



100 NW Business Park Lane  
Riverside, MO 64150  
Telephone: 816.231.5580  
Fax: 816.231.5641  
www.occutec.com

March 27, 2019

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

**RE: Goodfellow Federal Center – Bldg. # 101 Drinking Water Sampling  
Project # 918004.002**

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, OCCU-TEC conducted drinking water sampling and testing for the presence of lead and copper at Building #101 of the Goodfellow Federal Center located at 4300 Goodfellow Federal Center in St. Louis, Missouri. Sampling was completed in response to the ongoing environmental condition assessment at the Goodfellow Federal Center complex which is documented at the Goodfellow Federal Center Reading Room located at <https://www.gsa.gov/portal/content/212361>.

Drinking water sampling was conducted to determine the current levels of lead and copper in representative sources throughout the complex. Drinking water sampling at Bldg. #101 was conducted on February 28, 2019 by Mr. Austin O'byrne of OCCU-TEC.

**METHODOLOGY**

The sampling methodology used during this investigation was developed in general accordance with the United States Environmental Protection Agency's (EPA) "Quick Guide to Drinking Water Sample Collection – Second Edition" developed by the EPA Region 8 in September 2016.

Samples were collected as first draw samples in accordance with the Lead and Copper Rule (40 CFR Part 141 Subpart I). First draw samples represent ‘worst case’ conditions with water that has been stationary within the plumbing systems for a minimum of six hours. The samples were collected in individually labeled 1000 milliliter (mL) plastic bottles capped with Teflon septa lined screw caps. The bottles were filled to the shoulder with water from the sample source. The samples were then placed in a cooler for safe transport. Each sample was acidified at the laboratory as needed.

Drinking water sampling for the presence of lead and copper was conducted at thirteen (13) distinct locations within Building #101. A total of fourteen (14) samples were obtained. After each drinking water sample was collected, OCCU-TEC filled a separate sample cup with approximately 2 inches of water. OCCU-TEC placed an Oakton model PHTester30 pH meter into the sample cup. After readings stabilized, OCCU-TEC recorded the readings for pH (the acidity or basicity of an aqueous solution) and the temperature (in degrees Celsius) on site specific sample logs.

Drinking water samples were submitted to Eurofins-Eaton Analytical in South Bend, IN for analyses of lead and copper. Eurofins-Eaton Analytical is certified by the State of Missouri Department of Natural Resources (MDNR) as an approved drinking water laboratory. Eurofins-Eaton Analytical’s Missouri Certification number is 880.

The drinking water samples were collected using media supplied by Eurofins-Eaton Analytical. Lead and Copper samples were collected and analyzed in accordance with EPA Method 200.8.

## **RESULTS AND DISCUSSION**

The results for the subject testing are summarized in the tables below.

### Water Sample Summary

| Analysis | Lowest Concentration | Highest Concentration | Action Level* |
|----------|----------------------|-----------------------|---------------|
| Lead     | 0.0013 mg/L          | 0.01 mg/L             | 0.015 mg/L    |
| Copper   | 0.068 mg/L           | 0.39 mg/L             | 1.3 mg/L      |

Samples with a “<” sign indicate that the results were below the reportable limit.

\*As per EPA Lead and Copper Rule (40 CFR Part 141 Subpart I)

Specific water sample locations are indicated in Appendix A. A summary table of all sampling results by location is included in Appendix B. The complete laboratory report for the drinking water sampling from Eurofins-Eaton Analytical is attached in Appendix C.

## *LEAD*

All samples were below the Action Level (AL) for lead.

## *COPPER*

All samples were below the AL for copper.

## *PH*

Normal pH levels for drinking water are between 6.0 to 8.5. Water with a pH < 6.5 is considered acidic, soft, and corrosive. Acidic water may contain metal ions, may cause premature damage to metal piping, and increases the likelihood of leaching. Water with a pH > 8.5 is considered alkaline or basic and can indicate that the water is hard. Hard water does not pose a health risk but can cause aesthetic problems. These problems include an alkali taste, the formation of scale deposits, and difficulty in getting soaps and detergents to lather.

Recorded pH levels in Building #101 ranged from 9.12 to 9.98 indicating the drinking water is slightly alkaline.

## **LIMITATIONS**

The scope of this assessment was limited in nature. OCCU-TEC collected samples from a select number of drinking water sources in an effort to minimize cost while providing a general overview of the drinking water quality at the site. Sample locations do not encompass every drinking water source at the Site. Additionally, samples were only analyzed for a select number of potential contaminants likely to affect the drinking water quality at the site. OCCU-TEC is not responsible for potential contaminants not identified in this report.

This report was prepared for the sole use of GSA. Reliance by any party other than GSA is expressly forbidden without OCCU-TEC's written permission. Any parties relying on the report, with OCCU-TEC's written permission, are bound by the terms and conditions outlined in the original proposal as if said proposal was prepared for them.

OCCU-TEC appreciates the opportunity to work with the General Services Administration 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)

Jeff T. Smith  
Senior Project Manager

(b) (6)

Kevin Heriford  
Operations Manager (QA/QC)

**ATTACHMENTS**

Appendix A, Water Sample Location Diagrams  
Appendix B, Results Summary by Location  
Appendix C, Water Sample Laboratory Report



**Appendix A**  
**Water Sample Location Diagrams**



**Figure 1: First Floor—DW Sample Locations**

**Site:** Goodfellow Federal Complex—Building 101  
4300 Goodfellow Boulevard, St. Louis, MO

Project Number: 918004

Date: 3/22/2019

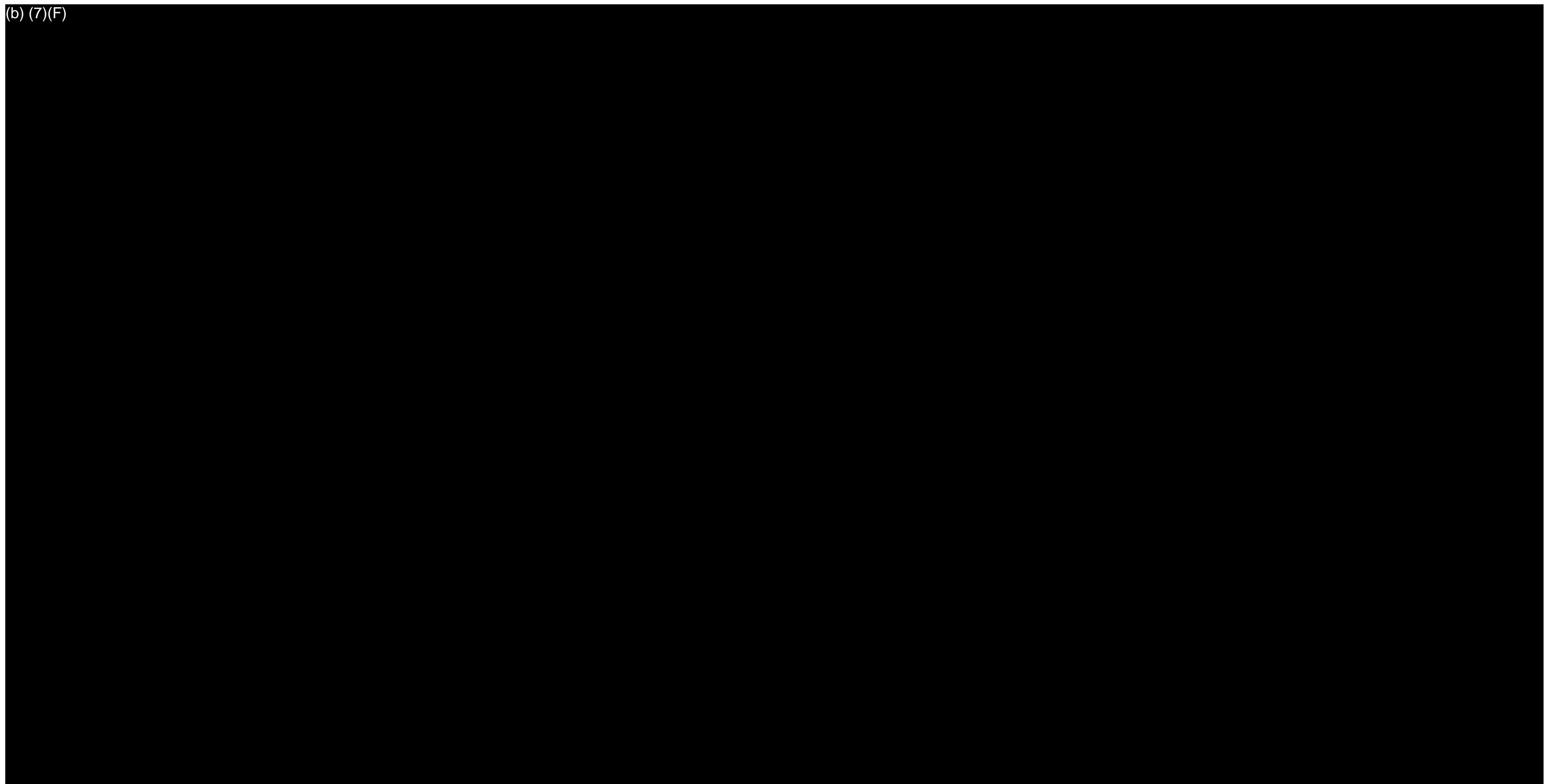


**Figure 2: Second Floor—DW Sample Locations**

**Site:** Goodfellow Federal Complex—Building 101  
4300 Goodfellow Boulevard, St. Louis, MO

Project Number: 918004

Date: 3/22/2019



**Figure 3: Basement 1—DW Sample Locations**  
**Site:** Goodfellow Federal Complex—Building 101  
4300 Goodfellow Boulevard, St. Louis, MO

Project Number: 918004  
Date: 3/22/2019



**Appendix B**  
**Results Summary by Location**

**Goodfellow Federal Center - Building 101**

| Sample Number  | Location   | Water Source      | Temperature | pH   | Analyte | Result  | Units | Above/Below | AL    |
|----------------|--|-------------------|-------------|------|---------|---------|-------|-------------|-------|
| GFC-101-01     | 2nd Floor Hallway - outside Rm # 232                   | Drinking Fountain | 13.6        | 9.98 | Copper  | 0.39    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0035  | mg/L  | Below AL    | 0.015 |
| GFC-101-02     | 2nd Floor Hallway - outside Rm # 234                   | Drinking Fountain | 14.8        | 9.87 | Copper  | 0.16    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0069  | mg/L  | Below AL    | 0.015 |
| GFC-101-02 dup | 2nd Floor Hallway - outside Rm # 234<br>(duplicate)    | Drinking Fountain |             |      | Copper  | 0.17    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0061  | mg/L  | Below AL    | 0.015 |
| GFC-101-03     | 2nd Floor - Elevator Lobby - Upper Left                | Drinking Fountain | 14.6        | 9.53 | Copper  | 0.082   | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0021  | mg/L  | Below AL    | 0.015 |
| GFC-101-04     | 2nd Floor Hallway - outside Rm # 204                   | Drinking Fountain | 15.3        | 9.12 | Copper  | 0.33    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0013  | mg/L  | Below AL    | 0.015 |
| GFC-101-05     | 2nd Floor Hallway - outside Rm # 210 - Lower<br>Right  | Drinking Fountain | 15.2        | 9.35 | Copper  | 0.16    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0022  | mg/L  | Below AL    | 0.015 |
| GFC-101-06     | 1st Floor - Hallway - outside Rm #110 - Upper<br>Left  | Drinking Fountain | 15.9        | 9.31 | Copper  | 0.19    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | < 0.001 | mg/L  | Below AL    | 0.015 |
| GFC-101-07     | 1st Floor - Elevator Lobby - Lower Right               | Drinking Fountain | 16.0        | 9.53 | Copper  | 0.12    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0021  | mg/L  | Below AL    | 0.015 |
| GFC-101-08     | Lower Level - South Hallway - Upper Left               | Drinking Fountain | 14.8        | 9.68 | Copper  | 0.38    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.01    | mg/L  | Below AL    | 0.015 |
| GFC-101-09     | 2nd Floor - Elevator Lobby - Lower Right               | Drinking Fountain | 15.2        | 9.67 | Copper  | 0.068   | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0019  | mg/L  | Below AL    | 0.015 |
| GFC-101-10     | 2nd Floor Hallway - outside Rm # 210 - Upper<br>Left   | Drinking Fountain | 15.4        | 9.11 | Copper  | 0.16    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0021  | mg/L  | Below AL    | 0.015 |
| GFC-101-11     | 1st Floor - Hallway - outside Rm #110 - Lower<br>Right | Drinking Fountain | 15.3        | 9.22 | Copper  | 0.15    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | < 0.001 | mg/L  | Below AL    | 0.015 |
| GFC-101-12     | 1st Floor - Elevator Lobby - Upper Left                | Drinking Fountain | 15.3        | 9.25 | Copper  | 0.095   | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0023  | mg/L  | Below AL    | 0.015 |
| GFC-101-13     | Lower Level - South Hallway - Lower Right              | Drinking Fountain | 14.1        | 9.65 | Copper  | 0.29    | mg/L  | Below AL    | 1.3   |
|                |  |                   |             |      | Lead    | 0.0086  | mg/L  | Below AL    | 0.015 |

Highlight indicates results at or above the Action Level (AL)

**Appendix C**  
**Water Sample Laboratory Report**

## LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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## STATE CERTIFICATION LIST

| State                   | Certification | State                | Certification   |
|-------------------------|---------------|----------------------|-----------------|
| Alabama                 | 40700         | Missouri             | 880             |
| Alaska                  | IN00035       | Montana              | CERT0026        |
| Arizona                 | AZ0432        | Nebraska             | NE-OS-05-04     |
| Arkansas                | IN00035       | Nevada               | IN00035         |
| California              | 2920          | New Hampshire*       | 2124            |
| Colorado                | IN035         | New Jersey*          | IN598           |
| Colorado Radiochemistry | IN035         | New Mexico           | IN00035         |
| Connecticut             | PH-0132       | New York*            | 11398           |
| Delaware                | IN035         | North Carolina       | 18700           |
| Florida*                | E87775        | North Dakota         | R-035           |
| Georgia                 | 929           | Ohio                 | 87775           |
| Hawaii                  | IN035         | Oklahoma             | D9508           |
| Idaho                   | IN00035       | Oregon (Primary AB)* | 4074-001        |
| Illinois*               | 200001        | Pennsylvania*        | 68-00466        |
| Illinois Microbiology   | 17767         | Puerto Rico          | IN00035         |
| Illinois Radiochemistry | IN00035       | Rhode Island         | LAO00343        |
| Indiana Chemistry       | C-71-01       | South Carolina       | 95005           |
| Indiana Microbiology    | M-76-07       | South Dakota         | IN00035         |
| Iowa                    | 098           | Tennessee            | TN02973         |
| Kansas*                 | E-10233       | Texas*               | T104704187-15-8 |
| Kentucky                | 90056         | Texas/TCEQ           | TX207           |
| Louisiana*              | LA180008      | Utah*                | IN00035         |
| Maine                   | IN00035       | Vermont              | VT-8775         |
| Maryland                | 209           | Virginia*            | 460275          |
| Massachusetts           | M-IN035       | Washington           | C837            |
| Michigan                | 9926          | West Virginia        | 9927 C          |
| Minnesota*              | 018-999-338   | Wisconsin            | 999766900       |
| Mississippi             | IN035         | Wyoming              | IN035           |
| EPA                     | IN00035       |                      |                 |

\*NELAP/TNI Recognized Accreditation Bodies

110 South Hill Street  
 South Bend, IN 46617  
 Tel: (574) 233-4777  
 Fax: (574) 233-8207  
 1 800 332 4345

## Laboratory Report

Client: OCCU-TEC Inc.

Report:

445046

Attn: Kevin Heriford  
 100 NW Business Park Lane  
 Riverside, MO 64150

Priority:

Standard Written

Status:

Final

PWS ID:

Not Supplied

| Sample Information |                |        |                       |               |                      |
|--------------------|----------------|--------|-----------------------|---------------|----------------------|
| EEA ID #           | Client ID      | Method | Collected Date / Time | Collected By: | Received Date / Time |
| 4216156            | GFC-101-01     | 200.8  | 02/28/19 12:03        | Client        | 03/05/19 09:00       |
| 4216157            | GFC-101-02     | 200.8  | 02/28/19 12:08        | Client        | 03/05/19 09:00       |
| 4216158            | GFC-101-02 DUP | 200.8  | 02/28/19 12:08        | Client        | 03/05/19 09:00       |
| 4216159            | GFC-101-03     | 200.8  | 02/28/19 12:14        | Client        | 03/05/19 09:00       |
| 4216160            | GFC-101-04     | 200.8  | 02/28/19 12:17        | Client        | 03/05/19 09:00       |
| 4216161            | GFC-101-05     | 200.8  | 02/28/19 12:18        | Client        | 03/05/19 09:00       |
| 4216162            | GFC-101-06     | 200.8  | 02/28/19 12:22        | Client        | 03/05/19 09:00       |
| 4216163            | GFC-101-07     | 200.8  | 02/28/19 12:25        | Client        | 03/05/19 09:00       |
| 4216164            | GFC-101-08     | 200.8  | 02/28/19 12:28        | Client        | 03/05/19 09:00       |
| 4216165            | GFC-101-09     | 200.8  | 02/28/19 12:35        | Client        | 03/05/19 09:00       |
| 4216166            | GFC-101-10     | 200.8  | 02/28/19 12:37        | Client        | 03/05/19 09:00       |
| 4216167            | GFC-101-11     | 200.8  | 02/28/19 12:40        | Client        | 03/05/19 09:00       |
| 4216168            | GFC-101-12     | 200.8  | 02/28/19 12:42        | Client        | 03/05/19 09:00       |
| 4216169            | GFC-101-13     | 200.8  | 02/28/19 12:45        | Client        | 03/05/19 09:00       |

### Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Kelly Blackburn at (574) 233-4777.

*Note: This report may not be reproduced, except in full, without written approval from EEA.*

(b) (6)

ASM

Authorized Signature

Title

03/18/2019

Date

Client Name: OCCU-TEC Inc.

Report #: 445046

Sampling Point: GFC-101-01

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |            |       |                  |                |          |
|-----------------|---------|--------|-----------|------|------------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result     | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | <b>390</b> | ug/L  | ---              | 03/14/19 13:55 | 4216156  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | <b>3.5</b> | ug/L  | ---              | 03/14/19 13:55 | 4216156  |

Sampling Point: GFC-101-02

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |            |       |                  |                |          |
|-----------------|---------|--------|-----------|------|------------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result     | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | <b>160</b> | ug/L  | ---              | 03/14/19 13:56 | 4216157  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | <b>6.9</b> | ug/L  | ---              | 03/14/19 13:56 | 4216157  |

Sampling Point: GFC-101-02 DUP

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |            |       |                  |                |          |
|-----------------|---------|--------|-----------|------|------------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result     | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | <b>170</b> | ug/L  | ---              | 03/14/19 14:01 | 4216158  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | <b>6.1</b> | ug/L  | ---              | 03/14/19 14:01 | 4216158  |

Sampling Point: GFC-101-03

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |            |       |                  |                |          |
|-----------------|---------|--------|-----------|------|------------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result     | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | <b>82</b>  | ug/L  | ---              | 03/14/19 14:02 | 4216159  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | <b>2.1</b> | ug/L  | ---              | 03/14/19 14:02 | 4216159  |

Sampling Point: GFC-101-04

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |            |       |                  |                |          |
|-----------------|---------|--------|-----------|------|------------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result     | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | <b>330</b> | ug/L  | ---              | 03/14/19 14:04 | 4216160  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | <b>1.3</b> | ug/L  | ---              | 03/14/19 14:04 | 4216160  |

Sampling Point: GFC-101-05

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 160    | ug/L  | ---              | 03/14/19 14:05 | 4216161  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | 2.2    | ug/L  | ---              | 03/14/19 14:05 | 4216161  |

Sampling Point: GFC-101-06

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 190    | ug/L  | ---              | 03/14/19 14:07 | 4216162  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | < 1.0  | ug/L  | ---              | 03/14/19 14:07 | 4216162  |

Sampling Point: GFC-101-07

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 120    | ug/L  | ---              | 03/14/19 14:09 | 4216163  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | 2.1    | ug/L  | ---              | 03/14/19 14:09 | 4216163  |

Sampling Point: GFC-101-08

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 380    | ug/L  | ---              | 03/14/19 14:10 | 4216164  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | 10     | ug/L  | ---              | 03/14/19 14:10 | 4216164  |

Sampling Point: GFC-101-09

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 68     | ug/L  | ---              | 03/14/19 14:12 | 4216165  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | 1.9    | ug/L  | ---              | 03/14/19 14:12 | 4216165  |



Sampling Point: GFC-101-10

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 160    | ug/L  | ---              | 03/14/19 14:36 | 4216166  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | 2.1    | ug/L  | ---              | 03/14/19 14:36 | 4216166  |

Sampling Point: GFC-101-11

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 150    | ug/L  | ---              | 03/14/19 14:41 | 4216167  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | < 1.0  | ug/L  | ---              | 03/14/19 14:41 | 4216167  |

Sampling Point: GFC-101-12

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 95     | ug/L  | ---              | 03/14/19 14:43 | 4216168  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | 2.3    | ug/L  | ---              | 03/14/19 14:43 | 4216168  |

Sampling Point: GFC-101-13

PWS ID: Not Supplied

| Lead and Copper |         |        |           |      |        |       |                  |                |          |
|-----------------|---------|--------|-----------|------|--------|-------|------------------|----------------|----------|
| Analyte ID #    | Analyte | Method | Reg Limit | MRL† | Result | Units | Preparation Date | Analyzed       | EEA ID # |
| 7440-50-8       | Copper  | 200.8  | 1300 !    | 1.0  | 290    | ug/L  | ---              | 03/14/19 14:44 | 4216169  |
| 7439-92-1       | Lead    | 200.8  | 15 !      | 1.0  | 8.6    | ug/L  | ---              | 03/14/19 14:44 | 4216169  |

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

|                 |     |      |    |
|-----------------|-----|------|----|
| Reg Limit Type: | MCL | SMCL | AL |
| Symbol:         | *   | ^    | !  |

## Lab Definitions

**Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC)** - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

**Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS)** - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

**Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB)** - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

**Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD)** - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

**Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM)** - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

**Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV)** - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

**Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS)** - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

**Surrogate Standard (SS) / Surrogate Analyte (SUR)** - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.



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### CHAIN OF CUSTODY RECORD

Page 1 of 1

| LAB Number | SAMPLER (Signature) | COMPLIANCE MONITORING | SAMPLING SITE |                | TEST NAME     | STATE (sample origin) | PROJECT NAME | PO#    | # OF CONTAINERS | MATRIX CODE | TURNAROUND TIME |
|------------|---------------------|-----------------------|---------------|----------------|---------------|-----------------------|--------------|--------|-----------------|-------------|-----------------|
|            |                     |                       | Yes           | No             |               |                       |              |        |                 |             |                 |
| 1          | 4126                | 156                   | X             | GFC-101-01     | Lead + Copper | MO                    | Goodfellow   | 918004 | 1               | DW SW       |                 |
| 2          | 157                 | 157                   | X             | GFC-101-02     | Lead + Copper | MO                    | Federal      | 002011 | 1               | DW SW       |                 |
| 3          | 158                 | 158                   | X             | GFC-101-02 Dup | Lead + Copper | MO                    | Center       |        | 1               | DW SW       |                 |
| 4          | 159                 | 159                   | X             | GFC-101-03     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 5          | 160                 | 160                   | X             | GFC-101-04     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 6          | 161                 | 161                   | X             | GFC-101-05     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 7          | 162                 | 162                   | X             | GFC-101-06     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 8          | 163                 | 163                   | X             | GFC-101-07     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 9          | 164                 | 164                   | X             | GFC-101-08     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 10         | 165                 | 165                   | X             | GFC-101-09     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 11         | 166                 | 166                   | X             | GFC-101-10     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 12         | 167                 | 167                   | X             | GFC-101-11     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 13         | 168                 | 168                   | X             | GFC-101-12     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |
| 14         | 169                 | 169                   | X             | GFC-101-13     | Lead + Copper | MO                    |              |        | 1               | DW SW       |                 |

| RELINQUISHED BY: (Signature) | DATE    | TIME  | RECEIVED BY: (Signature) | DATE   | TIME | LAB COMMENTS   |
|------------------------------|---------|-------|--------------------------|--------|------|--|
|                              | 2-28-19 | 12:24 |                          |        |      |  |
|                              |         |       |                          |        |      |  |
|                              |         |       |                          | 3-5-19 | 0900 | CONDITIONS UPON RECEIPT (check one):<br>load: Wet/Blue <input checked="" type="checkbox"/> Ambient <input type="checkbox"/> °C Upon Receipt <input type="checkbox"/> N/A |

**MATRIX CODES:**  
 DW-DRINKING WATER  
 RW-REAGENT WATER  
 GW-GROUND WATER  
 EW-EXPOSURE WATER  
 SW-SURFACE WATER  
 PW-POOL WATER  
 WW-WASTE WATER

**TURN-AROUND TIME (TAT) - SURCHARGES**  
 SW = Standard Written: (15 working days) 0%  
 RV = Rush Written: (5 working days) 50%  
 RW = Rush Written: (5 working days) 75%  
 \* Please call, expedited service not available for all testing

**IV\* = Immediate Verbal: (3 working days) 100%**  
**IW\* = Immediate Written: (3 working days) 125%**  
**SF\* = Weekend, Holiday CALL**  
**STAT\* = Less than 48 hours CALL**

Sample analysis will be provided according to the standard EEA Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agreed to in writing by EEA.

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