December 2, 2021

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

Re: Goodfellow Federal Center – Building 104 USDA Print Shop Air and Wipe Sampling Evaluation
Project No. 121244

Dear Ms. Czarnecki:

Thank you for the opportunity to provide the General Services Administration (GSA) with the above referenced environmental sampling activities. The following is our report.

INTRODUCTION

As requested, Burns & McDonnell conducted area air and dust wipe sampling and testing for the presence of seven (7) of the RCRA metals including arsenic, barium, cadmium, chromium, lead, selenium, and silver within the USDA Print Shop in Building 104 of the Goodfellow Federal Center located at 4300 Goodfellow Boulevard in St. Louis, Missouri. The purpose of the investigation was to provide sampling data regarding existing conditions and to verify cleaning effectiveness on recently cleaned surfaces. Air and dust wipe sampling was conducted on November 19, 2021 by Ashley Anstaett of Burns & McDonnell.

DUST WIPE SAMPLING AND RESULTS

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 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.

A representative surface area of approximately one square foot (1 SF) was measured and delineated. 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 8 of the 9 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.

Table 1. Summary of Dust Wipe Results

Analyte	Lowest Concentration[(a)] (µg/sq. ft) [(b)]	Highest Concentration[(a)] (µg/sq. ft) [(b)]	Clean Area Limit [(c)] µg/sq. ft [(b)]
Silver	<0.50	<0.75	62
Arsenic	<2.50	<2.5	62
Barium	0.77	5.6	3,094
Cadmium	<0.10	1.4	31
Chromium (Total)	<1.0	2.2	3,094
Lead	<0.50	4.9	10 [(d)]
Selenium	<2.50	<3.8	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^3) x 10 m^3/100cm^2] x 929cm^2/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.

No dust wipe samples exceeded the lead clean area limit and all dust wipe target metal sample results were below housekeeping and clean area limits, as recommended and described by OSHA and the Brookhaven Procedure.

A summary table of all wipe sampling results by location is included in Appendix A. The complete laboratory report for the wipe sampling from EHS is attached in Appendix B.

AIR SAMPLING AND RESULTS

Air samples for RCRA metals were collected on 37-millimeter (mm) cassettes with 0.8 micrometer (µm) mixed cellulose ester (MCE) filters, using powered air sampling pumps, in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 7300. The sampling strategy included collecting a minimum sample volume of 500 liters based on the calibrated pump flow rate and sample duration. Air samples were submitted under chain-of-custody to Environmental Hazards Services, LLC (EHS) in Richmond, Virginia for independent analysis of 7 RCRA metals according to NIOSH method 7300. EHS is accredited under the American Industrial Hygiene Association (AIHA) Industrial Hygiene Laboratory Accreditation Program (IHLAP) program, identification number LAP-100420.

Results of the air sampling indicate that the one air sample collected from Building 104 and analyzed for RCRA metals were below laboratory reporting limits and their respective OSHA Permissible Exposure Limits (PELs), as based on a time-weighted-average.

GSA may choose to compare results with guidance limits from additional organizations for risk evaluation, including but not limited to the American Conference of Governmental Industrial Hygienists (ACGIH) and/or the World Health Organization (WHO).

A summary table of all sampling results by location is included in Appendix C. The complete laboratory report for the air sampling from EHS is attached in Appendix D.

LIMITATIONS

The scope of this assessment was limited in nature. Burns & McDonnell collected samples from a representative number of surfaces in an effort to minimize cost while providing a general overview of site conditions. Sample locations do not encompass all equipment surfaces at the site. Additionally, samples were only analyzed for a select number of potential contaminants. Burns & McDonnell is not responsible for potential contaminants not identified in this report.

Burns & McDonnell appreciates the opportunity to work 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 – Wipe Sampling Summary Table
- Appendix B – Wipe Sampling Laboratory Report
- Appendix C – Air Sampling Summary Table
- Appendix D – Air Sampling Laboratory Report

Information in Appendices B and D are 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.

APPENDIX A – WIPE SAMPLING SUMMARY TABLE

Appendix A
Wipe Sample Summary Table

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
104-W-01	Field Blank	--	Silver	< 0.500	µg	--
104-W-01	Field Blank	--	Arsenic	< 2.50	µg	--
104-W-01	Field Blank	--	Barium	< 0.500	µg	--
104-W-01	Field Blank	--	Cadmium	< 0.100	µg	--
104-W-01	Field Blank	--	Chromium	< 1.00	µg	--
104-W-01	Field Blank	--	Lead	< 0.500	µg	--
104-W-01	Field Blank	--	Selenium	< 2.50	µg	--
104-W-02	USDA, Print Shop	Floor vent in front of Xerox, column D31	Silver	< 0.50	µg/ft^2	62
104-W-02	USDA, Print Shop	Floor vent in front of Xerox, column D31	Arsenic	< 2.5	µg/ft^2	62
104-W-02	USDA, Print Shop	Floor vent in front of Xerox, column D31	Barium	3.7	µg/ft^2	3,094
104-W-02	USDA, Print Shop	Floor vent in front of Xerox, column D31	Cadmium	0.21	µg/ft^2	31
104-W-02	USDA, Print Shop	Floor vent in front of Xerox, column D31	Chromium	2.2	µg/ft^2	3,094
104-W-02	USDA, Print Shop	Floor vent in front of Xerox, column D31	Lead	2.0	µg/ft^2	10
104-W-02	USDA, Print Shop	Floor vent in front of Xerox, column D31	Selenium	< 2.5	µg/ft^2	1,236
104-W-03	USDA, Print Shop	Small table next to book shelf, Column D31	Silver	< 0.50	µg/ft^2	62
104-W-03	USDA, Print Shop	Small table next to book shelf, Column D31	Arsenic	< 2.5	µg/ft^2	62
104-W-03	USDA, Print Shop	Small table next to book shelf, Column D31	Barium	1.7	µg/ft^2	3,094
104-W-03	USDA, Print Shop	Small table next to book shelf, Column D31	Cadmium	0.12	µg/ft^2	31
104-W-03	USDA, Print Shop	Small table next to book shelf, Column D31	Chromium	< 1.0	µg/ft^2	3,094
104-W-03	USDA, Print Shop	Small table next to book shelf, Column D31	Lead	2.2	µg/ft^2	10
104-W-03	USDA, Print Shop	Small table next to book shelf, Column D31	Selenium	< 2.5	µg/ft^2	1,236
104-W-04	USDA, Print Shop	Facing Printer 6, ceiling vent on front right side	Silver	< 0.75	µg/ft^2	62
104-W-04	USDA, Print Shop	Facing Printer 6, ceiling vent on front right side	Arsenic	< 2.5	µg/ft^2	62
104-W-04	USDA, Print Shop	Facing Printer 6, ceiling vent on front right side	Barium	1.6	µg/ft^2	3,094
104-W-04	USDA, Print Shop	Facing Printer 6, ceiling vent on front right side	Cadmium	< 0.15	µg/ft^2	31
104-W-04	USDA, Print Shop	Facing Printer 6, ceiling vent on front right side	Chromium	< 1.5	µg/ft^2	3,094
104-W-04	USDA, Print Shop	Facing Printer 6, ceiling vent on front right side	Lead	1.7	µg/ft^2	10
104-W-04	USDA, Print Shop	Facing Printer 6, ceiling vent on front right side	Selenium	< 3.8	µg/ft^2	1,236
104-W-05	USDA, Print Shop	Top of Printer 6, to right of computer station	Silver	< 0.50	µg/ft^2	62
104-W-05	USDA, Print Shop	Top of Printer 6, to right of computer station	Arsenic	< 2.5	µg/ft^2	62
104-W-05	USDA, Print Shop	Top of Printer 6, to right of computer station	Barium	0.88	µg/ft^2	3,094
104-W-05	USDA, Print Shop	Top of Printer 6, to right of computer station	Cadmium	< 0.10	µg/ft^2	31
104-W-05	USDA, Print Shop	Top of Printer 6, to right of computer station	Chromium	< 1.0	µg/ft^2	3,094
104-W-05	USDA, Print Shop	Top of Printer 6, to right of computer station	Lead	0.78	µg/ft^2	10
104-W-05	USDA, Print Shop	Top of Printer 6, to right of computer station	Selenium	< 2.5	µg/ft^2	1,236

Appendix A
Wipe Sample Summary Table

Sample Number	Location	Area Description	Analyte	Result	Units	Clean Area Limit*
104-W-06	USDA, Print Shop	Printer inserter between column C30 & C31	Silver	< 0.50	µg/ft^2	62
104-W-06	USDA, Print Shop	Printer inserter between column C30 & C31	Arsenic	< 2.5	µg/ft^2	62
104-W-06	USDA, Print Shop	Printer inserter between column C30 & C31	Barium	0.77	µg/ft^2	3,094
104-W-06	USDA, Print Shop	Printer inserter between column C30 & C31	Cadmium	< 0.10	µg/ft^2	31
104-W-06	USDA, Print Shop	Printer inserter between column C30 & C31	Chromium	< 1.0	µg/ft^2	3,094
104-W-06	USDA, Print Shop	Printer inserter between column C30 & C31	Lead	< 0.50	µg/ft^2	10
104-W-06	USDA, Print Shop	Printer inserter between column C30 & C31	Selenium	< 2.5	µg/ft^2	1,236
104-W-07	USDA, Print Shop	Orange desk against column D30	Silver	< 0.50	µg/ft^2	62
104-W-07	USDA, Print Shop	Orange desk against column D30	Arsenic	< 2.5	µg/ft^2	62
104-W-07	USDA, Print Shop	Orange desk against column D30	Barium	0.82	µg/ft^2	3,094
104-W-07	USDA, Print Shop	Orange desk against column D30	Cadmium	0.84	µg/ft^2	31
104-W-07	USDA, Print Shop	Orange desk against column D30	Chromium	< 1.0	µg/ft^2	3,094
104-W-07	USDA, Print Shop	Orange desk against column D30	Lead	1.2	µg/ft^2	10
104-W-07	USDA, Print Shop	Orange desk against column D30	Selenium	< 2.5	µg/ft^2	1,236
104-W-08	USDA, Print Shop	Ceiling vent between columns C30 & D30	Silver	< 0.75	µg/ft^2	62
104-W-08	USDA, Print Shop	Ceiling vent between columns C30 & D30	Arsenic	< 2.5	µg/ft^2	62
104-W-08	USDA, Print Shop	Ceiling vent between columns C30 & D30	Barium	5.6	µg/ft^2	3,094
104-W-08	USDA, Print Shop	Ceiling vent between columns C30 & D30	Cadmium	1.4	µg/ft^2	31
104-W-08	USDA, Print Shop	Ceiling vent between columns C30 & D30	Chromium	< 1.5	µg/ft^2	3,094
104-W-08	USDA, Print Shop	Ceiling vent between columns C30 & D30	Lead	4.9	µg/ft^2	10
104-W-08	USDA, Print Shop	Ceiling vent between columns C30 & D30	Selenium	< 3.8	µg/ft^2	1,236
104-W-09	USDA, Print Shop	Floor vent behind inserter, column C30	Silver	< 0.50	µg/ft^2	62
104-W-09	USDA, Print Shop	Floor vent behind inserter, column C30	Arsenic	< 2.5	µg/ft^2	62
104-W-09	USDA, Print Shop	Floor vent behind inserter, column C30	Barium	3.2	µg/ft^2	3,094
104-W-09	USDA, Print Shop	Floor vent behind inserter, column C30	Cadmium	0.23	µg/ft^2	31
104-W-09	USDA, Print Shop	Floor vent behind inserter, column C30	Chromium	< 1.0	µg/ft^2	3,094
104-W-09	USDA, Print Shop	Floor vent behind inserter, column C30	Lead	1.3	µg/ft^2	10
104-W-09	USDA, Print Shop	Floor vent behind inserter, column C30	Selenium	< 2.5	µg/ft^2	1,236

* Clean Area Limit per Brookhaven IH75190=OSHA Housekeeping Limit [[PEL (µg/m^3) x 10 m^3/100cm^2] x 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

µg/ft^2 - micrograms per square foot

APPENDIX B – WIPE SAMPLING LABORATORY 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: 21-11-03981

Received Date: 11/23/2021
Analyzed Date: 11/24/2021
Reported Date: 11/24/2021

Project/Test Address: GFC; 4300 Goodfellow Blvd.

Client Number:
26-3514

Laboratory Results

Fax Number:
816-822-3494

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft²)	Total Metal (ug)	Concentration (ug/ft²)	Narrative ID
21-11-03981-001	104-W-01	Arsenic (As)		<2.50	---	
		Barium (Ba)		<0.500	---	
		Cadmium (Cd)		<0.100	---	
		Chromium (Cr)		<1.00	---	
		Lead (Pb)		<0.500	---	
		Selenium (Se)		<2.50	---	
		Silver (Ag)		<0.500	---	
21-11-03981-002	104-W-02	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	3.68	3.7	
		Cadmium (Cd)	1.00	0.210	0.21	
		Chromium (Cr)	1.00	2.16	2.2	

Client Number: 26-3514 **Report Number:** 21-11-03981
Project/Test Address: GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft^2)	Total Metal (ug)	Concentration (ug/ft^2)	Narrative ID
		Lead (Pb)	1.00	2.04	2.0	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-11-03981-003	104-W-03	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	1.68	1.7	
		Cadmium (Cd)	1.00	0.115	0.12	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	2.20	2.2	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-11-03981-004	104-W-04	Arsenic (As)	0.667	<2.50	<2.5	
		Barium (Ba)	0.667	1.04	1.6	
		Cadmium (Cd)	0.667	<0.100	<0.15	
		Chromium (Cr)	0.667	<1.00	<1.5	
		Lead (Pb)	0.667	1.12	1.7	
		Selenium (Se)	0.667	<2.50	<3.8	
		Silver (Ag)	0.667	<0.500	<0.75	
21-11-03981-005	104-W-05	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	0.885	0.88	

Client Number: 26-3514 **Report Number:** 21-11-03981

Project/Test Address: GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft^2)	Total Metal (ug)	Concentration (ug/ft^2)	Narrative ID
		Cadmium (Cd)	1.00	<0.100	<0.10	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	0.780	0.78	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	
21-11-03981-006	104-W-06	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	0.770	0.77	
		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	
21-11-03981-007	104-W-07	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	0.820	0.82	
		Cadmium (Cd)	1.00	0.835	0.84	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	1.22	1.2	
		Selenium (Se)	1.00	<2.50	<2.5	
		Silver (Ag)	1.00	<0.500	<0.50	

Client Number: 26-3514 **Report Number:** 21-11-03981

Project/Test Address: GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft^2)	Total Metal (ug)	Concentration (ug/ft^2)	Narrative ID
21-11-03981-008	104-W-08	Arsenic (As)	0.667	<2.50	<2.5	
		Barium (Ba)	0.667	3.72	5.6	
		Cadmium (Cd)	0.667	0.900	1.4	
		Chromium (Cr)	0.667	<1.00	<1.5	
		Lead (Pb)	0.667	3.27	4.9	
		Selenium (Se)	0.667	<2.50	<3.8	
		Silver (Ag)	0.667	<0.500	<0.75	
21-11-03981-009	104-W-09	Arsenic (As)	1.00	<2.50	<2.5	
		Barium (Ba)	1.00	3.17	3.2	
		Cadmium (Cd)	1.00	0.230	0.23	
		Chromium (Cr)	1.00	<1.00	<1.0	
		Lead (Pb)	1.00	1.30	1.3	
		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:** 21-11-03981

Project/Test Address: GFC; 4300 Goodfellow Blvd.

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft^2)	Total Metal (ug)	Concentration (ug/ft^2)	Narrative ID

Sample Narratives:

Analyst: Kailee Guthrie

Method: Mercury (Hg): EPA SW846 7471B

All other metals: EPA SW846 3050B/6010D

Reviewed By Authorized Signatory: (b) (6)

Tasha Eaddy

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^2 = micrograms per square foot
	mL = milliliter	ft^2 = square foot

For all wipes do ICP for Ag, As, Ba, Cd, Cr, Pb, Se. Thanks!

ENVIRONMENTAL HAZARDS SERVICES, LLC

Metals Chain of Custody Form

Pg 1 of 1

Company Name	Burns & McDonnell	Account #	26-3514
Company Address	9400 Ward Parkway	City/State/Zip	Kansas City, MO 64114
Phone	314-302-4661	Email	eaahlemeyer@burnsmcd.com
Project Name / Testing Address	GFC / 4300 Goodfellow Blvd		
PO Number	168765	Collected By	
Turn-Around Time	○ 3 DAY ○ 2 DAY ☒ 1 DAY ○ SAME DAY OR WEEKEND - Must Call Ahead		

LAB NUMBER	Client Sample ID	Collection Date & Time	METALS: Pb TCLP	TCLP RCRA 8	RCRA 8 Total	Toxic Metal Profile	Welding Fume Profile	TX 11 TCLP	CA 17 Total	Other Metals	PARTICULATES: Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	AIR: Total Time (Mins.)	Flow Rate (L/min.)	Vol. Total Liters	WIPES: AREA (Circle The Unit of Measurement Used: cm or in)
1	104-A-01	11/19 1040								As, As, Ba, Cd Cr, Pb, Se						NA		NA	x
2	104-A-03	1441														240		543	x
3	104-W-01	1045								ICP									NA x NA
4	104-W-02	1049								ICP									12 x 12
5	104-W-03	1050								ICP									12 x 12
6	104-W-04	1058								ICP									24 x 4
7	104-W-05	1103								ICP									12 x 12
8	104-W-06	1110								ICP									12 x 12
9	104-W-07	1115								ICP									12 x 12
10	104-W-08	1120								ICP									24 x 4
11	104-W-09	1438								ICP									12 x 12
12																			x
13																			x
14																			x
15																			x

Released By: Ashley Anstaett Date: 11/22/21 Time: 1630

Signature: (b) (6) [redacted]

LAB USE ONLY – BELOW THIS LINE

Received By: TStone

Signature: (b) (6) [redacted]

Date: 11/23/21 Time: 12:31 ☐ AM ☒ PM

☐ Portal Contact Added

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

RESULTS VIA CLIENT PORTAL AVAILABLE @ www.leadlab.com

21-11-03981

Due Date:
11/24/2021
(Wednesday)
EL MM-L

APPENDIX C – AIR SAMPLING SUMMARY TABLE

Appendix C
Air Sample Summary Table

Sample Number	Location	Analyte	Result	Units	Recommended Limits*
104-A-01	Field Blank	Silver	< 0.15	µg	10
104-A-01	Field Blank	Arsenic	< 0.15	µg	10
104-A-01	Field Blank	Barium	< 0.15	µg	500
104-A-01	Field Blank	Cadmium	< 0.030	µg	5
104-A-01	Field Blank	Chromium	< 0.75	µg	500
104-A-01	Field Blank	Lead	< 0.15	µg	50
104-A-01	Field Blank	Selenium	< 0.75	µg	200
104-A-03	Long table, column C31	Silver	< 0.26	$\mu g/m^3$	10
104-A-03	Long table, column C31	Arsenic	< 0.26	$\mu g/m^3$	10
104-A-03	Long table, column C31	Barium	< 0.26	$\mu g/m^3$	500
104-A-03	Long table, column C31	Cadmium	< 0.051	$\mu g/m^3$	5
104-A-03	Long table, column C31	Chromium	< 1.3	$\mu g/m^3$	500
104-A-03	Long table, column C31	Lead	< 0.26	$\mu g/m^3$	50
104-A-03	Long table, column C31	Selenium	< 1.3	$\mu g/m^3$	200

*Limits equal to the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs)

$\mu g/m^3$ - micrograms per cubic meter

APPENDIX D – AIR SAMPLING LABORATORY REPORT

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

Air Metals Analysis Report

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

Report Number: 21-11-03976
Received Date: 11/23/2021
Reported Date: 11/24/2021

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	Analyzed Date	Analyte	Air Volume (L)	Total Metal (ug)	Concentration (ug/m³)	Narrative ID
21-11-03976-001	104-A-01	11/24/2021	Arsenic (As)	0	<0.15	---	
			Barium (Ba)		<0.15	---	
			Cadmium (Cd)		<0.030	---	
			Chromium (Cr)		<0.75	---	
			Lead (Pb)		<0.15	---	
			Selenium (Se)		<0.75	---	
			Silver (Ag)		<0.15	---	
21-11-03976-002	104-A-03	11/24/2021	Arsenic (As)	593	<0.15	<0.26	
			Barium (Ba)		<0.15	<0.26	
			Cadmium (Cd)		<0.030	<0.051	
			Chromium (Cr)		<0.75	<1.3	
			Lead (Pb)		<0.15	<0.26	
			Selenium (Se)		<0.75	<1.3	
			Silver (Ag)		<0.15	<0.26	

Environmental Hazards Services, L.L.C

Client Number: 26-3514 Report Number: 21-11-03976

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

Lab Sample Number	Client Sample Number	Analyzed Date	Analyte	Air Volume (L)	Total Metal (ug)	Concentration (ug/m³)	Narrative ID

Sample Narratives:

Method: NIOSH 7300M

Analyst: Kailee Guthrie

Reviewed By Authorized Signatory: (b) (6) [redacted]

Tasha Eaddy
QA/QC Clerk

Sample Results denoted with a “less than” (<) sign contains less than the reporting limit for each particular metal, based on a 15mL volume. The reporting limit is 0.03ug for Cadmium, 0.15ug for Arsenic, Barium, Lead and Silver, and 0.75ug for Chromium and Selenium.

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/m³ = micrograms per cubic meter
	mL = milliliter	L= Liters

For all wipes do ICP for Ag, As, Ba, Cd, Cr, Pb, Se. Thanks!

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	eaahlemeyer@burnsmcd.com
Project Name / Testing Address	GFC / 4300 Goodfellow Blvd		
PO Number	168765	Collected By	
Turn-Around Time	○ 3 DAY ○ 2 DAY ☒ 1 DAY ○ SAME DAY OR WEEKEND - Must Call Ahead		

LAB NUMBER	Client Sample ID	Collection Date & Time	METALS: Pb TCLP	TCLP RCRA 8	RCRA 8 Total	Toxic Metal Profile	Welding Fume Profile	TX 11 TCLP	CA 17 Total	Other Metals	PARTICULATES: Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	AIR: Total Time (Mins.)	Flow Rate (L/min.)	Vol. (Total Liters)	WIPES: AREA (Circle The Unit of Measurement Used: cm or (in))
1	104-A-01	11/9 1010								As, Ba, Cd, Cr, Pb, Se						NA		NA	x
2	104-A-03	1441														240		593	x
3	104-W-01	1045								ICP									NA x NA
4	104-W-02	1049								ICP									12 x 12
5	104-W-03	1050								ICP									12 x 12
6	104-W-04	1058								ICP									24 x 4
7	104-W-05	1103								ICP									12 x 12
8	104-W-06	1110								ICP									12 x 12
9	104-W-07	1115								ICP									12 x 12
10	104-W-08	1120								ICP									24 x 4
11	104-W-09	1436								ICP									12 x 12
12																			x
13																			x
14																			x
15																			x

Released By: Ashley Anstaett Date: 11/22/21 Time: 1630

Signature: (b) (6)

LAB USE ONLY – BELOW THIS LINE

Received By: TStone

Signature: (b) (6)

Date: 11/23/21 Time: 12:31 ☐ AM ☒ PM

☐ Portal Contact Added

21-11-03976

Due Date: 11/24/2021 (Wednesday)

EL MM-L

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

RESULTS VIA CLIENT PORTAL AVAILABLE @ www.leadlab.com