



January 12, 2022

Diane Czarnecki  
Industrial Hygienist  
Facilities Management Division  
GSA Public Buildings Service – Heartland Region  
2300 Main Street  
Kansas City, MO 64108

Re: Goodfellow Federal Center  
Metals in Settled Dust Sampling – Building 104  
Project No. 121244

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 104 located at the Goodfellow Federal Center (GFC) in St. Louis, Missouri. Burns & McDonnell 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.

## **INTRODUCTION**

Per historical use and previous characterization, Burns & McDonnell was contracted to perform settled dust sampling for the analysis of seven (7) of the Resource Conservation and Recovery Act (RCRA) target metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) from various surfaces within buildings. The purpose of this testing was to further characterize the presence and concentration of target metals in common tenant-occupied areas of the building.

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

Settled dust wipe sampling at Bldg. 104 was conducted on December 7, 2021 by Emily Pulcher and Jeff Smith of Burns & McDonnell and OCCU-TEC.

## **METALS IN SETTLED DUST SAMPLING**

Metals in settled dust sampling was conducted primarily within tenant-occupied areas. Dust wipe sampling was conducted in accordance with ASTM Standard E1728: *Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination* and ASTM Standard D6966: *Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Determination of Metals*. ASTM Standards E1728 and D6966 are consistent with the methodology described in the Housing and

Diane Czarnecki  
Facilities Management Division  
January 12, 2022  
Page 2

Urban Development Guidelines-Appendix 13.1 and 40 CFR 745.63. The Brookhaven National Laboratory's Surface Wipe Sampling Procedure (IH75190) was also used as a guideline.

Dust wipe sampling for the target metals was conducted on a variety of representative surfaces that have the potential of being disturbed by building occupants. A representative surface area of approximately one square foot (1 SF) was measured and delineated with plastic templates. The dust wipe samples were collected using dedicated dust wipe cloths meeting ASTM E1792 Standard. 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 using a clean, disposable glove. Then, the wipe was folded over itself and the area was wiped again in a direction perpendicular to the first wipe orientation. Then, the wipe folded over itself again and the area was wiped around the perimeter. The wipe sample was then placed into a labeled, clean container. 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 3050B/6010D. EHS is accredited under the American Industrial Hygiene Association (AIHA) Laboratory Accreditation Program (LAP) identification number LAP-100420.

Whereas the Occupational Safety and Health Administration (OSHA) has not established regulatory limits for surface concentrations of metals, the OSHA Technical Manual Section II: Chapter 2 (III.A) describes a method for calculating "housekeeping" standards, as recommended acceptable surface limits. Brookhaven's IH75190 procedure uses the housekeeping standards to derive a lower, "clean area limit" for non-operational areas that can be accessed or contacted without special training or precautions. Burns & McDonnell calculated clean area limits for metals not included in the Brookhaven procedure, specifically barium, chromium (total), selenium and silver. Wipe results were compared to the Brookhaven procedure's clean area limits for each metal.

Results of the dust wipe samples collected from the building indicate that 10 of the 18 samples contained concentrations of target metals above laboratory reporting 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 lab's reportable limit.

Diane Czarnecki  
 Facilities Management Division  
 January 12, 2022  
 Page 3

**Table 1. Summary of Dust Wipe Results**

Analyte	Lowest Concentration <sup>(a)</sup> (µg/sq. ft) <sup>(b)</sup>	Highest Concentration <sup>(a)</sup> (µg/sq. ft) <sup>(b)</sup>	Clean Area Limit <sup>(c)</sup> µg/sq. ft <sup>(b)</sup>
Silver	<0.5	1.9	62
Arsenic	<2.5	<2.5	62
Barium	<0.5	71.0	3,094
Cadmium	<0.1	0.6	31
Chromium (Total)	<1.0	3.9	3,094
Lead	<0.5	42.0	10 <sup>(d)</sup>
Selenium	<2.5	<2.5	1,236

- (a) Samples with a “<” sign indicate that the results were below the laboratory’s reporting limit.
- (b) µg/sq. ft = micrograms per square foot of surface area.
- (c) Clean Area Limit per Brookhaven IH75190=OSHA Housekeeping Limit [(PEL (µg/m<sup>3</sup>) x 10 m<sup>3</sup>/100cm<sup>2</sup>) x 929cm<sup>2</sup>/sq.ft.] / 15.
- (d) Lead clean area limit: Brookhaven references EPA/HUD limit for floors, set at 10 µg/sq. ft. as of January 2020.

Of the 10 samples that had detectable levels of one or more analytes, 1 of them exceeded the clean area limit.

1. A sample taken from the floor of the data center storage room on the second floor by column D16 had 42 µg/ft<sup>2</sup> of lead.

Burns & McDonnell appreciates the opportunity to work with the GSA on this project. Please contact us if you have any questions regarding this report or if we may be of any additional service.

Sincerely,

(b) (6)

Matt Shanahan, CHMM  
 Project Manager

- Attachments:
- Appendix A – Sample Summary Table
  - Appendix B – Laboratory Analysis Report



Diane Czarnecki  
Facilities Management Division  
January 12, 2022  
Page 4

Information in Appendices A and B is not accessible for people using screen reader technology. If this information is required, it can be furnished upon request by contacting 816-223-6198 or [r6environmental@gsa.gov](mailto:r6environmental@gsa.gov).

**APPENDIX A – SAMPLE SUMMARY TABLE**

**Appendix A**  
**Sample Summary Table**

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
104-W-01	Field blank	--	Arsenic	< 2.50	µg	62
			Barium	< 0.500	µg	3,094
			Cadmium	< 0.100	µg	31
			Chromium	< 1.00	µg	3,094
			Lead	< 0.500	µg	10
			Selenium	< 2.50	µg	1,236
			Silver	< 0.500	µg	62
104-W-02	2nd floor, column J34	Center table, vending area	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	< 0.50	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	< 0.50	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-03	2nd floor, column J35	Floor at entrance, vending area	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	2.0	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	1.5	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-04	2nd floor, column E37	Desk F37D4	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	< 0.50	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	< 0.50	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62

**Appendix A**  
**Sample Summary Table**

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
104-W-05	2nd floor, column G36	Storage room H3701, floor	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	71	µg/ft <sup>2</sup>	3,094
			Cadmium	0.12	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	7.0	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-06	2nd floor, column H37	Conference room J37C1, table in NW corner	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	0.51	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	< 0.50	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-07	2nd floor, column C45	Break room, center round table	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	< 0.50	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	< 0.50	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-08	2nd floor, column H49	Desk surface	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	0.52	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	< 0.50	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62

**Appendix A**  
**Sample Summary Table**

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
104-W-09	2nd floor, column B42	Floor in hallway near restrooms	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	15	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	3.6	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-10	2nd floor, column B31	Break room floor	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	1.0	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	0.61	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-11	2nd floor, column D27	Work station desk	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	< 0.50	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	< 0.50	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-12	Field blank	--	Arsenic	< 2.50	µg	--
			Barium	< 0.500	µg	--
			Cadmium	< 0.100	µg	--
			Chromium	< 1.00	µg	--
			Lead	< 0.500	µg	--
			Selenium	< 2.50	µg	--
			Silver	< 0.500	µg	--

**Appendix A**  
**Sample Summary Table**

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
104-W-13	2nd floor, print shop	North work bench	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	< 0.50	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	1.1	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-14	2nd floor, column J13	Office desk	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	< 0.50	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	< 0.50	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-15	2nd floor, data center room 5, column D16	Floor	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	31	µg/ft <sup>2</sup>	3,094
			Cadmium	0.59	µg/ft <sup>2</sup>	31
			Chromium	3.5	µg/ft <sup>2</sup>	3,094
			Lead	42	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	1.9	µg/ft <sup>2</sup>	62
104-W-16	2nd floor, data center room 3, column B10	Desk	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	1.6	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	3.9	µg/ft <sup>2</sup>	3,094
			Lead	1.9	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62

**Appendix A**  
**Sample Summary Table**

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
104-W-17	2nd floor, data center room 2, column E6	Floor at top of ramp	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	3.1	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	6.1	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62
104-W-18	2nd floor, data center room 1, column E2	Desk	Arsenic	< 2.5	µg/ft <sup>2</sup>	62
			Barium	< 0.50	µg/ft <sup>2</sup>	3,094
			Cadmium	< 0.10	µg/ft <sup>2</sup>	31
			Chromium	< 1.0	µg/ft <sup>2</sup>	3,094
			Lead	< 0.50	µg/ft <sup>2</sup>	10
			Selenium	< 2.5	µg/ft <sup>2</sup>	1,236
			Silver	< 0.50	µg/ft <sup>2</sup>	62

\* Clean Area Limit per Brookhaven IH75190=OSHA Housekeeping Limit  $[(PEL (\mu g/m^3) \times 10 m^3/100cm^2) \times 929cm^2/sq. ft.] / 15$ . Lead clean area limit: Brookhaven references EPA/HUD limit for floors, set at 10 µg/sq. ft. as of January 2020.

\*\* Indicates results at or above the Clean Area Limit

**APPENDIX B – LABORATORY ANALYSIS REPORT**



Environmental Hazards Services, L.L.C.  
 7469 Whitepine Rd  
 Richmond, VA 23237  
 Telephone: 800.347.4010

## Wipe Metals Analysis Report

**Client:** Burns & McDonnell Engineering  
 9400 Ward Pkwy.  
 Kansas City, MO 64114

**Report Number:** 21-12-01849

**Received Date:** 12/13/2021

**Analyzed Date:** 12/17/2021

**Reported Date:** 12/20/2021

**Project/Test Address:** 168765; GFC; 4300 Goodfellow Blvd.

**Client Number:**  
 26-3514

# Laboratory Results

**Fax Number:**  
 816-822-3494

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
21-12-01849-001	104-W-01	Arsenic (As)	1.00	<2.50	<2.5	L01
		Barium (Ba)	1.00	<0.500	<0.50	L01
		Cadmium (Cd)	1.00	<0.100	<0.10	L01
		Chromium (Cr)	1.00	<1.00	<1.0	L01
		Lead (Pb)	1.00	<0.500	<0.50	L01
		Selenium (Se)	1.00	<2.50	<2.5	L01
		Silver (Ag)	1.00	<0.500	<0.50	L01
21-12-01849-002	104-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:** 26-3514

**Report Number:** 21-12-01849

**Project/Test Address:** 168765; GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
		Lead (Pb)	1.00	<0.500	<0.50	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-12-01849-003	104-W-03	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	2.00	2.0	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	1.46	1.5	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-12-01849-004	104-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	
21-12-01849-005	104-W-05	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	70.6	71	

# Environmental Hazards Services, L.L.C

**Client Number:** 26-3514

**Report Number:** 21-12-01849

**Project/Test Address:** 168765; GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
		Cadmium (Cd)	1.00	0.115	0.12	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	7.00	7.0	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-12-01849-006	104-W-06	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	0.510	0.51	
		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	
21-12-01849-007	104-W-07	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	

# Environmental Hazards Services, L.L.C

**Client Number:** 26-3514

**Report Number:** 21-12-01849

**Project/Test Address:** 168765; GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
21-12-01849-008	104-W-08	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	0.520	0.52	
		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	
21-12-01849-009	104-W-09	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	14.7	15	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	3.56	3.6	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-12-01849-010	104-W-10	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	1.04	1.0	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	0.610	0.61	

# Environmental Hazards Services, L.L.C

**Client Number:** 26-3514

**Report Number:** 21-12-01849

**Project/Test Address:** 168765; GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-12-01849-011	104-W-11	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	
21-12-01849-012	104-W-12	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	
21-12-01849-013	104-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:** 26-3514

**Report Number:** 21-12-01849

**Project/Test Address:** 168765; GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	1.08	1.1	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-12-01849-014	104-W-14	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	
21-12-01849-015	104-W-15	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	31.3	31	
		Cadmium (Cd)	1.00	0.590	0.59	
		Chromium (Cr)	1.00	3.49	3.5	
		Lead (Pb)	1.00	41.5	42	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	1.94	1.9	
21-12-01849-016	104-W-16	Arsenic (As)	1.00	<2.50	<2.5	

# Environmental Hazards Services, L.L.C

**Client Number:** 26-3514

**Report Number:** 21-12-01849

**Project/Test Address:** 168765; GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
		Barium (Ba)	1.00	1.56	1.6	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	3.94	3.9	
		Lead (Pb)	1.00	1.88	1.9	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-12-01849-017	104-W-17	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	3.08	3.1	
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	6.06	6.1	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-12-01849-018	104-W-18	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	

# Environmental Hazards Services, L.L.C

Client Number: 26-3514

Report Number: 21-12-01849

Project/Test Address: 168765; GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
		Silver (Ag)	1.00	<0.500	<0.50	

## Sample Narratives:

L01: The reporting limit for Arsenic on this report is 2.5ug.

**Analyst:** Kailee Guthrie

**Method:** Mercury (Hg): EPA SW846 7471B

All other metals: EPA SW846 3050B/6010D

(b) (6)

Reviewed By Authorized Signatory:

*Tasha Eddy*

QA/QC Clerk

Sample Results denoted with a "less than" (<) sign contains less than the reporting limit for each particular metal, based on a 50mL volume. The reporting limit for Cadmium is 0.10ug, Barium, Lead and Silver are 0.50ug, Arsenic and Chromium are 1.0ug, and Selenium is 2.5ug.

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. NY ELAP #11714.

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

# ENVIRONMENTAL HAZARDS SERVICES, LLC

## Metals Chain of Custody Form

Company Name		Burns & McDonnell				Account #		26-3514												
Company Address		9400 Ward Parkway				City/State/Zip		Kansas City, MO 64114												
Phone		314-302-4661				Email		eapulcher@burnsmcd.com												
Project Name / Testing Address		GFC / 4300 Goodfellow Blvd																		
PO Number		168765				Collected By		Emily Pulcher & Jeff Smith												
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 OR 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	
									Ag, As, Ba, Cd, Cr, Pb, Se											Circle The Unit of Measurement Used cm or (in)
1	104-W-01	12/7/21 1050																		NA x NA
2	104-W-02	1057																		12 x 12
3	104-W-03	1058																		12 x 12
4	104-W-04	1102																		12 x 12
5	104-W-05	1105																		12 x 12
6	104-W-06	1104																		12 x 12
7	104-W-07	1110																		12 x 12
8	104-W-08	1113																		12 x 12
9	104-W-09	1118																		12 x 12
10	104-W-10	1122																		12 x 12
11	104-W-11	1126																		12 x 12
12	104-W-12	1128																		NA x NA
13	104-W-13	1130																		12 x 12
14	104-W-14	1140																		12 x 12
15	104-W-15	1145																		12 x 12
Released By:		Emily Pulcher				Date:		12/9/21				Time:		1100						
Signature:		(b) (6)																		

LAB USE ONLY - BELOW THIS LINE

Received By: TS Stone  
 Signature: (b) (6)  
 Date: 12/13/21 Time: 1:16  AM  PM

Portal Contact Added

7469 WHITEPINE RD, RICHMOND, VA 23237 (800)-347-4010  
 RESULTS VIA CLIENT PORTAL AVAILABLE @ www.leadlab.com

21-12-01849



Due Date:  
12/20/2021  
(Monday)  
EL MM-L

# ENVIRONMENTAL HAZARDS SERVICES, LLC

## Metals Chain of Custody Form

Pg 2 of 2

Company Name		Burns & McDonnell				Account #		26-3514											
Company Address		9400 Ward Parkway				City/State/Zip		Kansas City, MO 64114											
Phone		314-302-4661				Email		eapulcher@burnsmcd.com											
Project Name / Testing Address		GFC / 4300 Goodfellow Blvd																	
PO Number		168765			Collected By		Emily Pulcher & Jeff Smith												
Turn-Around Time		<input checked="" type="checkbox"/> 5 DAY <input type="checkbox"/> 3 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> 1 DAY <input type="checkbox"/> SAME DAY OR 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
									Ag, As, Ba, Cd, Cr, Pb, Se										Circle The Unit of Measurement Used cm or <u>in</u>
1	104-W-16	12/7/21 1148																	12 x12
2	104-W-17	1 1152																	12 x12
3	104-W-18	1 1155																	12 x12
4																			X
5																			X
6																			X
7																			X
8																			X
9																			X
10																			X
11																			X
12																			X
13																			X
14																			X
15																			X
Released By:		Emily Pulcher				Date:		12/9/21			Time:		1100						
Signature:		(b) (6)																	

LAB USE ONLY - BELOW THIS LINE

Received By: T Stone  
 Signature: (b) (6)  
 Date: 12.13.21 Time: 1:16  AM  PM  
 Portal Contact Added

1849



**EHS**  
Laboratories™

Attach Laboratory Label Here