U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF INSPECTOR GENERAL

Catalyst for Improving the Environment

Evaluation Report

Vapor Intrusion Health Risks at Bannister Federal Complex Not a Concern for Buildings 50 and 52, Unknown for Other Buildings

Report No. 11-P-0048

January 5, 2011

Report Contributors: Hilda Canes Garduño
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Abbreviations

DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
GSA	U.S. General Services Administration
NNSA	National Nuclear Security Administration
OIG	Office of Inspector General
TCE	Trichloroethylene
VOC	Volatile organic compound

Cover photos: *from left to right:* Bannister Federal Complex, GSA buildings 50 and 52. (EPA OIG photos)

U.S. Environmental Protection Agency
Office of Inspector General

11-P-0048
January 5, 2011

At a Glance

Catalyst for Improving the Environment

Why We Did This Review

The U.S. General Services Administration (GSA) Office of Inspector General asked for our assistance in responding to a congressional inquiry. We evaluated EPA Region 7's actions to (1) assess and address the potential vapor intrusion risk at Bannister Federal Complex buildings 50 and 52, and (2) characterize the public health risk at Bannister Federal Complex.

Background

Bannister Federal Complex is a 310-acre federal property located in Kansas City, Missouri. Several contaminated ground water plumes exist beneath the complex. Both GSA and the U.S. Department of Energy National Nuclear Security Administration control the site. The GSA Office of Inspector General is responding to allegations that employees may have become sick due to chemical exposures potentially occurring at the site.

For further information, contact our Office of Congressional, Public Affairs and Management at (202) 566-2391.

To view the full report, click on the following link:
www.epa.gov/oig/reports/2011/20110105-11-P-0048.pdf

Vapor Intrusion Health Risks at Bannister Federal Complex Not a Concern for Buildings 50 and 52, Unknown for Other Buildings

What We Found

Testing at Bannister Federal Complex in February 2010 revealed elevated levels of volatile organic compounds (VOCs) in the soil vapor beneath the foundations of buildings 50 and 52. EPA Region 7 assisted GSA in evaluating the vapor intrusion risk for these buildings. Only trichloroethylene vapors were observed to be intruding into building 50 from the contaminated ground water. Building 50 contains office space and building 52 has a child care facility.

Region 7 assessed the health risk from inhaling indoor air in the two buildings in accordance with EPA risk assessment procedures. The indoor air chemical concentrations were below acceptable risk levels for both short- and long-term exposure for the 14 VOCs measured and, therefore, are not a health concern. As a precaution, Region 7 recommended and reviewed the installation of soil vapor removal systems in both buildings in February 2010. Subsequent testing in March 2010 showed that contaminant levels in the soil vapors beneath both buildings were reduced. Trichloroethylene levels in the indoor air of building 50 were also reduced.

Although Region 7 conducted its assessment in accordance with EPA-approved procedures, additional actions would provide a more comprehensive picture of the chemical hazards in the indoor air and ground. These actions include testing for additional VOCs and assessing total VOC exposure levels in the buildings.

Not all of the other Bannister Federal Complex buildings with underlying or nearby contaminant plumes have been assessed for soil vapor intrusion. As a result, the public health risks in those buildings have not been determined.

What We Recommend

We recommend that Region 7 test for additional VOCs for all future air, soil vapor, soil, and ground water samples in and around buildings 50 and 52. After discussions with Region 7, we revised our second recommendation to continue oversight work by assessing the responsible parties' efforts to evaluate inhalation health risks at all other Bannister buildings over or near contaminated ground water plumes. Region 7 staff concurred with our recommendations and committed to completing actions that would meet the intent of both recommendations. In its final response to this report, Region 7 should provide a corrective actions plan for both recommendations, including estimated or actual milestone completion dates.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

January 5, 2011

MEMORANDUM

SUBJECT: Vapor Intrusion Health Risks at Bannister Federal Complex Not a Concern for Buildings 50 and 52, Unknown for Other Buildings
Report No. 11-P-0048

FROM: Arthur A. Elkins, Jr.
Inspector General

TO: Karl Brooks
Regional Administrator, EPA Region 7

This is a report on the subject evaluation conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG and does not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The estimated cost of this report, calculated by multiplying the project's staff days by the applicable daily full cost billing rates in effect at the time plus travel costs, is $232,360.

Action Required

In accordance with EPA Manual 2750, you are required to provide a written response to this report within 90 calendar days. Your response will be posted on the OIG's public website, along with our comments on your response. Your response should be provided in an Adobe PDF file that complies with the accessibility requirements of section 508 of the Rehabilitation Act of 1973, as amended. If your response contains data that you do not want to be released to the public, you should identify the data for redaction. You should include a corrective actions plan for your actions, including milestone dates. We have no objections to the further release of this report to the public. This report will be available at http://www.epa.gov/oig.

If you or your staff have any questions regarding this report, please contact Wade Najjum, Assistant Inspector General for Program Evaluation, at 202-566-0832 or najjum.wade@epa.gov; or Eric Lewis, Director, Special Reviews, Office of Program Evaluation, at 202-566-2664 or lewis.eric@epa.gov.

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Introduction

Purpose

In February 2010, the U.S. General Services Administration (GSA) Office of Inspector General (OIG) contacted the U.S. Environmental Protection Agency (EPA) OIG to ask for assistance in responding to a congressional request from Missouri Senator Christopher (Kit) Bond. The congressional request was in response to allegations that employees at Bannister Federal Complex may have fallen ill due to exposure to hazardous contaminants. Our objectives were to evaluate:

- EPA Region 7's efforts to assess and to address the potential vapor intrusion risk at buildings 50 and 52 of Bannister Federal Complex.
- EPA Region 7's actions to characterize the public health risk at Bannister Federal Complex.

Background

Bannister Federal Complex

Bannister Federal Complex is a 310-acre federal property located in Kansas City, Missouri. The complex is controlled by both GSA and the U.S. Department of Energy's (DOE's) National Nuclear Security Administration (NNSA). Currently, more than 2,300 NNSA contract employees work at Bannister. Office and warehouse space not controlled by NNSA is owned and operated by GSA. Approximately 1,900 federal employees work in the nonmanufacturing space. NNSA plans to relocate to another facility starting in 2012. A GSA relocation is under discussion.

In the past, aircraft engines were manufactured at the site. Currently, NNSA builds nonnuclear components for nuclear weapons and makes electrical, electromechanical, mechanical, and plastic components at the site. From 1942 to the mid-1970s, neither the chemicals used nor the solid waste disposal at Bannister were subject to modern standards for managing hazardous materials in the workplace or environment. From 1942 to 1964, the U.S. Department of Defense operated a landfill at Bannister to dispose of manufacturing waste. The wastes included solvents, metals, and petroleum, which ultimately contaminated the soil and ground water at the site.

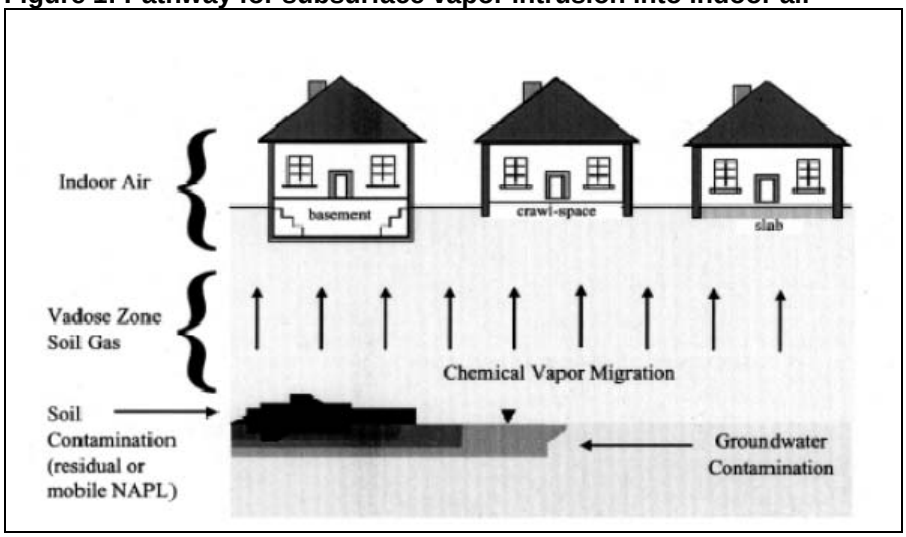
After ownership of Bannister transferred to DOE and GSA in 1976, DOE took action to control and clean up its portion of the property. GSA, for its part, conducted periodic sampling and analysis of soil, ground water, and air quality. In May 2008, a preliminary assessment and site inspection report was prepared for the GSA-managed portions of Bannister. The report recommended assessing the

indoor air of buildings 50 and 52 for vapor intrusion and monitoring ground water near building 50 for any changes in contaminant concentrations. The report also made recommendations for other GSA-managed areas of Bannister.

Vapor Intrusion

Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in contaminated soil or ground water can emit vapors. The vapors may migrate through the subsurface soil as soil vapor and into the indoor air spaces of overlying buildings (figure 1).

Figure 1: Pathway for subsurface vapor intrusion into indoor air



Source: *OSWER 2002 Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance).*

Note: Nonaqueous phase liquids, or NAPLs, are contaminants that, like oil, do not dissolve readily in water. Their vapors may migrate through the soil space of the vadose zone (the unsaturated zone above ground water) into overlying buildings, contaminating the indoor air.

Current and former National Priorities List sites could have extensive vapor intrusion issues and pose a significant risk to the public. In 2002, EPA issued draft guidance based on its understanding at the time of vapor intrusion. The guidance included technical and policy recommendations for determining whether vapor intrusion posed a health risk at sites. In December 2009, the EPA OIG issued Report No. 10-P-0042, *Lack of Final Guidance on Vapor Intrusion Impedes Efforts to Address Indoor Air Risks.* We recommended that EPA issue final guidance to establish current Agency policy on the evaluation and mitigation of vapor intrusion risks. We also recommended that the Agency finalize toxicity values for trichloroethylene (TCE) and perchloroethylene—common contaminants associated with vapor intrusion. The Agency agreed with our recommendations and provided milestones. The Agency has committed to release the final vapor intrusion guidance by November 2012.

Noteworthy Achievements

Region 7 assisted the Missouri Department of Natural Resources and GSA in January 2010 by reviewing GSA's air sampling plan and providing sampling oversight. The Missouri Department of Natural Resources also requested that Region 7 evaluate risk management at the GSA portion of Bannister. Region 7 determined that collaborating and sharing technical expertise, equipment, and resources with GSA would more rapidly and cost effectively assess and address the health risks in buildings 50 and 52.

Region 7 signed an interagency agreement with GSA in March 2010, with activities beginning beforehand, to perform the following:

- Conduct a site reassessment focusing on buildings 50 and 52.
- Complete indoor air and vapor intrusion sampling, ground water sampling, soil vapor and soil sampling, outdoor air sampling, and air quality monitoring of these buildings.
- Provide technical and oversight support for the installation of soil vapor removal systems in buildings 50 and 52 as a precautionary measure against vapor intrusion.
- Provide support to GSA in public meetings and other community relations activities.

Region 7 also established an environmental work agreement with GSA in April 2010 to address other issues identified in the 2008 preliminary assessment and site inspection report.

To date, Region 7 conducted three of four rounds of sampling, recommended and supervised the installation of soil vapor removal and ventilation systems, and performed risk assessments for buildings 50 and 52. Region 7 also established a community advisory panel for Bannister.

Scope and Methodology

We conducted our review from March to October 2010 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform our review to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our objectives.

To accomplish our objectives, we reviewed documents provided by the GSA OIG and EPA Region 7. We conducted interviews with relevant GSA OIG staff in

Kansas City, Missouri, and EPA Region 7 staff in Kansas City, Kansas. We also reviewed federal statutes, regulations, and Agency guidance.

We reviewed two rounds of sampling data collected by Region 7 in 2010 to assess the potential for vapor intrusion in buildings 50 and 52. We also identified and assessed the actions Region 7 took to address the risk for vapor intrusion. We evaluated Region 7's health risk assessment in accordance with the EPA Superfund guidance document, *Supplemental Guidance for Inhalation Risk Assessment*. The assessment evaluates the amount of risk contributed from inhaling potential indoor air contaminants and not other routes of exposure. Henceforth, inhalation risk will be referred to as "health risk."

The primary contaminants of concern for vapor intrusion at Bannister are the volatile organic compounds (VOCs), particularly TCE and its byproducts, 1,2-dichloroethylene and vinyl chloride. We conducted our evaluation for these primary contaminants of concern and the other VOCs tested.

Vapor Intrusion Assessed and Addressed Only at Buildings 50 and 52 of Bannister Federal Complex

Region 7's 2010 test results for vapor intrusion in buildings 50 and 52 showed elevated levels of VOCs in the soil vapor beneath the foundations of both buildings. However, only TCE vapors were observed to be intruding into building 50 from the contaminated ground water. Chemical levels in the indoor air do not pose a health concern for either building. Building 50 contains office space and building 52 is primarily occupied by a child care facility. Region 7 addressed the issue of vapor intrusion by having GSA install soil vapor removal systems in both buildings. Subsequent testing showed that the soil vapors beneath both buildings were reduced. TCE levels in the indoor air of building 50 were also reduced. Contaminant plumes lie below or near other buildings at Bannister. These buildings have not all been tested for vapor intrusion. Consequently, the health risk for these other buildings has not been determined.

Air Sampling Performed to Assess Buildings 50 and 52 for Vapor Intrusion

Region 7 assessed buildings 50 and 52 for vapor intrusion and found contaminant vapors beneath both buildings and entering the air of building 50. Region 7 had agreed to conduct four rounds of sampling to determine whether subsurface contaminants are impacting, or have the potential to impact, the indoor air space of these buildings. Region 7 has completed four rounds of indoor air, outdoor air, and subslab soil vapor sampling. Our review assessed data from the first two sampling rounds only.

The first round of vapor intrusion sampling in February 2010 confirmed that subsurface contaminants are volatilizing and migrating through the soil and collecting beneath the buildings' foundations at elevated levels. However, only in building 50 did TCE demonstrate a complete vapor intrusion pathway from ground water to indoor air that cannot be attributed to background chemical sources. Background chemical sources arise from consumer products (e.g., cleaning products and markers) typically found in residences. All detected contaminants were below levels for health concern in the indoor air.

Soil Vapor Removal Systems Installed to Address Vapor Intrusion Into Buildings 50 and 52

After test results showed elevated contaminant levels in the soil vapor, Region 7 addressed vapor intrusion risks by having GSA install soil vapor removal systems in buildings 50 and 52 in February 2010. A soil vapor removal system creates negative pressure beneath a building and vents the contaminated vapors to the

outside environment. EPA scientists and external consultants consider these systems reliable for controlling vapor intrusion. Soil vapor and indoor air results for samples taken after installation of these systems confirm that they are effective in decreasing contaminant levels.

The second round of sampling in March 2010 showed a decrease in the elevated contaminant levels in the soil vapor beneath buildings 50 and 52. The TCE contaminant level in the indoor air of building 50 decreased after installing the soil vapor removal systems. Chemical levels in the indoor air of building 52 remained constant after soil vapor removal system installation, confirming that soil vapor was not previously intruding into the building.

Sampling results also identified one contaminant, TCE, above acceptable long-term exposure levels at a subsurface sampling location—the utility tunnel connecting buildings 50 and 1. Region 7 recommended installing ventilation fans in the unoccupied utility tunnel because vapor intrusion likely affected the area. The area may potentially serve as an alternate entry point for contaminants to migrate into the occupied building 50. GSA installed the fans in May 2010.

Vapor Intrusion Not Assessed at Other Buildings With Underlying Contamination Plumes

Vapor intrusion has not been assessed for the entire Bannister Federal Complex; therefore, the public health risk for the entire facility has not been determined. The National Priorities List assessment for Bannister occurred in 1987 and did not consider vapor intrusion as a potential exposure pathway. Past environmental investigations identified large contaminant plumes beneath or near other buildings. Except for DOE's portion of building 1, the other buildings were likely not assessed for vapor intrusion (figure 2). For the same reason that vapor intrusion was a human health concern at buildings 50 and 52, vapor intrusion may also be a concern at other Bannister buildings.

Figure 2: Ground water contaminant plumes at Bannister

Source: U.S. Department of Energy Kansas City Plant, *Groundwater Corrective Action Report for Calendar Year 2009.*

Health Risks Assessed According to Guidance, but Assessment Could Be Improved

Our assessment agrees with Region 7's health risk assessment that the TCE levels in buildings 50 and 52 do not pose a potential health concern for children or adults. Our review also included a precautionary step of assessing early-life health risk for childhood exposure for building 52, which houses a child care facility. Region 7 concluded that contaminant levels in the indoor air in both buildings do not pose health risks from either short-term or long-term exposure. Region 7 based this conclusion on its assessment of health risks in buildings 50 and 52 conducted in accordance with EPA's inhalation risk assessment guidance. Our review determined that Region 7 conducted its assessment in accordance with established risk assessment procedures. However, additional actions would provide a more comprehensive picture of the chemical hazards in the indoor air. These actions include testing and reporting the results of additional VOCs and assessing the cumulative exposure to multiple VOCs.

Indoor Air at Buildings 50 and 52 Does Not Pose Health Risks from Short- or Long-Term Exposure

Region 7 performed tests and concluded, according to guidance, that the indoor air at buildings 50 and 52 does not pose health risks from either short- or long-term exposure. Region 7 followed the 2009 EPA Superfund guidance, *Supplemental Guidance for Inhalation Risk Assessment*. The assessments were based on two rounds of indoor sampling results taken before and after installing the soil vapor removal systems. Uncertainties exist when estimating year-round indoor air quality conditions from two sampling events. Therefore, results from the remaining two sampling events this year will be needed to confirm Region 7's conclusions.

Several contaminants were detected at above-acceptable exposure levels at certain locations during the first round of indoor air sampling. Except for TCE in building 50, these contaminants may be attributed to background sources within the buildings. Furthermore, the average contaminant levels in each building were all within acceptable levels and, therefore, are not health concerns.

During the second round of sampling, only chloroform at one building 52 location and TCE in the subsurface air of the utility tunnel were detected at above-acceptable long-term exposure levels. The chloroform may be from background sources. Its average indoor concentration was within the acceptable level and therefore not a health concern. The TCE level is not a health concern because the utility tunnel is unoccupied and inhalation exposure is intermittent and of short

duration. Region 7, however, recommended the installation of ventilation fans to prevent potential TCE migration into the indoor air of building 50.

Reporting Additional VOC Results Provides More Comprehensive Assessment

Region 7 assessed exposure to only a subset of potential VOCs present in buildings 50 and 52. Region 7 requested testing for only 14 VOCs in the air samples, instead of utilizing the full capability of the analytical method to test for up to 97 chemicals. Although results for the primary contaminants of concern were reported, indoor air typically contains over 50 chemicals. EPA guidance does not dictate which chemicals should be tested for at a site to characterize the chemical hazard. However, requesting the results for additional chemicals would be reasonable in cost, require minimal additional effort on the part of the Agency, and provide a fuller understanding of the extent of VOC exposure in buildings 50 and 52.

The soil and the ground water contaminant plume around buildings 50 and 52 can also be better understood with additional testing. Potential contaminant sources around the buildings have not been well defined in the past. Testing for additional chemicals in all media for all future sampling events, as allowed by their analytical methods, may alleviate potential concerns of additional VOC exposure and provide a more thorough picture of the contaminants around the buildings.

Assessing Cumulative VOC Exposure Levels Provides Additional Public Health Assurance

Region 7 assessed health risks due to short-term exposure in buildings 50 and 52 based on exposure to individual contaminants and not on cumulative exposure to multiple contaminants. The region's approach focuses on the health risks resulting primarily from the vapor intrusion of individual contaminants, such as TCE. This approach does not assess the health risks of short-term cumulative exposure from all sources. Such an approach may provide greater protection for the public health. An adverse cumulative VOC exposure level may have already occurred before any individual contaminant in indoor air reaches an unacceptable short-term risk level.

Region 7 can provide additional public health assurance in the buildings by assessing the cumulative exposure levels for a wider range of VOCs. EPA has not developed criteria to evaluate health risks from short-term cumulative exposure, but recommends summing individual health risks to estimate the risk. Although this approach does not take into account potential synergistic chemical interactions, scientific literature suggests using total VOC exposure levels as an aid in limiting indoor contaminant concentrations. However, as risk levels for cumulative exposure have not been established, they cannot be used as a health risk indicator, and they do not provide definitive conclusions about indoor air

quality. EPA should consider approaches for evaluating health risks due to cumulative exposure to multiple VOCs at Bannister to ensure a thorough assessment and commitment to a healthier indoor environment.

OIG Takes Precautionary Step by Assessing Early-Life Risk to Children's Health

In the event that EPA determines TCE to be a carcinogen that is comparatively more toxic to children, we performed a precautionary early-life health risk assessment for childhood exposure to TCE. TCE is the primary contaminant of concern for vapor intrusion at Bannister. Building 52 has a child care center. We performed the early-life risk assessment in accordance with the 2005 EPA guidance document, *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens*. Our results show that TCE levels in building 52 for both rounds of indoor air sampling were within the acceptable early-life risk level for children. We calculated the acceptable exposure level for young children to be 2.5 micrograms per cubic meter. The maximum TCE level found for indoor air at building 52 for both rounds of sampling was 0.42 micrograms per cubic meter. The indoor air levels we reviewed for TCE in building 52 do not indicate an early-life health concern for children. This early-life health risk assessment is not a substitute for EPA's risk assessments.

Conclusions and Recommendations

Conclusions

Region 7 assessed the health risk from inhaling contaminated air in Bannister Federal Complex buildings 50 and 52 in accordance with EPA risk assessment procedures. Elevated levels of VOCs were detected beneath the foundations of both buildings. Only TCE was observed to be entering building 50 from the subsurface into indoor air via vapor intrusion. For the 14 VOCs measured in the indoor air, all were within acceptable risk levels for both short- and long-term exposure. Region 7 recommended that the vapor intrusion risk in both buildings be mitigated by the installation of soil vapor removal and ventilation systems. Not all of the other buildings at Bannister with underlying or nearby contaminant plumes have been assessed for vapor intrusion. Therefore, their public health risk has not been determined.

Our review identified actions that can improve contaminant characterization. Testing for additional VOCs in air, soil vapor, soil, and ground water samples as established by EPA's analytical methods would provide a more comprehensive picture of the contaminants in indoor air and the surrounding area. Furthermore, from a public health perspective, assessing total VOC exposure levels supports a commitment to a healthier work environment. Both improvements can be achieved and assessed with reasonable cost and minimal additional effort. Such efforts would provide greater assurance that the indoor contaminants at Bannister have been thoroughly assessed.

Recommendations

We recommend that the Regional Administrator, Region 7:

1. Test for additional VOCs listed in the appropriate EPA-approved analytical methods for all future air, soil vapor, soil, and ground water samples in and around buildings 50 and 52.

2. As part of continuing oversight work, assess the responsible agencies' efforts to fully evaluate the health risks from inhaling potentially contaminated air for all buildings over or within close proximity of contaminated ground water plumes at Bannister Federal Complex.

EPA Region 7 Response to Draft Report and OIG Evaluation

Region 7 indicated in its response to the draft report that it has already undertaken efforts to address both of our recommendations. The region included additional VOCs in its analysis of indoor air and subslab air samples for the third round of

sampling. The region also signed an environmental work agreement with GSA to provide oversight in investigating and managing environmental conditions at other GSA-managed facilities.

In its official response, Region 7 did not agree or disagree with either of the recommendations in the report but did describe actions it had taken that partially address our recommendations. We recommended testing future soil and ground water samples for additional VOCs, not just indoor air and soil vapor samples. The region provided no indication that it will test for additional VOCs for ground water and soil samples. Ground water and soil should be tested for additional VOCs to better characterize the contamination around buildings 50 and 52.

In addition, our second recommendation to evaluate inhalation health risks is not limited to only GSA-managed facilities at Bannister. Other buildings in the complex, managed by other federal entities, were not assessed for vapor intrusion. Region 7 should evaluate inhalation health risks at non-GSA-managed buildings overlying or near contamination plumes in the complex.

In followup discussions, Region 7 concurred with both our recommendations after revision to one of the recommendations and committed to completing actions that would meet the intent of both recommendations. For our first recommendation, Region 7 tested for total VOCs in buildings 50 and 52 during the third round of indoor air and soil vapor sampling held August 6–8, 2010. Region 7 indicated that the fourth round of indoor air and soil vapor sampling, held November 19–21, also tested for total VOCs, and that the region plans to test for total VOCs in ground water and soil samples taken on December 6–20, 2010. Confirmation lab reports were not yet available for these sampling events.

For our second recommendation, Region 7 indicated that it has requested indoor air monitoring results from DOE to evaluate the inhalation health risks at all non-GSA-managed buildings over or within close proximity of contaminated ground water plumes.

In its final response to this report, Region 7 should provide a corrective actions plan for both recommendations, including estimated or actual milestone completion dates.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in $000s)	
Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Claimed Amount	Agreed-To Amount
1	11	Test for additional VOCs listed in the appropriate EPA-approved analytical methods for all future air, soil vapor, soil, and ground water samples in and around buildings 50 and 52.	O	Regional Administrator, Region 7			
2	11	As part of continuing oversight work, assess the responsible agencies' efforts to fully evaluate the health risks from inhaling potentially contaminated air for all buildings over or within close proximity of contaminated ground water plumes at Bannister Federal Complex.	O	Regional Administrator, Region 7			

[1] O = recommendation is open with agreed-to corrective actions pending
C = recommendation is closed with all agreed-to actions completed
U = recommendation is undecided with resolution efforts in progress

Appendix A

EPA Region 7 Response to Draft Report and OIG Evaluation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

NOV 03 2010

OFFICE OF
THE REGIONAL ADMINISTRATOR

Elizabeth Grossman
Deputy Assistant Inspector General for Program Evaluation
Acting Product Line Director for Special Reviews
United States Environmental Protection Agency
Office of the Inspector General
Office of Program Evaluation

Dear Ms. Grossman:

Thank you for your providing us with the Draft Evaluation Report, "Vapor Intrusion Health Risks at Bannister Federal Complex Not a Concern for Buildings 50 and 52, Unknown for Other Buildings," Project No. OPE-FY10-0014. We have reviewed the report, and its two substantive recommendations:

- Test for additional VOCs listed in the appropriate EPA-approved analytical methods for all future air, soil vapor, soil, and ground water samples in and around buildings 50 and 52; and

- Require the responsible agencies to fully evaluate the health risks from inhaling potentially contaminated air for all buildings over or within close proximity of contaminated ground water plumes at the Bannister Federal Complex.

You will be pleased to find out that the Region has already undertaken efforts that address both of these recommendations. Additional VOCs were included in the analysis of indoor air and subslab air samples for the most recent, i.e. third round, of sampling. As noted in your draft report, the Region also signed an Environmental Working Agreement with the General Services Administration. This agreement outlines a plan to further investigate and manage environmental conditions at other GSA-managed facilities within the Bannister Federal Complex, including those affected by ground water plumes. GSA will perform site

investigations, removal assessments and response actions under EPA oversight with work scheduled to begin in the near future.

I would also like to ask you to convey our thanks to your staff who participated in this review. We appreciated their professionalism and courtesy, as well as their flexibility given the challenging calendar constraints.

Sincerely,

Karl Brooks
Regional Administrator

Appendix B

Distribution

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Regional Administrator, Region 7
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