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Mold Assessment
and Remediation

February 10, 2022

Health/Safety and
Environmental
Regulatory
Compliance

Mr. Dave Miller
Supervisor of Buildings and Grounds
Green Township Board of Education
P.O. Box 14
Greendell, NJ 07839

Right-To-Know

re: **Drinking Water Sampling for Copper: Follow-Up Sampling**

OSHA/EPA/DOT
Training Programs

Dear Mr. Miller,

Asbestos and Lead
Management

Compliance sampling for Lead in Drinking Water was conducted on August 20, 2021 and all samples had acceptable results. Although it is not a compliance issue, samples were also analyzed for Copper. There were two (2) water samples where the measured levels of Copper were slightly higher than expected. This report covers the follow-up water sampling for Copper that was conducted on October 27, 2021.

Industrial Hygiene/
OSHA Compliance

Both water samples from the bottle filling station next to Room 409 showed lower levels of Copper, below the 1.3 mg/L Action Level while both samples from the Nurse's Office sink continue to show higher levels of Copper.

Indoor Air Quality

Underground/
Aboveground
Storage Tanks

It is recommended that either the fixture on the sink be replaced or bottled water be utilized in the Nurse's Office for drinking. The sink could then be re-purposed for hand washing only with appropriate signage placed there.

Environmental
Site Assessment

If you have any questions, please don't hesitate to call us.

Hazardous/
Medical Waste
Management

Sincerely,

Patrick D. McGuinness, MS, P.E.
Vice President

Environmental
Audits

Attachment

(file ... \Proposal\WaterTest\Green-211Addendum1)

Expert Witness/
Litigation Support

Customized
Software

Addendum #1 to Sampling Report - Copper in Drinking Water
Green Township Board of Education

1. Background and Sampling Summary

During compliance sampling for Lead in Drinking Water, a total of 19 water samples were collected on August 20, 2021. Samples showed acceptable results for Lead and were all below the current 0.015 mg/l (15 ppb) Standard.

Samples were also analyzed for Copper. There were two (2) locations where the measured levels of Copper exceeded a related standard for Copper in Drinking Water. This report covers the follow-up sampling for Copper that was conducted on October 27, 2021 at those two locations.

It is important to note that related standard for Copper of 1.3 mg/L applies only to public water systems in New Jersey. As such, this is not a compliance issue for the School District and the re-sampling was conducted for information purposes.

Two types of samples were collected at each location during the follow-up sampling. As before, a “First-Draw” sample was collected. That was followed by a “Flushed” water sample that was collected after running the water tap for about 2-3 minutes. The purpose of this is to demonstrate whether periodic line flushing can lower the Copper levels at the drinking water taps.

The current sampling results from the bottle filling station next to Room 409 showed lower levels of Copper and both samples were below the 1.3 mg/L Action Level. This drinking water outlet can be safely returned to service.

On the other hand, both 1st draw and flushed samples collected from the Nurse’s Office sink continue to show higher levels of Copper. Unlike the sample from the bottle filling station, the line flushing had no effect on the levels of Copper in the water. It is recommended that the sink fixture be replaced or that an alternate source of drinking water such as bottled water be utilized in the Nurse’s Office. The sink can then be used for hand washing. A sign indicating “Hand Washing Only” should also be placed there.

2. Water Sampling Results and Discussion

Laboratory analysis of the initial water samples collected in August was performed for both Lead and Copper since both could be sourced from the building plumbing and both are indicators of system corrosion.

As follow-up to the initial water sampling, a total of four (4) water samples were collected on October 27, 2021. The re-sampling protocol included the collection of two water samples from each tap location.

A “First-Draw Water” sample was collected as before. This is where the sample was collected at each outlet after the water was allowed to sit overnight in the piping at least 8 hours but no more than 18 hours. It was then followed by a “Flushed Water” sample after the water tap ran for

about 2-3 minutes. The purpose of this is to demonstrate whether a periodic line flushing can lower the Copper levels.

All results are shown in terms of milligrams of Copper per liter of water (mg/L). Laboratory results can be compared with the current Action Level for drinking water is 1.3 mg/L. It is important to note that this Action Level for Copper does not apply in schools like the Green Hills School that are connected to a public water system.

However, comparing the water sampling results to this Action Level is considered prudent since it is the only published health-based standard available for Copper. In that context, the Action Level for Copper being applied here is considered to be advisory.

It is also important to understand some other differences between the relatively new NJ Department of Education requirements for periodic testing Drinking Water for Lead in schools and the basis for Lead/Copper sampling required for public water systems in New Jersey.

While schools must meet the NJ Dept. of Education standards for Lead at the 100th percentile, public water systems must meet Lead and Copper action levels at the 90th percentile. For practical reasons, when public water systems periodically test their system, only a small fraction of the total system users is ever sampled. On the other hand, schools are required to periodically test every drinking water outlet.

All samples were collected in 250 ml contaminant-free containers. Laboratory analysis of the water samples was performed by Pace Analytical Services, LLC of Melville, NY (NJ DEP Certification Nos. NY158). The analytical method is per EPA Method 200.8 via atomic absorption, induction coupled plasma technique.

Sampling results shown in **Table 1** below include those from the respective sample in August compared with the current ones. The sampling logs are appended to this report and results are expressed as milligrams of Copper per liter of water (mg/L).

Table 1: Drinking Water Re-Sampling for Copper

| <u>Sample Location</u> | <u>Outlet Type</u> | <u>Sample Type</u> | <u>Sample Date</u> | <u>Copper Results (mg/L)</u> |
|---------------------------|--------------------|--------------------|--------------------|------------------------------|
| Nurse's Office | Sink | 1 st | Aug 20, 2021 | 1.54 |
| Nurse's Office | Sink | 1 st | Oct 27, 2021 | 2.24 |
| Nurse's Office | Sink | Flushed | Oct 27, 2021 | 2.41 |
| Hallway, next to Room 409 | Bottle Filler | 1 st | Aug 20, 2021 | 2.03 |
| Hallway, next to Room 409 | Bottle Filler | 1 st | Oct 27, 2021 | 1.21 |
| Hallway, next to Room 409 | Bottle Filler | Flushed | Oct 27, 2021 | 0.14 |

3. Conclusions and Recommendations

Water sampling results from the Bottle filling station by Room 409 that showed lower and acceptable results for Copper when compared with the current Action Level for public water supply systems in New Jersey. The unit can be returned to unrestricted service.

It is known that flushing water through drinking water taps will reduce the levels of Lead present but the sample collected from the Nurse's Office sink do not show the same for measured Copper Levels. Since this water tap is located in the original section of the building it is likely to be about 60 years old. As such, it should be considered for replacement or re-purposing.

If the water tap is to be replaced, it would need to be re-tested for Lead prior to being put into service. Again, since it is not a compliance issue, re-sampling for Copper would be for information purposes only.

Alternately, the sink could remain in use and be used for hand washing only. An alternate source of drinking water such as bottled water would be used for drinking water.

Report prepared by:



Patrick D. McGuinness, MS, P.E.
Vice President

