Introduction of clearance wipe sampling on Building 110 basement project

The following reports analyze wipe samples for lead, which were collected during the demolition project in the basement of Building 110. GSA’s industrial hygiene consultant took the samples to determine if the area met criteria for re-occupancy or for entry by unprotected workers, referred to as clearance sampling. Results from clearance sampling are also a way to determine if the work practices and engineering controls used in the project work were adequate to control lead dust and prevent further contamination.

GSA’s requirement was that the sampling results be less than or equal to 200 micrograms per square foot, which was the background level. The report dated Dec. 13 represents initial clearance sampling. Out of six samples taken, two exceeded the background level. Although a work practice of using poly sheeting on the floor should have minimized the amount of dust reaching the bare floor, it is possible the sheeting moved while the contractor worked or that dragging the poly sheeting away to remove it resulted in dust from the sheeting settling on the floor. As per the contractor’s Site Specific Safety Plan for working in the controlled space, their workers involved in demolition wore personal protective equipment.

GSA asked the contractor to reclean the areas with the elevated results. GSA’s industrial hygiene consultant took subsequent wipe samples. The report dated Jan. 6 represents the final clearance sampling. Both samples resulted in levels well below the background level. The space has been released to the contractor to begin the next phase of the project.
December 13, 2019

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  
Lead in Settled Dust Clearance Sampling  
Building 110 – Basement Negative Air Project  
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 lead in settled dust clearance 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 clearance sampling data after completion of duct demolition with the basement of Building 110. The following report summarizes the sample collection activities and the laboratory analytical results.

On December 11, 2019, OCCU-TEC conducted settled dust sampling for the presence of lead from within the basement of Building 110. The purpose of this testing was to provide clearance information and verify the effectiveness of best management practices utilized by the contractor completing duct removal activities associated with the current basement negative air project.

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.
Lead in Settled Dust Sampling

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 CRF 745.63. The Brookhaven National Laboratory’s Surface Wipe Sampling Procedure (IH75190) was also used as a guideline.

Dust wipe sampling for lead was conducted on a floor surfaces below locations were ducting has previously been removed. A representative surface area of approximately one square foot (1 SF) was measured and delineated with pre-fabricated, disposable templates. 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 Scientific Analytical Institute, Inc. (SAI) in Greensboro, North Carolina for Inductively Coupled Plasma (ICP) analysis of lead analysis using Environmental Protection Agency (EPA) method SW846 350B/7420.

Results of the dust wipe samples collected from the building indicate that two (2) of six (6) samples contained concentrations of lead above the clearance criteria of 200 ug/ft² established by background concentrations previously measured in the space.

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,

Kevin Heriford
Environmental Operations Manager

Jeff Smith
Senior Project Manager (QA/QC)

Appendices:

A - Laboratory Analysis Reports
Appendix A

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

NIOSH 7300/EPA SW-846 3050B

Client: OCCU-TEC Inc.  
Attn: Kevin Heriford  
Lab Order ID: 71931088  
Date Received: 12/12/2019  
Date Reported: 12/12/2019

Project: 110 Basement Clearance #919103

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<thead>
<tr>
<th>Sample ID</th>
<th>Description</th>
<th>Area (ft²)</th>
<th>*Element</th>
<th>Reporting Limit (µg)</th>
<th>Concentration (µg)</th>
<th>Concentration (µg/ft²)</th>
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<td>110-CLB-01</td>
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* 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 ELAP program. ELAP Laboratory ID: 173190.

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407  (336) 292-3888

Melissa Ferrell  
Analyst

Lab Director
## Contact Information

**Company Name:** OCUCU-TEC Inc  
**Address:** 2604 NE Industrial Drive #230  
**City, State Zip:** Kansas City, MO 64117  

**Contact:** Kevin Hariford  
**Phone:** 816-825-0628  
**Fax:** 816-994-3406a  
**Email:** hariford@ececutecc.com  
**PO Number:** 919103  
**Project Name/Number:** I10 Basement Clearance #919103

## Lead Test Types

- Paint Chips by Flame AA (PBP)
- Soil by Flame AA (PBS)
- Wipe by Flame AA (PBW)
- Air by Flame AA (PBA)

- Other

## Sample Information

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<th>Description/Location</th>
<th>Volume/Area</th>
<th>Comments</th>
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<td>Floor by 5 3</td>
<td>1 SF</td>
<td>Pb only</td>
</tr>
<tr>
<td>110-CLL-02</td>
<td>Floor by 5 12</td>
<td>1 SF</td>
<td>Pb only</td>
</tr>
<tr>
<td>110-CLL-03</td>
<td>Floor by D 16</td>
<td>1 SF</td>
<td>Pb only</td>
</tr>
<tr>
<td>110-CLL-04</td>
<td>Floor by E16</td>
<td>1 SF</td>
<td>Pb only</td>
</tr>
<tr>
<td>110-CLL-05</td>
<td>Floor by E 13</td>
<td>1 SF</td>
<td>Pb only</td>
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<td>110-CLL-06</td>
<td>Floor by L 14</td>
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<td>Pb Only</td>
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</tbody>
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- **Total Number of Samples:** [ ]

- **Accepted:** [ ]
- **Rejected:** [ ]

## Billing/Invoice Information

**Company:** Same  
**Address:**  
**Contact:**  
**Phone:**  
**Fax:**  
**Email:**

## Turn Around Times

- 3 Hours [ ] 72 Hours [ ]
- 6 Hours [ ] 96 Hours [ ]
- 12 Hours [ ] 120 Hours [ ]
- 24 Hours [ ] 144+ Hours [ ]
- 48 Hours [ ]

## Additional Information

- Relinquished by: [Signature]  
- Date/Time: 12/11/19 1600  
- Received by: Brian Buggley  
- Date/Time: 12/12 10:30 AM
January 6, 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  
Lead in Settled Dust Clearance Sampling  
Building 110 – Basement Negative Air Project  
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 this lead in settled dust clearance 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 conduct clearance sampling after the completion of duct demolition activities within the basement of building 110. Samples collected during this event were in response to previous failures noted in two clearance samples that were collected on December 11, 2019 and the subsequent recleaning that was completed by the contractor. The following report summarizes the sample collection activities and the laboratory analytical results of samples submitted.

On December 30, 2019, OCCU-TEC conducted additional settled dust clearance sampling for the presence of lead from within the basement of building 110. The locations of samples were based on the initial location of the samples that did not meet the clearance criteria set forth by the GSA.
**Lead in Settled Dust Sampling**

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 CRF 745.63. The Brookhaven National Laboratory’s Surface Wipe Sampling Procedure (IH75190) was also used as a guideline.

Dust wipe sampling for lead was conducted on floor surfaces where previous samples had failed clearance criteria and additional cleaning was conducted. A representative surface area of approximately one square foot (1 SF) was measured and delineated with pre-fabricated disposable templates. 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 Scientific Analytical Institute, Inc. (SAI) in Greensboro, North Carolina for Inductively Coupled Plasma (ICP) analysis of lead analysis using Environmental Protection Agency (EPA) method SW846 350B/7420.

Results of the dust wipe samples indicated concentrations of lead below the established clearance criteria of 200 ug/ft².

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,

Justin Arnold, CIEC  
Environmental Scientist

Kevin Heriford  
Environmental Operations Manager (QA/QC)

**Attachments:**
Laboratory Analytical Report and Chain-of-Custody Documentation  
Inspector Qualifications
# Test Report: Lead in Dust by Flame AAS (SW 846 3050B/7000B)*

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<thead>
<tr>
<th>Client SampleDescription</th>
<th>Collected</th>
<th>Analyzed</th>
<th>Area Sampled</th>
<th>RDL</th>
<th>Lead Concentration</th>
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<tbody>
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<td>110-CLB-08 391913581-0001</td>
<td>12/31/2019</td>
<td>144 in²</td>
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<td>20 µg/ft²</td>
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<td>110-CLB-09 391913581-0002</td>
<td>12/31/2019</td>
<td>144 in²</td>
<td>10 µg/ft²</td>
<td>&lt;10 µg/ft²</td>
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</tr>
<tr>
<td>110-CLB-10 391913581-0003</td>
<td>12/31/2019</td>
<td>N/A</td>
<td>10 µg/wipe</td>
<td>&lt;10 µg/wipe</td>
<td></td>
</tr>
</tbody>
</table>

*Analysis following Lead in Dust by EMSL SOP/ Determination of Environmental Lead by FLAA. Reporting limit is 10 µg/wipe, ug/wipe =µg/ft² x area sampled in ft². Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities (such as volume sampled) or analytical method limitations. Samples received in good condition unless otherwise noted. The lab is not responsible for data reported in µg/ft² which is dependent on the area provided by non-lab personnel. The test results contained within this report meet the requirements of NELAC unless otherwise noted. "<" (less than) results signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request. Samples analyzed by EMSL Analytical, Inc. Saint Louis, MO AIHA-LAP, LLC–ELLAP Accredited #102636

Initial report from 12/31/2019 09:27:33
**Lead (Pb) Chain of Custody**

**Company**: OCCU-TEC INC  
**Street**: 21604 NE Industrial Drive Suite 230  
**City**: North Kansas City  
**State/Province**: MO  
**Order ID**: 3913581  
**Bill to**: Same  
**Third Party Billing**: Requires written authorization from third party  
**Zip/Postal Code**:  
**Country**:  
**Telephone #**:  
**Fax #**:  
**Purchase Order**:  
**CT Samples**: Commercial/Taxable  
**Residential/Tax Exempt**:  
**Report To (Name)**: Justin Arnold  
**Email Address**: jarnold@occutech.com  
**Project Name/Number**: G1903  
**U.S. State Samples Taken**: MO  
**Turnaround Time (TAT) Options** - Please Check  
- 3 Hour  
- 8 Hour  
- 24 Hour  
- 32 Hour  
- 48 Hour  
- 72 Hour  
- 96 Hour  
- 1 Week  
- 2 Week  

**Matrix**  

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<td>Flame Atomic Absorption</td>
<td>0.006% (80 ppm)</td>
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<td></td>
<td>SW846-6010B or C</td>
<td>ICP-OES</td>
<td>0.0004% (4 ppm)</td>
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<td>Flame Atomic Absorption</td>
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<td>NIOSH 7105</td>
<td>Graphite Furnace AA</td>
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<td>NIOSH 7300M/NIOSH 7303</td>
<td>ICP-OES</td>
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<td>10 µg/wipe</td>
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<td>ICP-OES</td>
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**Name of Sampler**:  
**Signature of Sampler**:  
**Client Sample #s**:  
**Total # of Samples**: 3  
**Sample #**  
**Location**  
**Volume/Area**  
**Date/Time Shipped**

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<tr>
<th>Sample #</th>
<th>Location</th>
<th>Volume/Area</th>
<th>Date/Time Shipped</th>
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**Relinquished (Client)**:  
**Date**:  
**Time**: 10:20 |

**Received (Lab)**:  
**Date**:  
**Time**: 10:20 |
LEAD (Pb) CHAIN OF CUSTODY  
EMSL ORDER ID (Lab Use Only):  

OrderID: 391913581  

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

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Comments/Special Instructions:

Page 2 of 2 pages