



Salem Keizer School District Lead and Copper in Water Testing Project Summer Sampling Protocols

The following protocol was created using the guidance of the Environmental Protection Agency (EPA) document “3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance”. Although this document provides an action limit of 20 ppb for lead, the District has elected to utilize the more stringent action limit of 15 parts per billion (ppb) for lead to meet the public water supply action limit. Additionally, copper results will be compared to the action limit of 1.3 parts per million (ppm) as identified by the EPA regulation for copper in the Lead and Copper Rule. The purpose in creating these protocols is to replicate normal operating conditions which allows the District to follow EPA’s 3Ts guidance.

Outlets: Cold water outlets on the interior of the buildings, including drinking fountains, classroom sinks, kitchen food preparation sinks, student store sinks, concession stand sinks, and plumbed refrigerators and soda fountains with water dispensers, are being mapped by TRC, flushed by SKSD and sampled by TRC. Icemakers in particular are not being flushed however the ice from the icemakers is being sampled. Any outlets that are broken or not in use will be identified by TRC during the outlet mapping activities and labeled as such and are not to be flushed or sampled. Any outlets labeled as broken or not in use will be communicated to the District by TRC following the mapping activities. In the event the District plans to repair a particular outlet for use, in order to have it included in the flushing/sampling event, the District will inform TRC so that the outlet will be included on the paperwork for flushing and sampling.

Flushing: Prior to the start of flushing, TRC will have mapped each school noting each outlet to be flushed with the corresponding sample number along with a Drinking Water Sample Data Sheet & Chain of Custody Record. Flushing will occur at each of the cold water outlets described above, approximately 8 to 12 hours prior to the sampling event and the water will sit for a period of at least 8 hours but no more than 18 hours before the sampling by TRC occurs. During flushing, the water lines for the building will be purged by continually running all outlets to be sampled, starting with the outlets closest to the main, then proceeding to those outlets furthest from the main working outward toward those deemed furthest. During the flushing event, all outlets to be flushed/sampled except drinking fountains will be flushed for a minimum of 20 minutes in order to confirm that fresh water from the main is flowing through the outlets. Once all outlets, besides drinking fountains, are purged for the 20 minute minimum time period, each drinking fountain will be flushed for 1 minute (refrigerated and non-refrigerated). Refrigerated drinking fountains are flushed again, for a 15 minute time period, during the sampling event. As the flushing crew proceeds through the building to conduct the 1 minute drinking fountain flush, all other outlets in that path where water is continually running can be turned off as long as the 20 minute time period has elapsed for that particular outlet. The flush time per outlet will need to be noted on the Drinking Water Sample Data Sheet & Chain of Custody Record for each school. After flushing each outlet, signage is then posted on each outlet and the building is closed and locked in effort to keep it from being used until it can be sampled 8 to 18 hours later by TRC.

Sample Collection: Samples are collected using plastic, wide-mouthed and narrow-mouthed 250 mL preserved and unpreserved bottles. Those bottles that are unpreserved are being preserved by the associated laboratory after receipt per the analytical method. During sample collection, each bottle is marked with a school identification code followed by the sample number (Ex. 001-01A, 001-01B). Sampling at each cold water outlet is conducted 8 to 18 hours after flushing was completed, prior to being used. Water is sampled without touching the mouth of the container to the faucet. Two samples are being collected from each of the cold water outlets being tested. The first sample collected is the first draw sample (also called an A sample). The first draw sample is the first flow of water from the outlet into the bottle filling the bottle (leaving approximately one inch from the top for unpreserved samples). This first draw sample represents the water standing in the fixture that would initially be consumed. The flush sample (also called a B sample) is collected into a new sample bottle 30 seconds (or up to one minute) after the water has been allowed to continuously flow from the outlet, also filling the bottle approximately one inch from the top. The flush sample represents the water from the plumbing line behind the wall and outlet. As such, when sampling a refrigerated drinking fountain in particular,



the 30 second flush sample is collected after the water has run for 15 minutes to ensure no stagnant water is left in the storage unit and the flush sample is representative of water outside of the drinking fountain outlet.

Upon completion of a sampling event, the sample bottles are packaged and the associated Water Sample Data Sheet & Chain of Custody Record is signed and shipped or hand-delivered with the samples to the respective laboratory.

Laboratories, Analysis and Analytical Results: Due to number of samples being collected, multiple accredited laboratories in the State of Oregon are being utilized for this project. All laboratories for this project are performing analysis using the EPA Method 200.8 for analysis for lead and copper. Analytical results are provided in micrograms per liter ($\mu\text{g/L}$) or ppb for lead and milligrams per liter (mg/L) or ppm for copper.

Interpretation of Results: Upon receipt of the results from each laboratory, TRC is providing a summary spreadsheet of all results, per school, highlighting any results at or exceeding 15 ppb for lead and or 1.3 ppm for copper.