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January 9, 2020

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 #105F  
4300 Goodfellow Boulevard  
St. Louis, Missouri 63120  
OCCU-TEC Project No. 919103**

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 #105F 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 December 6, 2019, a team of OCCU-TEC personnel including a Missouri licensed lead risk assessor conducted settled dust sampling for the presence of six (6) of the Resource Conservation and Recovery Act (RCRA) target metals (lead, arsenic, barium, cadmium, selenium, and silver) from various surfaces within tenant-occupied areas within the building. 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 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 conducted within only within tenant-occupied areas.

Dust wipe sampling was conducted in accordance with ASTM Standard E1728-16: Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination. ASTM Standard E1728-16 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.

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 pre-fabricated, disposable templates. The dust wipe [REDACTED] using dedicated dust wipe cloths meeting ASTM standards. Each [REDACTED] 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 Scientific Analytical Institute, Inc. (SAI) in Greensboro, North Carolina 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 five (5) of the six (6) samples contained concentrations of target metals above laboratory detection limits. The following table identifies the range of results for each of the six 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.)
Silver	<0.50	<0.50
Arsenic	<0.50	<0.50
Barium	<0.75	6.60
Cadmium	<0.050	0.86
Lead	<0.25	8.90
Selenium	<1.30	<1.30

All of the samples collected contained target metals below the Brookhaven recommended levels.

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)

Justin Arnold, CIEC  
Environmental Scientist



(b) (6)

Jeff Smith  
Senior Project Manager (QA/QC)

Appendices:

- A - Sample Location Diagram
- B - Sample Summary Table
- C - Laboratory Analysis Reports
- D - Licenses

# Appendix

## A

Sample Location  
Diagram

EXEMPTION (b)(7)(F)

**Figure 1: Wipe Sample Location Maps—Bldg. 105F**

Goodfellow Federal Center  
4300 Goodfellow Boulevard  
St. Louis, Missouri  
Project Number: 919103

# Appendix

## B

Sample Summary  
Table

**Goodfellow Federal Center - Building # 105F - Wipe Sample Data**

Sample Number	Location	Area Description	Analyte	Result	Units	Recommended Limits
122019-MetW-105F-01	Field Blank		Silver	< 0.50	µg	* 139/9.3
			Arsenic	< 0.50	µg	** 62
			Barium	< 0.75	µg	
			Cadmium	< 0.05	µg	** 31
			Lead	< 0.25	µg	** 200/40
			Selenium	< 1.30	µg	
122019-MetW-105F-02	First Floor at Column L-34	Window Sill	Silver	< 0.50	µg/ft <sup>2</sup>	* 139/9.3
			Arsenic	< 0.50	µg/ft <sup>2</sup>	** 62
			Barium	1.20	µg/ft <sup>2</sup>	
			Cadmium	0.15	µg/ft <sup>2</sup>	** 31
			Lead	0.33	µg/ft <sup>2</sup>	** 200/40
			Selenium	< 1.30	µg/ft <sup>2</sup>	
122019-MetW-105F-03	1st Floor at Column P-34	Floor	Silver	< 0.50	µg/ft <sup>2</sup>	* 139/9.3
			Arsenic	< 0.50	µg/ft <sup>2</sup>	** 62
			Barium	2.40	µg/ft <sup>2</sup>	
			Cadmium	< 0.05	µg/ft <sup>2</sup>	** 31
			Lead	0.74	µg/ft <sup>2</sup>	** 200/40
			Selenium	< 1.30	µg/ft <sup>2</sup>	
122019-MetW-105F-04	1st Floor at Column O-30	Floor	Silver	< 0.50	µg/ft <sup>2</sup>	* 139/9.3
			Arsenic	< 0.50	µg/ft <sup>2</sup>	** 62
			Barium	2.40	µg/ft <sup>2</sup>	
			Cadmium	< 0.05	µg/ft <sup>2</sup>	** 31
			Lead	0.74	µg/ft <sup>2</sup>	** 200/40
			Selenium	< 1.30	µg/ft <sup>2</sup>	
122019-MetW-105F-05	2nd Floor at Column P-27	Window Sill	Silver	< 0.50	µg/ft <sup>2</sup>	* 139/9.3
			Arsenic	< 0.50	µg/ft <sup>2</sup>	** 62
			Barium	1.80	µg/ft <sup>2</sup>	
			Cadmium	< 0.05	µg/ft <sup>2</sup>	** 31
			Lead	0.76	µg/ft <sup>2</sup>	** 200/40
			Selenium	< 1.30	µg/ft <sup>2</sup>	
122019-MetW-105F-06	2nd Floor at Column O-30	Floor	Silver	< 0.50	µg/ft <sup>2</sup>	* 139/9.3
			Arsenic	< 0.50	µg/ft <sup>2</sup>	** 62
			Barium	< 0.75	µg/ft <sup>2</sup>	
			Cadmium	< 0.05	µg/ft <sup>2</sup>	** 31
			Lead	< 0.25	µg/ft <sup>2</sup>	** 200/40
			Selenium	< 1.30	µg/ft <sup>2</sup>	
122019-MetW-105F-07	2nd Floor at Column P-33	Window Sill	Silver	< 0.50	µg/ft <sup>2</sup>	* 139/9.3
			Arsenic	< 0.50	µg/ft <sup>2</sup>	** 62
			Barium	6.60	µg/ft <sup>2</sup>	
			Cadmium	0.86	µg/ft <sup>2</sup>	** 31
			Lead	8.90	µg/ft <sup>2</sup>	** 200/40
			Selenium	< 1.30	µg/ft <sup>2</sup>	

\* Recommended Limits based on Table 3 (BNL Surface Wipe Criteria for Metals) of the Brookhaven Surface Wipe Sampling Procedure (IH75190), Rev 19: 3/4/14

\*\* Recommended Limits based on Attachment 9.3 (Required & Recommended Surface Wipe Criteria) - Brookhaven Surface Wipe Sampling Procedure (IH75190), Rev 23: 6/23/17

Indicates results at or above REL

# **Appendix**

## **C**

Laboratory  
Analytical  
Reports





# Dust Wipe Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH 7300/EPA SW-846 3050B



<b>Client:</b> OCCU-TEC Inc. 2604 NE Industrial Drive, Suite 230 North Kansas City, MO 64117	<b>Attn:</b> Justin Arnold	<b>Lab Order ID:</b> 71931190 <b>Date Received:</b> 12/12/2019 <b>Date Reported:</b> 12/20/2019
<b>Project:</b> 919103		<b>Page:</b> 1 of 2

Sample ID	Description	Area (ft <sup>2</sup> )	*Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/ft <sup>2</sup> )
Lab Sample ID	Lab Notes					
122019-MetW-105F-01	Field Blank	-	Ag	0.50	< 0.50	--
			As	0.50	< 0.50	--
			Ba	0.75	< 0.75	--
			Cd	0.050	< 0.050	--
			Pb	0.25	< 0.25	--
			Se	1.3	< 1.3	--
122019-MetW-105F-02	1st floor column L34	1	Ag	0.50	< 0.50	< 0.50
			As	0.50	< 0.50	< 0.50
			Ba	0.75	1.2	1.2
			Cd	0.050	0.15	0.15
			Pb	0.25	0.33	0.33
			Se	1.3	< 1.3	< 1.3
122019-MetW-105F-03	1st floor column P34	1	Ag	0.50	< 0.50	< 0.50
			As	0.50	< 0.50	< 0.50
			Ba	0.75	2.4	2.4
			Cd	0.050	< 0.050	< 0.050
			Pb	0.25	0.74	0.74
			Se	1.3	< 1.3	< 1.3
122019-MetW-105F-04	1st floor column O30	1	Ag	0.50	< 0.50	< 0.50
			As	0.50	< 0.50	< 0.50
			Ba	0.75	1.3	1.3
			Cd	0.050	< 0.050	< 0.050
			Pb	0.25	< 0.25	< 0.25
			Se	1.3	< 1.3	< 1.3

Melissa Ferrell

**Analyst**

(b) (6)

**Lab Director**

\* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.

Unless otherwise noted blank sample correction was not performed on analytical results. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. MDLs are available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190.



# Dust Wipe Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH 7300/EPA SW-846 3050B



<b>Client:</b> OCCU-TEC Inc. 2604 NE Industrial Drive, Suite 230 North Kansas City, MO 64117	<b>Attn:</b> Justin Arnold	<b>Lab Order ID:</b> 71931190 <b>Date Received:</b> 12/12/2019 <b>Date Reported:</b> 12/20/2019
<b>Project:</b> 919103		<b>Page:</b> 2 of 2

Sample ID	Description	Area (ft <sup>2</sup> )	*Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/ft <sup>2</sup> )
Lab Sample ID	Lab Notes					
122019-MetW-105F-05	2 <sup>nd</sup> floor column P27	1	Ag	0.50	< 0.50	< 0.50
			As	0.50	< 0.50	< 0.50
			Ba	0.75	1.8	1.8
			Cd	0.050	< 0.050	< 0.050
			Pb	0.25	0.76	0.76
71931190IPW_5			Se	1.3	< 1.3	< 1.3
122019-MetW-105F-06	2 <sup>nd</sup> floor column O30	1	Ag	0.50	< 0.50	< 0.50
			As	0.50	< 0.50	< 0.50
			Ba	0.75	< 0.75	< 0.75
			Cd	0.050	< 0.050	< 0.050
			Pb	0.25	< 0.25	< 0.25
71931190IPW_6			Se	1.3	< 1.3	< 1.3
122019-MetW-105F-07	2 <sup>nd</sup> floor column P33	1	Ag	0.50	< 0.50	< 0.50
			As	0.50	< 0.50	< 0.50
			Ba	0.75	6.6	6.6
			Cd	0.050	0.86	0.86
			Pb	0.25	8.9	8.9
71931190IPW_7			Se	1.3	< 1.3	< 1.3

Melissa Ferrell

**Analyst**

(b) (6)

**Lab Director**

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**Scientific Analytical Institute, Inc.**  
 4604 Dundas Dr. Greensboro, NC 27407  
 Phone: 336.292.3888 Fax: 336.292.3313  
 www.sailab.com lab@sailab.com

Lab Use Only  
 Lab Order ID: 71931190  
 Client Code: \_\_\_\_\_

Company Contact Information	
Company: OCCU-TEC Inc.	Contact: Justin Arnold
Address: 2604 NE Industrial Drive, Suite 230	Phone <input type="checkbox"/> : 816-810-3276
North Kansas City, MO 64117	Fax <input type="checkbox"/> : 816-994-3478
	Email :jarnold@occutec.com

Industrial Hygiene Test Types	
Silica as Alpha Quartz (XSZ)* <input type="checkbox"/>	With Respirable Dust (XDZ) <input type="checkbox"/>
Silica as Cristobalite (XSC)* <input type="checkbox"/>	With Respirable Dust (XDC) <input type="checkbox"/>
Silica as Tridymite (XST)* <input type="checkbox"/>	With Respirable Dust (XDT) <input type="checkbox"/>
Silica as Alpha Quartz, Cristobalite, Tridymite (XSA)* <input type="checkbox"/>	With Respirable Dust (XDA) <input type="checkbox"/>
Silica Bulk (XSI)*	<input type="checkbox"/>
Bulk Phase ID/Whole Rock (XUK)	<input type="checkbox"/>
Total Dust NIOSH Method 0500 (GTD)	<input type="checkbox"/>
Respirable Dust NIOSH Method 0600 (GRD)	<input type="checkbox"/>
PCM NIOSH 7400-A Rules (PCM)	<input type="checkbox"/>
B Rules (PCB) <input type="checkbox"/>	TWA (PTA) <input type="checkbox"/>
TEM NIOSH 7402 (Asbestos) (TNI)	<input type="checkbox"/>
Hexavalent Chromium (OSHA ID-215) (Note if from spray paint operations)	<input type="checkbox"/>
Metals (NIOSH 7300) (Specify Metals Under Comments)	<input checked="" type="checkbox"/>
Other _____	<input type="checkbox"/>

\* Modified NIOSH 7500/OSHA ID 142

Billing/Invoice Information	Turn Around Times <sup>^</sup>	
SAME <input checked="" type="checkbox"/>	90 Min. <input type="checkbox"/>	48 Hours <input type="checkbox"/>
Company:	3 Hours <input type="checkbox"/>	72 Hours <input type="checkbox"/>
Contact:	6 Hours <input type="checkbox"/>	96 Hours <input type="checkbox"/>
Address:	12 Hours <input type="checkbox"/>	120 Hours <input checked="" type="checkbox"/>
	24 Hours <input type="checkbox"/>	144 <sup>+</sup> Hours <input type="checkbox"/>
<sup>^</sup> TATs not available for certain test types		
PO Number:		
Project Name/Number: 919103		

Sample ID #	Description/Location	Volume/Area	Comments
122019-MetW-105F-01	Field Blank	N/A	Ag, As, Ba, Cd, Pb, Se
122019-MetW-105F-02	1 <sup>st</sup> Floor Column L34	1 sf	Ag, As, Ba, Cd, Pb, Se
122019-MetW-105F-03	1 <sup>st</sup> Floor Column P34	1 sf	Ag, As, Ba, Cd, Pb, Se
122019-MetW-105F-04	1 <sup>st</sup> Floor Column O30	1 sf	Ag, As, Ba, Cd, Pb, Se
122019-MetW-105F-05	2 <sup>nd</sup> Floor Column P27	1 sf	Ag, As, Ba, Cd, Pb, Se
122019-MetW-105F-06	2 <sup>nd</sup> Floor Column O30	1 sf	Ag, As, Ba, Cd, Pb, Se
122019-MetW-105F-07	2 <sup>nd</sup> Floor Column P33	1 sf	Ag, As, Ba, Cd, Pb, Se
<del>122019-MetW-105F-08</del>			<del>Ag, As, Ba, Cd, Pb, Se</del>

Total # of Samples 7

Relinquished by	Date/Time	Received by	Date/Time
		(b) (6)	12/12 10:30

Accepted   
 Rejected

Page 1 of 1

# **Appendix**

## **D**

Qualifications and  
Licenses

**STATE OF MISSOURI  
DEPARTMENT OF HEALTH AND SENIOR SERVICES**

**LEAD OCCUPATION LICENSE REGISTRATION**

Issued to:

**Austin G. O'Byrne**

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: **12/10/2018**  
Expiration Date: **12/10/2020**  
License Number: **181210-300005671**



(b) (6)

Randall W. Williams, MD, FCOG  
Director  
Department of Health and Senior Services

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