

**LEAD IN DRINKING WATER SAMPLING
WOODROW WILSON SCHOOL - #19
ELIZABETH, NEW JERSEY**

1.0 PROJECT BACKGROUND

There are three ways that lead can contaminate drinking water in school facilities, the water source, the plumbing material, or the actual drinking water outlet fixture. Most sources of drinking water (e.g. ground and surface water) have no lead, or very low levels of lead (i.e., under 5 micrograms per liter [$\mu\text{g/l}$] or parts per billion [ppb]). Once the drinking water leaves the public water supply system or treatment plant, it comes into contact with piping and plumbing materials that may contain lead. Some lead may get into the water from the distribution system – the network of pipes that carry the water to homes, businesses, and schools in the community. Some communities have lead components in their distribution systems, such as lead joints in cast iron mains, service connections, pigtails, and goosenecks. Even though a public water supplier may deliver water that meets all Federal and State public health standards for lead, there may be lead in the drinking water because of the plumbing in the school facility. Interior plumbing, soldered joints, leaded brass fittings, and various drinking water outlets that contain lead materials are the primary contributors of lead in drinking water. It is also important to note that brass plumbing components contain lead. Since 1986, all plumbing materials must be “lead free”. Although there is an increased probability that a given plumbing component installed prior to 1986 could contain more lead than the newer components, the occurrence of lead in drinking water cannot be predicted solely based upon the age of the component or the school facility. The current law allows plumbing materials up to 0.25 percent lead to be labeled as “lead free”. However, prior to January 4, 2014, “lead free” allowed up to 8 percent lead content of the wetted surfaces of plumbing products including those labeled National Sanitation Foundation (NSF) certified. The best way to determine if a school might have elevated levels of lead in its drinking water is by testing the drinking water in that school. Testing facilitates an evaluation of the plumbing materials and helps target appropriate remedial action. It is a key step in understanding the problem, if there is one, and designing an appropriate response.

2.0 SAMPLING/SCREENING METHODOLOGY

2.1 Purpose

Lead in a water sample taken from an outlet can originate from the outlet fixture (e.g. the faucet, bubbler etc.), plumbing upstream of the outlet fixture (e.g. pipe, joints, valves, fittings etc.), or it can already be in the water that is entering the facility. Sample results are then compared to assist in determining the sources of lead contamination and the appropriate corrective measures. Prior to sampling, Whitman ensured that outlets deviating from normal usage were flushed 8-48 hours prior to sampling.

Initial first draw samples are taken from drinking water outlets and food preparation outlets (e.g., bubblers, kitchen faucets) in the facility. These samples determine the lead content of water sitting in water outlets that are used for drinking or cooking within the building(s).

2.2 NJDEP Limits

If initial first draw test results reveal lead concentrations greater than 15 µg/l (ppb) in a 250 mL sample for a given outlet, follow-up flush testing is required to determine if the lead contamination results are from the fixture or from interior plumbing.

3.0 LEAD IN DRINKING WATER SAMPLING RESULTS DISCUSSION

The summary of lead sample results is presented below. Sampling conducted was in compliance with NJDEP protocol and all samples were submitted to Integrated Analytical Laboratories (NJDEP NELAP #14751) under a completed Chain of Custody Form.

Location	Sample ID #	Date	Time	Lead Result µg/L	Re-Sample ID #	Date	Time	Lead Result µg/L	NJDEP Lead Limit - µg/L
2 nd Floor Fountain Outside Room 26	S1	7/28/2021	7:58 am	4.20					15
2 nd Floor Water Fountain Outside Faculty Lounge	S2	7/28/2021	8:00 am	Non-Detect					15
2 nd Floor Faculty Lounge Sink	S3	7/28/2021	8:06 am	1.06					15
2 nd Floor Water Fountain Outside Room 24	S4	7/28/2021	8:09 am	Non-Detect					15
2 nd Floor Water Fountain Outside Room 21	S5	7/28/2021	8:10 am	2.64					15
1 st Floor Water Fountain Outside Room 16	S6	7/28/2021	8:13 am	3.33					15
1 st Floor Water Fountain Outside Room 110A	S7	7/28/2021	8:14 am	Non-Detect					15
1 st Floor Water Fountain Outside Main Office	S8	7/28/2021	8:20 am	Non-Detect					15
1 st Floor Water Fountain Outside Room 11	S9	7/28/2021	8:22 am	3.55					15

Location	Sample ID #	Date	Time	Lead Result µg/L	Re-Sample ID #	Date	Time	Lead Result µg/L	NJDEP Lead Limit - µg/L
Trailer #4	S10	7/28/2021	8:28 am	Non-Detect					15
Trailer #3	S11	7/28/2021	8:30 am	Non-Detect					15
Trailer #2	S12	7/28/2021	8:32 am	Non-Detect					15
Trailer #1	S13	7/28/2021	8:34 am	Non-Detect					15
Basement K1-A	S14	7/28/2021	8:36 am	1.35					15
Basement K1-B	S15	7/28/2021	8:42 am	Non-Detect					15
Sink K1-B	S16	7/28/2021	8:43 am	48.8	K1-1B	1/11/2022	7:00 am	2.13	15
Kitchen Sink K1-A	S17	7/28/2021	8:44 am	4.92					15
Sink K1-C	S18	7/28/2021	8:48 am	15.8	K1-1C	1/11/2022	7:05 am	5.31	15
Water Fountain Across from Room-03	S19	7/28/2021	8:50 am	Non-Detect					15
Water Fountain Outside Room 4	S20	7/28/2021	8:53 am	Non-Detect					15
Water Fountain Outside Bathroom G06A	S21	7/28/2021	8:55 am	Non-Detect					15
Kitchen Sink KC 04	S22	7/28/2021	8:58 am	Non-Detect					15
Kitchen Sink KC 03	S23	7/28/2021	9:00 am	Non-Detect					15
Kitchen Sink KC 02	S24	7/28/2021	9:01 am	1.27					15
Kitchen Sink KC 01	S25	7/28/2021	9:02 am	Non-Detect					15
Sink Nurse's Office	S26	7/28/2021	9:06 am	Non-Detect					15
Ice Machine Nurse's Office	S27	7/28/2021	9:07 am	Non-Detect					15

Location	Sample ID #	Date	Time	Lead Result µg/L	Re-Sample ID #	Date	Time	Lead Result µg/L	NJDEP Lead Limit - µg/L
Field Blank	NA	7/28/2021	NA	Non-Detect					15
Field Blank	NA	1/11/2022	NA	Non-Detect					15

4.0 **CONCLUSIONS**

All lead results were below the 15 µg/L New Jersey Action Level.

5.0 **LIMITATIONS, EXCEPTIONS AND ASSUMPTIONS**

Opinions and recommendations presented in this report apply to site conditions and features as they existed at the time of Whitman's site visit, and those reasonably foreseeable. They cannot necessarily apply to conditions and features of which Whitman is unaware and has not had the opportunity to evaluate.

The conclusions presented in this report are professional opinions based solely upon Whitman's visual observations of accessible areas, testing data, and current regulatory requirements. These conclusions are intended exclusively for the purpose state herein, at the sites indicated, and for the project indicated.

No expressed or implied representation or warranty is included or intended in our reports, except that our services were performed, within the limits prescribed by our client, with the customary thoroughness and competence of our profession.

Feel free to contact me at 732-390-5858 with any questions or if further clarification is needed.

Sincerely,



John Beaupre
Senior Vice President

Attachments