated in the future for employees with repeated very low lead levels to determine if their work could reasonably expected to cause potential harmful exposures.
    - We also recommended that personal air sampling be conducted while these employees perform their usual work duties in the crawlspaces and tunnels to better assess the potential exposures from the work.
    - GSA employees also intermittently enter the crawlspaces, tunnels, and mechanical rooms to inspect contractor work. These employees should have a one-time history and physical examination performed by an occupational medicine physician, a chest radiograph with a B-reading, spirometry, and a BLL test.
    - The Defense Information Systems Agency (DISA) had employees called escorts. For security reasons escorts were required to accompany non-DISA employees during all work in their office space, crawlspace, and mechanical rooms. These employees should have a one-time history and physical examination performed by an occupational medicine physician, a chest radiograph with a B-reading, spirometry, and a BLL test.
    - The Veterans Benefits Administration has file clerks who spend their day in the expansive Veterans Administration Management Center file room, filing incoming records and pulling 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 in the past. The ventilation system for this area is very sophisticated and includes MERV 8 and MERV 14 air filters, humidification, and ultraviolet germicidal irradiation lamps in the ductwork. Results from limited surface sampling for lead done by a GSA contractor in this area were below the LOD, but additional surface sampling on the top of file cabinets and on a lower shelf done by an Occupational Safety and Health Administration compliance officer found lead levels of about 3000 micrograms per sample. We recommended BLL testing on these employees, requiring employees to wear gloves while handling files, and washing hands prior to eating in the designated break room. We noted that additional recommendations would be made once the results of the BLLs are obtained.
    - The remaining employees working at the GFC perform office work that does not require entry into the basement, tunnels, or crawlspaces, or routine entry into the

Veterans Administration Management Center file room. We do not recommend any medical testing of these employees. Two employees reported having BLL tests done by their healthcare provider, and both were below the LOD. It is important to note that an employee in building 110 reported to us that that they had an elevated BLL of 5 micrograms per deciliter. However, when we examined the employee's laboratory report we found it had been misinterpreted and the BLL result was actually below the LOD of 3 micrograms per deciliter. We did recommend that all employees have documentation of the potential for exposure to lead and asbestos noted in their personnel file.

We are reviewing environmental sampling and analysis data collected by the Occupational Safety and Health Administration, and are awaiting the results of BLL testing conducted on Veterans Benefits Administration employees. If we need to return to GFC we will contact you to make those arrangements. When we complete our evaluation, we will send you a final report.

You may receive a short survey from our office. We are interested in your thoughts about our evaluation so far, and we encourage you to complete the survey.

Thank you for your cooperation with this ongoing evaluation. We encourage you to share this letter with your employees. If you have questions, please contact Gregory Burr at 513-841-4582 or Elena Page at 513-458-7144.

Sincerely yours,

Gregory A. Burr -S

Digitally signed by Gregory A. Burr -S
DN: c=US, o=U.S. Government, ou=HHS, ou=CDC, ou=People, 0.9.2342.19200300.100.1.1=1000405711, cn=Gregory A. Burr -S
Date: 2016.07.14 11:46:19 -04'00'

Gregory A. Burr, CIH
Industrial Hygiene Team Lead

PAGE.ELENA.H.1102422003

Digitally signed by PAGE.ELENA.H.1102422003
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USPHS, cn=PAGE.ELENA.H.1102422003
Date: 2016.07.14 11:43:14 -04'00'

Elena Page
Medical Officer
Hazard Evaluations and Technical Assistance Branch
Division of Surveillance, Hazard Evaluations and Field Studies

cc:
J. Trader, General Services Administration, Project Manager
A. Azevedo, General Services Administration, Regional Administrator
K. Rothmier, General Services Administration, Deputy Regional Administrator

L. Ford, Social Security Administration, Acting Director, Office of Environmental Health and Occupational Safety
K. Ausbrooks, Department of Energy and Climate Change, Director
T. Dutko, USDA Food Safety and Inspection Service, Laboratory Director
S. Durbin, USDA Animal and Plant Health Inspection Service, manager representative
G. Lommen, U.S. Army Audit Agency, manager representative
R. Pearson, Veterans Benefits Administration, AFGE Local 2192
M. Hahn, Social Security Administration, NTEU Chapter 14
E. Asadorian, USDA employee representative
B. Troupe, MGI Services, employee representative
W. Chapman, DECC, employee representative
T. Mallinson, USDA Food Safety and Inspection Service, employee representative