



2604 NE Industrial Drive, Suite 230  
North Kansas City, Missouri 64117  
Telephone: 816.231.5580  
Fax: 816.231.5641  
www.occutec.com

June 12, 2019

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

**RE: Goodfellow Federal Center - Metals in Air Investigation  
Building – #104F  
4300 Goodfellow Boulevard  
St. Louis, Missouri 63120  
OCCU-TEC Project No. 919083**

Dear Ms. Czarnecki:

Thank you for the opportunity to assist the General Services Administration (GSA) with the Resource Conservation and Recovery Act (RCRA) metals air sampling investigation of the above referenced buildings located at the Goodfellow Federal Center, in St. Louis, Missouri. OCCU-TEC understands that the purpose of the investigation was to provide sampling data regarding pre-existing conditions noted in investigation reports previously prepared for the facility. The following report summarizes the sample collection activities and the laboratory analytical results of the samples submitted.

On May 17, 2019, Missouri licensed air sampling professionals from OCCU-TEC conducted air sampling for the presence of seven of the RCRA metals including Silver, Arsenic, Barium, Cadmium, Chromium, Lead, and Selenium. Sampling was conducted on Building #104F.

The proposed sampling scheme, the numbers of samples, sample distribution and general methodology was developed based on previous investigation methodology and in coordination with the GSA. Sample locations were determined by OCCU-TEC field personnel while on-site.

### ***Resource Conservation and Recovery Act Metals Air Sampling***

Air sampling for RCRA metals was collected on 37-millimeter (mm) cassettes with 0.8 micrometer ( $\mu\text{m}$ ) mixed cellulose ester (MCE) filters using powered air sampling pumps in accordance with National Institute for Occupational Safety and Health (NIOSH) sampling methods. Samples were collected in a method sufficient to collect a minimum sample volume of 300 liters. Air samples were submitted under chain-of-custody to Scientific Analytical Institute, Inc. (SAI), for independent analysis of RCRA metals in accordance with NIOSH Method 7300. SAI is accredited by the American Industrial Hygiene Association (AIHA) utilizing the Industrial Hygiene Proficiency Analytical Testing (IHPAT) program. SAI's IHPAT Laboratory ID is 173190.

Results of the air sampling are summarized in the table below by identifying the range of results for Building #104F for each of the seven metals that were sampled.

**Please note that one sample (104F-A-07) was lost [REDACTED] and not included in the findings.**

**Samples with a “<” sign indicate that the results were below the laboratory’s method reporting limit.**

Analysis	Lowest Concentration ( $\mu\text{g}/\text{m}^3$ )	Highest Concentration ( $\mu\text{g}/\text{m}^3$ )
Silver (Ag)	<0.64	<0.64
Arsenic (As)	<0.64	<0.64
Barium (Ba)	<0.097	<0.097
Cadmium (Cd)	<0.025	<0.025
Total Chromium (Cr) *	<0.64	0.87
Lead (Pb)	<0.35	0.54
Selenium (Se)	<0.64	<0.64

\* The laboratory reported trace amounts of total chromium above the laboratory detection limit on many samples, including field blanks. According to the lab, low levels of Chromium can be found as a contaminant in varying levels on MCE filters for different manufacturers and lots.

Results of the air samples collected indicate that the air samples collected from Building #104F contained concentrations of RCRA metals below the laboratory’s method reporting limit and the OSHA Permissible Exposure Limit (PEL) with the exception of total Chromium. As previously noted, the elevated total chromium results were likely due to

contaminated MCE filter media. Sample location diagrams are included in Appendix A. Sample locations and the corresponding results are summarized in the laboratory analytical results that are included in Appendix B. The air sampling professional's Missouri Lead license is included in Appendix C.

It should be noted that this air sampling investigation was only a screening of airborne RCRA metals and should not be interpreted or used to determine compliance or non-compliance with OSHA personnel monitoring regulations.

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 Diagrams
- B: Laboratory Analytical Results and Chain of Custody Documentation
- C: Qualifications and Licenses

# Appendix A

## Sample Location Diagrams



(b) (7)(F)

**Figure 1: Air Sample Location Maps—Bldg. 104F**

Goodfellow Federal Center  
4300 Goodfellow Boulevard  
St. Louis, Missouri  
Project Number: 919083

# Appendix B

## Laboratory Analytical Results and Chain of Custody Documentation

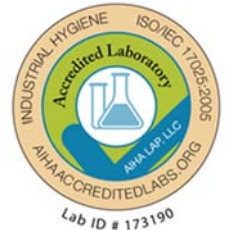
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# Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7303



<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> 71913746 <b>Date Received:</b> 05/21/2019 <b>Date Reported:</b> 06/10/2019 <b>Date Amended:</b> 06/11/2019
<b>Project:</b> 919083.001 GFC		<b>Page:</b> 1 of 5

Sample ID	Description	Volume (L)	Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/m <sup>3</sup> )
Lab Sample ID	Lab Notes					
104F-A01	LL P28	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	< 0.25	< 0.64
			Pb	0.13	< 0.13	< 0.33
71913746IPA_1			Se	0.25	< 0.25	< 0.64
104F-A02	LL L29	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	< 0.25	< 0.64
			Pb	0.13	< 0.13	< 0.33
71913746IPA_2			Se	0.25	< 0.25	< 0.64

Melissa Ferrell

**Analyst**

(b) (6)

**Lab Director**

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

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<b>Project:</b> 919083.001 GFC		<b>Page:</b> 2 of 5

Sample ID	Description	Volume (L)	Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/m³)
Lab Sample ID	Lab Notes					
104F-A03	LL P32	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	0.26	0.66
			Pb	0.13	0.21	0.54
71913746IPA_3			Se	0.25	< 0.25	< 0.64
104F-A04	LL M35	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	0.31	0.79
			Pb	0.13	< 0.13	< 0.33
71913746IPA_4			Se	0.25	< 0.25	< 0.64

Melissa Ferrell

**Analyst**

(b) (6)

**Lab Director**

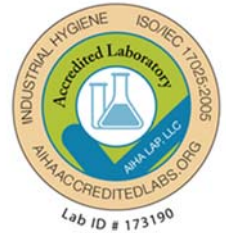
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# Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7303



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<b>Project:</b> 919083.001 GFC		<b>Page:</b> 3 of 5

Sample ID	Description	Volume (L)	Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/m <sup>3</sup> )
Lab Sample ID	Lab Notes					
104F-A05	UL L35	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	< 0.25	< 0.64
			Pb	0.13	< 0.13	< 0.33
71913746IPA_5			Se	0.25	< 0.25	< 0.64
104F-A06	UL L32	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	0.34	0.87
			Pb	0.13	< 0.13	< 0.33
71913746IPA_6			Se	0.25	< 0.25	< 0.64

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**Date Amended:** 06/11/2019

**Project:** 919083.001 GFC

**Page:** 4 of 5

Sample ID	Description	Volume (L)	Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/m <sup>3</sup> )
Lab Sample ID	Lab Notes					
104F-A07	UL M29	392	Ag	Not Submitted		
			As			
			Ba			
			Cd			
			Cr			
71913746IPA_7			Pb			
			Se			
104F-A08	UL P28	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	0.30	0.77
71913746IPA_8			Pb	0.13	< 0.13	< 0.33
			Se	0.25	< 0.25	< 0.64

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				<b>Date Amended:</b>	06/11/2019
<b>Project:</b>	919083.001 GFC			<b>Page:</b>	5 of 5

Sample ID	Description	Volume (L)	Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/m <sup>3</sup> )
Lab Sample ID	Lab Notes					
104F-A09	FB	-	Ag	0.25	< 0.25	--
			As	0.25	< 0.25	--
			Ba	0.038	< 0.038	--
			Cd	0.025	< 0.025	--
			Cr	0.25	0.28	--
			Pb	0.13	< 0.13	--
71913746IPA_9			Se	0.25	< 0.25	--

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**Analyst**

(b) (6)

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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: 71913740  
 Client Code: \_\_\_\_\_

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

Industrial Hygiene Test Types	
Silica as Alpha Quartz (XSZ)* ☐ With Respirable Dust (XDZ) ☐	
Silica as Cristobalite (XSC)* ☐ With Respirable Dust (XDC) ☐	
Silica as Tridymite (XST)* ☐ With Respirable Dust (XDT) ☐	
Silica as Alpha Quartz, Cristobalite, Tridymite (XSA)* ☐ With Respirable Dust (XDA) ☐	
Silica Bulk (XSI)*	☐
Bulk Phase ID/Whole Rock (XUK)	☐
Total Dust NIOSH Method 0500 (GTD)	☐
Respirable Dust NIOSH Method 0600 (GRD)	☐
PCM NIOSH 7400-A Rules (PCM)	☐
B Rules (PCB) ☐ TWA (PTA) ☐	
TEM NIOSH 7402 (Asbestos) (TNI)	☐
Hexavalent Chromium (OSHA ID-215) (Note if from spray paint operations)	☐
Metals (NIOSH 7300) (Specify Metals Under Comments)	☐
Other 6010 C	<input checked="" type="checkbox"/>

\* Modified NIOSH 7500/OSHA ID 142

Billing/Invoice Information	Turn Around Times <sup>^</sup>	
SAME <input checked="" type="checkbox"/>	90 Min. ☐	48 Hours ☐
Company:	3 Hours ☐	72 Hours ☐
Contact:	6 Hours ☐	96 Hours ☐
Address:	12 Hours ☐	120 Hours ☐
	24 Hours ☐	144 <sup>+</sup> Hours <input checked="" type="checkbox"/>
	<sup>^</sup> TATs not available for certain test types	
PO Number:		
Project Name/Number: 919083.001 GFC		

Sample ID #	Description/Location	Volume/Area	Comments
104F-A-01	LL P28	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
104F-A-02	LL L29	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
104F-A-03	LL P32	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
104F-A-04	LL M35	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
104F-A-05	UL L35	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
104F-A-06	UL L32	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
104F-A-07	UL M29	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
104F-A-08	UL P28	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
104F-A-09	FB	N/A	Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
		Accepted <input checked="" type="checkbox"/>	Ag, As, Ba, Cd, Cr, Pb, Se
		Rejected <input type="checkbox"/>	Ag, As, Ba, Cd, Cr, Pb, Se

Total # of Samples \_\_\_\_\_

Relinquished by	Date/Time	Received by	Date/Time
(b) (6)	5/17/19 17:00	(b) (6)	5-22 10:30am

# Appendix C

## Qualifications and Licenses

|



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

**LEAD OCCUPATION LICENSE REGISTRATION**

Issued to:

**Justin E. 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: **6/11/2018**  
Expiration Date: **6/11/2020**  
License Number: **120611-300003622**

(b) (6)



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