

South Butler Area School District – Water Testing Program

Results Summary

- A total of 268 fixtures were sampled and analyzed for lead and copper levels. The fixtures were selected due to their use as sources of drinking water for the students, faculty and staff or for food preparation.
- Any fixture with a sample result within 50% of the respective lead or copper action levels was examined, the strainer cleaned of debris and the piping leading to the fixture was flushed to pull fresh water into the area. Replacement of the affected fixtures was also implemented as needed.
- Resampling was conducted on the sites within 50% or greater of the PA DEP's lead and / or copper action level.
- Additional sampling events were required to determine the cause of the elevated results and to remedy the situation.
- Seven locations of the 268 sampled have not yet been cleared to return to service due to levels higher than the 50% action level criteria. These fixtures will remain out of service until the cause(s) of the action level criteria exceedance has been determined and rectified.

Background/ Project Summary

In order to be proactive the South Butler Area School District School Board retained Gannett Fleming, Inc. to develop and implement a sampling program to determine the amount of lead present at the drinking water fixtures in the district's facilities.

Gannett Fleming, in conjunction with district staff, identified plumbing fixtures in each school that were used for drinking water or in the preparation of food. Water from each of the identified fixtures was sampled and analyzed for lead and copper content by a laboratory certified by the Pennsylvania Department of Environmental Protection.

The initial sampling at the schools was conducted on May 26, 2017. The sampling protocol consisted of the district's maintenance staff flushing each of the fixtures for a few minutes to assure that the fixture had not been stagnant for an extended period of time and leaving that fixture out of service not used overnight. This procedure assured that each fixture had a stagnation period of at least 6 hours prior to the sampling event.

The sampling procedures for the first round of testing consisted of collecting a one liter first draw sample at each fixture and delivering the samples to the lab for analysis. The results of the sampling were examined to identify any fixture that either exceeded the lead action level of 0.015 mg/L or the copper action level of 1.3 mg/L or were within 50% of either of the respective action levels. Fixtures that met any of those criteria were removed from service and were resampled to determine the cause and the extent of the exceedances. Although there is no health impact of consuming water containing copper in excess of the action level, testing for copper was done to determine the corrosivity of the water in the facilities.

Follow-up sampling procedures for those sites identified as being over the 50% action level criteria were modified slightly to include the collection of a 250 mL first draw sample immediately followed by collection of a one liter "second draw" sample. The reason for this change was to help to determine the cause of the exceedance. The 250 mL sample characterizes the lead and copper contribution of the fixture itself. The one liter second draw sample characterizes the lead and copper contribution from the piping leading to the fixture.

Remedial measures were taken on those taps exceeding the 50% action level criteria. These measures included flushing water through the supply piping of areas with elevated results, cleaning debris from the faucet strainers in areas with exceedances and replacement of fixtures at the sites with elevated results.

Also, those fixtures showing elevated lead or copper levels in the follow-up sampling underwent subsequent testing to determine the cause(s) of the exceedance.

Samples that had tested below 50% of the lead or copper action level were returned to service. Those fixtures that remained over the 50% criteria were not returned to service.

A summary of the sampling done at each school is presented below.

South Butler Area High School / Middle School Results

Eighty-six samples were collected from fixtures in the High School / Middle School on May 26, 2017. Nineteen of the samples exceeded the lead and / or copper action level or were within 50% of one or both of the action levels. The 67 sites which showed results of less than the 50% action level criteria were returned to service.

Resampling of the fixtures above the 50% action level criteria was conducted on July 12, 2017 and that sampling event showed that 11 of the 19 sites were now under the 50% action level criteria. This was accomplished through the actions of the school staff flushing water through the supply piping of areas with elevated results, cleaning debris from the strainers of the fixtures and replacing the fixtures. The 11 sites cleared during the July 12 resampling event were returned to service.

The eight sites that remained over the acceptance criteria underwent follow-up sampling on August 16, 2017. The results of that sampling event showed that six of the eight sites now were in compliance with the acceptance criteria. Those sites were returned to service. The two remaining sites, Room 125 Teacher's Sink and the Locker Room Outside Tap, remain out of service while staff continues remedial activities to lower the amount of lead and copper present in the first draw sample water at those fixtures.

Follow-up testing of Room 125 Teacher's Sink will be conducted in the near future. It is recommended that the Locker Room Outside Tap fixture be removed from service and only used for its intended purpose – outside maintenance activities. This fixture should be valved off and the valve operator only be available to maintenance personnel.

South Butler Area Intermediate School Results

Sixty-three samples were collected from fixtures in the Intermediate School on May 26, 2017. Ten of the samples exceeded the lead and or copper action level or were within 50% of one or both of the action levels. The 53 sites which showed results of less than the 50% action level criteria were returned to service.

As mentioned, 10 sites from the Intermediate School were over the 50% action level criteria. There were also two sites that had not been sampled during the May 26th sampling event. Also, one of the 10 sites, the fountain outside Room 409, was removed and not replaced. Therefore, 11 sites were sampled during the July 12th sampling event. Sampling results from five of the 11 sites were less than the 50% action level criteria. This was accomplished through the actions of the school staff flushing water through the supply piping of areas with elevated results, cleaning debris from the strainers of the fixtures and replacing the fixtures. Those five sites were returned to service. Five of the remaining six sites underwent follow-up sampling on August 16, 2017. The sixth site, the Library Sink, was removed from service and not replaced. Results of that sampling showed that one of the five sites was less than the 50% action level criteria and was returned to service. The remaining four sites were again sampled on September 9, 2017. Results of that sampling are not yet available. These sites will not be returned to service until satisfactory test results are obtained.

The sites not yet cleared to be returned to service are Room 210 Sink, Room 210 Bubbler, Room 212 Sink, and Room 213 Bubbler. (Bubbler refers to the water fountain attachment associated with the sink. Sinks in the Intermediate and Primary School classrooms each have a faucet and bubbler style water fountain as part of the sink assembly.)

In order to clear the remaining four sites District staff have been flushing these fixtures on a daily basis. The purpose of the flushing is to minimize the water age in that area of the facility and to allow the corrosion inhibition chemical used by the water provider to provide the protective coating of the piping as it is intended to do. If this flushing is not sufficient to reduce the amount of lead and copper in the water, other remedial actions will be taken. These actions could include removing the fixtures from service, providing an alternate source of drinking water in the effected rooms and / or replacing the piping leading to the affected areas.

South Butler Area Primary School Results

One hundred and eleven samples were collected from fixtures in the Primary School on May 26, 2017. Nine of the samples exceeded the lead and or copper action level or were within 50% of one or both of the action levels. The 102 sites which showed results of less than the 50% action level criteria were returned to service.

Resampling of the nine fixtures above the 50% action level criteria was conducted on July 12, 2017 as well as four additional sites. These sites were added due to sample bottles which were broken in transit or that the sites were not identified as needing to be sampled during May 26th sampling event. Of those 13 sample sites, 11 had results less than the 50% action level criteria. This was accomplished through the actions of the school staff flushing water through the supply piping of areas with elevated results, cleaning debris from the strainers of the fixtures and replacing the fixtures. The 11 sites were returned to service.

Resampling of the two remaining sites was conducted on August 16, 2017 and one, Room 431 Sink was still over the 50% criteria. The other site, the Kitchen Prep Sink, was cleared during the August sampling event and has been returned to service. Follow-up sampling at the Room 431 Sink site will be conducted in the near future and will remain out of service until satisfactory results are obtained.

South Butler Area Stadium Concession Stand Results

Two samples were collected from fixtures at the concession stand during the May 26, 2017 sampling event. Both of these samples were under the 50% action level criteria and were returned to service.

Plan of Action

The School District Board will continue to monitor lead and copper levels in fixtures in the facilities on its campus. A formal sampling plan will be developed and implemented by the School Board that will define the frequency and location of the sampling activities on various sites in the facilities. The plan will include rotation of the sampling sites during each sampling event in order to assure that a representative cross section of fixtures are being tested on a regular basis.

Gannett Fleming will assist the District staff in developing and implementing this sampling plan.