
February 3, 2025

Diane Czarnecki
Industrial Hygienist
Facilities Management Division
GSA Public Buildings Service - Heartland Region
U.S. General Services Administration
2300 Main Street, Kansas City, MO 64108

**RE: Goodfellow Federal Center
Metals in Settled Dust Sampling – Building 110
4300 Goodfellow Boulevard
St. Louis, Missouri 63120
OCCU-TEC Project No. 925001**

Dear Ms. Czarnecki:

Thank you for the opportunity to assist the General Services Administration (GSA) with the metals in settled dust sampling investigation of Building 110 located at the Goodfellow Federal Center (GFC), in St. Louis, Missouri. OCCU-TEC, Inc. (OCCU-TEC) understands that the purpose of the investigation was to provide additional sampling data of existing environmental conditions that are present at GFC that could adversely impact the health and safety of building occupants as well as workers at the facility. The following report summarizes the sample collection activities, and the laboratory analytical results of samples submitted.

On January 8, 2025, OCCU-TEC personnel, including a Missouri licensed lead risk assessor, conducted settled dust sampling for the presence of seven of the Resource Conservation and Recovery Act (RCRA) target metals (lead, arsenic, barium, cadmium, total chromium, selenium, and silver) from various surfaces within occupied spaces within the building. Surfaces sampled included floors, working surfaces, and surfaces above 70 inches that are not subjected to regular cleaning. The purpose of this testing was to further characterize the presence and concentration of target metals in occupied areas and determine if current cleaning efforts are sufficient to limit the accumulation of surface dust.

The proposed sampling scheme, the number of samples, the sample distribution and general methodology were developed by GSA and OCCU-TEC. Specific sample locations were determined by OCCU-TEC personnel while on-site.

Metals in Settled Dust Sampling

Metals in settled dust sampling was limited to only those areas within occupied spaces that may be routinely accessed by building personnel. Closed office spaces, mechanical rooms, basements, penthouses, tunnels and other mechanical spaces were not included in the testing.

Dust wipe sampling was conducted in accordance with ASTM Standard E1728/E1728M-24: Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination. ASTM Standard E1728/E1728M-24 is consistent with the methodology described in the Housing and Urban Development Guidelines and 40 CFR 745.63. The Brookhaven National Laboratory's Surface Wipe Sampling Procedure (IH75190) was also used as a guideline.

A representative surface area of approximately one (1) square foot (SF) was measured and delineated with prefabricated, plastic templates which were thoroughly cleaned after each use. The dust wipe samples were collected using dedicated dust wipe cloths meeting ASTM standards. Each dust wipe cloth was pre-moistened and individually wrapped. Each sample was collected by wiping in a back and forth "S" pattern over a measured sampling area. Then, the wipe was folded over itself, and the area was wiped again in a direction perpendicular to the first wipe orientation. The wipe samples were then placed into labeled, clean laboratory-supplied plastic centrifuge tubes with screw on caps. Dust wipe samples were submitted to Environmental Hazards Services, LLC (EHS) in Richmond, Virginia for Inductively Coupled Plasma (ICP) analysis of metals analysis using Environmental Protection Agency (EPA) Method SW846 350B/7420.

Results of the dust wipe samples collected from the building indicate that nine (9) of the twelve (12) samples contained concentrations of target metals above laboratory detection limits. The following table identifies the range of results for each of the seven metals that were analyzed. **Samples with a "<" sign indicate that the results were below the reportable limit.**

Analysis	Lowest Concentration (µg/sq. ft.)	Highest Concentration (µg/sq. ft.)	Clean Area Limit (µg/sq. ft.)
Arsenic	<2.50	39.0	62
Barium	<0.50	620.0	3,094
Cadmium	<0.10	52.0	31
Total Chromium	<0.10	110.0	3,094
Lead	<0.50	4,000.0	10
Selenium	<2.50	250.0	1,236
Silver	<0.50	2.6	62

Seven (7) of the wipe samples exceeded the Clean Area Limit for lead. Those samples included:

- 110-W-05 – from the floor in the 1st Floor Pegasus Shop area floor, near the west office entrance, which resulted in a lead concentration of 89.0 micrograms per square foot (µg/ft²).
- 110-W-06 – from the vice bench table in the Pegasus shop area, which resulted in a lead concentration of 4,000.0 µg/ft².
- 110-W-07 – from the storage shelf in the upper area of the Pegasus shop, which resulted in a lead concentration of 360.0 µg/ft².
- 110-W-08 – from the seat of a plastic chair in the Pegasus shop area, which resulted in a lead concentration of 57.0 micrograms per square foot (µg/ft²).
- 110-W-09 – from the lid of a plastic trash can in the Pegasus shop area, which resulted in a lead concentration of 410.0 µg/ft².
- 110-W-10 – from the top of equipment on the east side of the Pegasus shop area, which resulted in a lead concentration of 840.0 µg/ft².
- 110-W-11 – from a storage shelf within the fenced area of the Pegasus shop area, which resulted in a lead concentration of 440.0 µg/ft².

One (1) of the wipe samples exceeded the Clean Area Limit for Cadmium:

- 110-W-06 – from the vice bench table in the Pegasus shop resulted in a Cadmium concentration of 52.0 micrograms per square foot (µg/ft²).

Based on the results of the sampling, all similar surfaces within the vicinity should be presumed to contain measurable levels of RCRA metals and proper precautions and/or cleaning procedures should be taken upon entry and exit of

the subject areas to protect occupants and limit the spread of dust to the outside environment.

OCCU-TEC appreciates the opportunity to work with GSA on this project. If you have any questions concerning this report, or if we may be of any additional service, please feel free to contact us.

Sincerely,

(b) (6)

Jeff T. Smith
Senior Project Manager

(b) (6)

Kevin Heriford
Director of Environmental Health and
Safety (QA/QC)

Appendices:

- A – Sample Summary Table
- B – Laboratory Analysis Report
- C – Professional Accreditation

APPENDIX A – SAMPLE SUMMARY TABLE

Appendix A

Sample Summary Table

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
110-W-01	Pegasus Office	West side Floor	Arsenic	< 2.5	µg/ft ²	62
			Barium	2.7	µg/ft ²	3,094
			Cadmium	< 0.1	µg/ft ²	31
			Chromium	1.8	µg/ft ²	3,094
			Lead	5.7	µg/ft ²	10
			Selenium	< 2.5	µg/ft ²	1,236
			Silver	< 0.5	µg/ft ²	62
110-W-02	Pegasus Office	West side Work Station	Arsenic	< 2.5	µg/ft ²	62
			Barium	< 0.5	µg/ft ²	3,094
			Cadmium	< 0.1	µg/ft ²	31
			Chromium	< 0.1	µg/ft ²	3,094
			Lead	< 0.5	µg/ft ²	10
			Selenium	< 2.5	µg/ft ²	1,236
			Silver	< 0.5	µg/ft ²	62
110-W-03	Pegasus Office	Breakroom - top of refrigerator (>70")	Arsenic	< 2.5	µg/ft ²	62
			Barium	5.7	µg/ft ²	3,094
			Cadmium	0.2	µg/ft ²	31
			Chromium	1.3	µg/ft ²	3,094
			Lead	5.3	µg/ft ²	10
			Selenium	< 2.5	µg/ft ²	1,236
			Silver	< 0.5	µg/ft ²	62
110-W-04	Pegasus Office	East side Break area under missing ceiling tile floor	Arsenic	< 2.5	µg/ft ²	62
			Barium	< 0.5	µg/ft ²	3,094
			Cadmium	< 0.1	µg/ft ²	31
			Chromium	< 1.0	µg/ft ²	3,094
			Lead	< 0.5	µg/ft ²	10
			Selenium	< 2.5	µg/ft ²	1,236
			Silver	< 0.5	µg/ft ²	62

Appendix A
Sample Summary Table

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
110-W-05	Pegasus Shop	Floor near west office entrance	Arsenic	< 2.5	µg/ft ²	62
			Barium	41.0	µg/ft ²	3,094
			Cadmium	4.3	µg/ft ²	31
			Chromium	13.0	µg/ft ²	3,094
			Lead	89.0	µg/ft ²	10
			Selenium	< 2.5	µg/ft ²	1,236
			Silver	< 0.5	µg/ft ²	62
110-W-06	Pegasus Shop	Vice bench table	Arsenic	< 2.5	µg/ft ²	62
			Barium	590.0	µg/ft ²	3,094
			Cadmium	52.0	µg/ft ²	31
			Chromium	< 2700.0	µg/ft ²	3,094
			Lead	4000.0	µg/ft ²	10
			Selenium	250.0	µg/ft ²	1,236
			Silver	< 50.0	µg/ft ²	62
110-W-07	Pegasus Shop	Upper area storage shelf	Arsenic	13.0	µg/ft ²	62
			Barium	370.0	µg/ft ²	3,094
			Cadmium	9.3	µg/ft ²	31
			Chromium	58.0	µg/ft ²	3,094
			Lead	360.0	µg/ft ²	10
			Selenium	< 13.0	µg/ft ²	1,236
			Silver	< 2.5	µg/ft ²	62
110-W-08	Pegasus Shop	Seat of plastic chair	Arsenic	< 2.5	µg/ft ²	62
			Barium	59.0	µg/ft ²	3,094
			Cadmium	2.0	µg/ft ²	31
			Chromium	10.0	µg/ft ²	3,094
			Lead	57.0	µg/ft ²	10
			Selenium	< 2.5	µg/ft ²	1,236
			Silver	< 0.5	µg/ft ²	62

Appendix A
Sample Summary Table

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
110-W-09	Pegasus Shop	Lid of plastic trash can	Arsenic	10.0	µg/ft ²	62
			Barium	220.0	µg/ft ²	3,094
			Cadmium	4.3	µg/ft ²	31
			Chromium	43.0	µg/ft ²	3,094
			Lead	410.0	µg/ft ²	10
			Selenium	7.8	µg/ft ²	1,236
			Silver	2.5	µg/ft ²	62
110-W-10	Pegasus Shop	Top of equipment - east side	Arsenic	39.0	µg/ft ²	62
			Barium	620.0	µg/ft ²	3,094
			Cadmium	8.8	µg/ft ²	31
			Chromium	110.0	µg/ft ²	3,094
			Lead	840.0	µg/ft ²	10
			Selenium	< 13.0	µg/ft ²	1,236
			Silver	2.6	µg/ft ²	62
110-W-11	Pegasus Shop	Top of storage shelf in fenced area	Arsenic	8.3	µg/ft ²	62
			Barium	140.0	µg/ft ²	3,094
			Cadmium	3.4	µg/ft ²	31
			Chromium	93.0	µg/ft ²	3,094
			Lead	440.0	µg/ft ²	10
			Selenium	9.0	µg/ft ²	1,236
			Silver	< 1.0	µg/ft ²	62
110-W-12	Field Blank		Arsenic	< 2.5	µg	62
			Barium	< 0.5	µg	3,094
			Cadmium	< 0.1	µg	31
			Chromium	< 1.0	µg	3,094
			Lead	< 0.5	µg	10
			Selenium	< 2.5	µg	1,236
			Silver	< 0.5	µg	62

Appendix A

Sample Summary Table

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
110-W-13	Field Blank		Arsenic	< 2.5	µg	62
			Barium	< 0.5	µg	3,094
			Cadmium	< 0.1	µg	31
			Chromium	< 0.1	µg	3,094
			Lead	< 0.5	µg	10
			Selenium	< 2.5	µg	1,236
			Silver	< 0.5	µg	62

APPENDIX B – LABORATORY ANALYSIS REPORT



7469 Whitepine Rd
North Chesterfield, VA 23237
Telephone: 800.347.4010

Wipe Metals Analysis Report

Client: OCCU-Tec Inc
2604 NE Industrial Drive
Suite 230
North Kansas City, MO 64117

Report Number: 25-01-02716

Received Date: 01/16/2025

Analyzed Date: 01/22/2025

Reported Date: 01/24/2025

Project/Test Address: GSA Goodfellow Complex

Client Number:

202507

Fax Number:

Laboratory Results

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft ²)	Total Metal (ug)	Concentration (ug/ft ²)	Narrative ID
25-01-02716-001	110-W-01	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	2.70	2.7	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	1.76	1.8	
		Lead (Pb)	1.00	5.69	5.7	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
25-01-02716-002	110-W-02	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	<0.500	<0.50	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	<1.00	<1.0	

Environmental Hazards Services, L.L.C

Client Number: 202507

Report Number: 25-01-02716

Project/Test Address: GSA Goodfellow Complex

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft²)	Total Metal (ug)	Concentration (ug/ft²)	Narrative ID
25-01-02716-003	110-W-03	Lead (Pb)	1.00	<0.500	<0.50	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
		Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	5.74	5.7	
		Cadmium (Cd)	1.00	0.170	0.17	
		Chromium (Cr)	1.00	1.34	1.3	
		Lead (Pb)	1.00	5.27	5.3	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
25-01-02716-004	110-W-04	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	<0.500	<0.50	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	<0.500	<0.50	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
25-01-02716-005	110-W-05	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	41.0	41	

Environmental Hazards Services, L.L.C

Client Number: 202507

Report Number: 25-01-02716

Project/Test Address: GSA Goodfellow Complex

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft²)	Total Metal (ug)	Concentration (ug/ft²)	Narrative ID
25-01-02716-006	110-W-06	Cadmium (Cd)	1.00	4.26	4.3	
		Chromium (Cr)	1.00	13.1	13	
		Lead (Pb)	1.00	88.8	89	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
		Arsenic (As)	1.00	<250	<2.5	
		Barium (Ba)	1.00	593	590	
		Cadmium (Cd)	1.00	51.9	52	
		Chromium (Cr)	1.00	2650	2700	
		Lead (Pb)	1.00	4000	4000	
25-01-02716-007	110-W-07	Selenium (Se)	1.00	252	250	
		Silver (Ag)	1.00	<50.0	<50	
		Arsenic (As)	1.00	13.1	13	
		Barium (Ba)	1.00	369	370	
		Cadmium (Cd)	1.00	9.30	9.3	
		Chromium (Cr)	1.00	58.3	58	
		Lead (Pb)	1.00	362	360	
		Selenium (Se)	1.00	<13.0	<13	
		Silver (Ag)	1.00	<2.50	<2.5	

Environmental Hazards Services, L.L.C

Client Number: 202507

Report Number: 25-01-02716

Project/Test Address: GSA Goodfellow Complex

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft²)	Total Metal (ug)	Concentration (ug/ft²)	Narrative ID
25-01-02716-008	110-W-08	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	58.9	59	
		Cadmium (Cd)	1.00	1.95	2.0	
		Chromium (Cr)	1.00	10.1	10	
		Lead (Pb)	1.00	56.5	57	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
25-01-02716-009	110-W-09	Arsenic (As)	1.00	10.3	10	
		Barium (Ba)	1.00	224	220	
		Cadmium (Cd)	1.00	4.28	4.3	
		Chromium (Cr)	1.00	42.7	43	
		Lead (Pb)	1.00	413	410	
		Selenium (Se)	1.00	7.76	7.8	
		Silver (Ag)	1.00	2.46	2.5	
25-01-02716-010	110-W-10	Arsenic (As)	1.00	39.1	39	
		Barium (Ba)	1.00	618	620	
		Cadmium (Cd)	1.00	8.78	8.8	
		Chromium (Cr)	1.00	108	110	
		Lead (Pb)	1.00	838	840	

Environmental Hazards Services, L.L.C

Client Number: 202507

Report Number: 25-01-02716

Project/Test Address: GSA Goodfellow Complex

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft²)	Total Metal (ug)	Concentration (ug/ft²)	Narrative ID
25-01-02716-011	110-W-11	Selenium (Se)	1.00	<13.0	<13	
		Silver (Ag)	1.00	2.62	2.6	
		Arsenic (As)	1.00	8.27	8.3	
		Barium (Ba)	1.00	136	140	
		Cadmium (Cd)	1.00	3.40	3.4	
		Chromium (Cr)	1.00	93.2	93	
		Lead (Pb)	1.00	439	440	
		Selenium (Se)	1.00	9.00	9.0	
25-01-02716-012	110-W-12	Silver (Ag)	1.00	<1.00	<1.0	
		Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	<0.500	<0.50	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	<0.500	<0.50	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
25-01-02716-013	110-W-13	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	<0.500	<0.50	
		Cadmium (Cd)	1.00	<0.100	<0.10	

Environmental Hazards Services, L.L.C

Client Number: 202507

Report Number: 25-01-02716

Project/Test Address: GSA Goodfellow Complex

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft ²)	Total Metal (ug)	Concentration (ug/ft ²)	Narrative ID
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	<0.500	<0.50	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	

Sample Narratives:

Analyst: Carlos Gonzalez

Method: EPA SW846 3050B/6010D

(b) (6)

Reviewed By Authorized Signatory:

Tasha Eaddy

QA/QC Clerk

Sample Results denoted with a "less than" (<) sign contains less than the reporting limit based on a 50mL volume. The reporting limit for Lead is 0.5ug.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Unless otherwise noted, samples are reported without a dry weight correction. Sample location, description, area, volume, etc., was provided by the client. If the report does not contain the result for a field blank, it is due to the fact that the client did not include a field blank with their samples. These sample results do not reflect blank correction. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C.

Legend	ug = microgram	ug/ft ² = micrograms per square foot
	mL = milliliter	ft ² = square foot

ENVIRONMENTAL HAZARDS SERVICES, LLC

Metals Chain of Custody Form

Page 1 of 1

Company Name		OCCU-TEC Inc.		Account #		202507	
Company Address		2604 NE Industrial Drive Suite 230		City/State/Zip		North Kansas City, MO 64117	
Phone		816-231-5580		Email		jarnold@occutec.com	
Project Name / Testing Address		GSA Goodfellow Complex					
PO Number		925001		Collected By		Justin Arnold	
Turn-Around Time		<input checked="" type="radio"/> 5 Day <input type="radio"/> 3 Day <input type="radio"/> 2 Day <input type="radio"/> 1 Day <input type="radio"/> Same Day / Weekend - Must Call Ahead					

LAB NUMBER	Client Sample ID	Collection Date & Time	METALS						Other Metals	PARTICULATES					AIR			WIPES		
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total	Toxic Metal Profile	Welding Fume Profile	TX 11 TCLP		CA 17 Total	Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Total Time	Flow Rate	Vol.	AREA	
																Min.	L/min	Total Liters		Circle Unit of Measurement Used cm or (in)
1	110-W-01	1/14/25 1002							Ag, As, Ba, Cd, Cr, Pb, Se											12 x 12
2	110-W-02	1007																	12 x 12	
3	110-W-03	1011																	12 x 12	
4	110-W-04	1014																	12 x 12	
5	110-W-05	1020																	12 x 12	
6	110-W-06	1025																	12 x 12	
7	110-W-07	1029																	12 x 12	
8	110-W-08	1031																	12 x 12	
9	110-W-09	1036																	12 x 12	
10	110-W-10	1040																	12 x 12	
11	110-W-11	1044																	12 x 12	
12	110-W-12	1047																	12 x 12	
13	110-W-13	1050																	12 x 12	
14																			x	
15																			x	

Released By:	Justin Arnold	Date:	1/15/25	Time:	1530
Signature:	(b) (6)				

LAB USE ONLY - BELOW THIS LINE

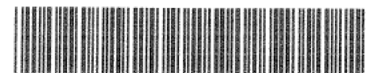
Received By: Draven

Signature: (b) (6)

Date: 1/16/25 Time: 212 ☐ AM ☒ PM

☐ Portal Contact Added

25-01-02716



Due Date:
01/24/2025
(Friday)
AE

P

7469 WHITEPINE RD, RICHMOND, VA 23237 (800)-347-4010

RESULTS VIA CLIENT PORTAL AVAILABLE @ www.leadlab.com

APPENDIX C – PROFESSIONAL ACCREDITATION

STATE OF MISSOURI
DEPARTMENT OF HEALTH AND SENIOR SERVICES

LEAD ABATEMENT OCCUPATION LICENSE

Issued to:

Justin Arnold

The person, firm or corporation whose name appears on this certificate has fulfilled the requirements for licensure as set forth in the Missouri Revised Statutes 701.300-701.338, as long as not suspended or revoked, and is hereby authorized to engage in the activity listed below.

Lead Risk Assessor
Category of License

Issuance Date: **8/27/2024**
Expiration Date: **8/27/2026**
License Number: **120611-300003622**

(b) (6)

Paula F. Nickelson
Director
Department of Health and Senior Services

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102