

**LEAD IN DRINKING WATER SAMPLING
WELCOME CENTER #80
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
Water Fountain Cafeteria	AK1	8/3/2021	7:00 am	50.3	WC-S6	1/13/2022	7:34 am	2.89	15
Water Fountain Cafeteria	AK2	8/3/2021	7:03 am	15.1	WC-S7	1/13/2022	7:38 am	4.26	15
Water Fountain Across from Room 207	A207	8/3/2021	7:08 am	2.58					15
Water Fountain Across from Room 214	A214	8/3/2021	7:10 am	28.3	WC-S5	1/13/2022	7:29 am	Non-Detect	15
Water Fountain Hallway	A131-B	8/3/2021	7:20 am	13.1					15
Water Fountain Boy's Room Hallway	H308-B	8/3/2021	7:22 am	21.8	WC-S11	1/13/2022	7:52 am	1.07	15
Water Fountain Boy's Room Hallway	H308-A	8/3/2021	7:22 am	3.47					15
Water Fountain Men's Room Hall	H321	8/3/2021	7:29 am	Non-Detect					15
Water Fountain Girl's Locker Room	H401	8/3/2021	7:33 am	6.61					15
Sink Cafeteria	HZ-1	8/3/2021	7:35 am	43.5	WC-S8	1/13/2022	7:41 am	6.88	15
Sink Cafeteria	HZ-2	8/3/2021	7:38 am	Non-Detect					15
Water Fountain Hallway	D-454-A	8/3/2021	7:40 am	2.06					15
Water Fountain Hallway	D-454-B	8/3/2021	7:42 am	7.62					15
Water Fountain Gym – East Exit	ESGYF	8/3/2021	7:45 am	9.94					15
Water Fountain Exit by East Wing C	ETGYC	8/3/2021	7:47 am	Non-Detect					15
Water Fountain Gym Exit	ES-GY-E	8/3/2021	7:49 am	1.66					15
Water Fountain Inside Gym	GH-409-B	8/3/2021	7:52 am	1.32					15

Location	Sample ID #	Date	Time	Lead Result µg/L	Re-Sample ID #	Date	Time	Lead Result µg/L	NJDEP Lead Limit - µg/L
Water Fountain Inside Gym	GY-409-A	8/3/2021	7:55 am	10.8					15
Water Fountain By Gym Exit	ET-GY-D	8/3/2021	7:58 am	1.90					15
Water Fountain Inside Gym	GY-410-C	8/3/2021	8:00 am	Non-Detect					15
Water Fountain Inside Girl's Locker Room	GY-410	8/3/2021	8:03 am	17.7	WC-S2	1/13/2022	7:02 am	3.88	15
Water Fountain Outside Gym	H-31-A	8/3/2021	8:05 am	15.5	S3	6/22/2022	8:30 am	Non-Detect	15
Water Fountain Boy's Locker Room	H-6-407	8/3/2021	8:07 am	8.87					15
Water Fountain Swimming Pool	SWA	8/3/2021	8:10 am	10.8					15
Water Fountain Pool	SWB	8/3/2021	8:12 am	2.57					15
Water Fountain Boy's Locker Room	SWB-413	8/3/2021	8:15 am	78.9	WC-S3	1/13/2022	7:06 am	2.75	15
Water Fountain Girl's Locker Room	SW-G414	8/3/2021	8:17 am	12.5					15
Water Fountain Next to Girl's Locker Room	GR-1-07A	8/3/2021	8:20 am	4.28					15
Water Fountain Next to Girl's Locker Room	GR-1-07B	8/3/2021	8:22 am	4.34					15
Water Fountain Outside Room 357	HZ-357-B	8/3/2021	8:25 am	11.2					15
Water Fountain Outside Room 372	HZ-EXM	8/3/2021	8:27 am	2.39					15
Water Fountain Outside Room 383	HZ-383	8/3/2021	8:45 am	15.9	WC-S10	1/13/2022	7:54 am	1.97	15
Water Fountain Girl's Room Hall	H317	8/3/2021	9:00 am	2.01					15
Girl's Bathroom	H-331-B	8/3/2021	9:03 am	8.08					15

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Water Fountain Boy's Room Hall	H-132-A	8/3/2021	9:05 am	5.99									15
Water Fountain Library Hall	M-279-A	8/3/2021	9:15 am	4.16									15
Water Fountain Library	M-279-B	8/3/2021	9:17 am	2.06									15
Water Fountain Outside Room 257	M-257-A	8/3/2021	9:25 am	3.57									15
Water Fountain Outside Room 257	M-257-B	8/3/2021	9:27 am	12.2									15
Water Fountain Outside Boy's Bathroom 124	M-258	8/3/2021	9:32 am	1.00									15
Water Fountain Outside Boy's Bathroom	M-408-B	8/3/2021	9:37 am	16.4	WC-S1	1/13/2022	6:59 am	9.17	S3	6/22/2022	8:30 am	Non-Detect	15
Water Fountain Outside Room 282	M-282	8/3/2021	9:42 am	4.28									15
Water Fountain Next to Men's Room	M-408	8/3/2021	9:55 am	15.3	S5	6/22/2022	8:39 am	Non-Detect					15
Water Fountain Boy's Hall Upstairs	D-184	8/3/2021	10:02 am	1,800	WC-S4	1/13/2022	7:21 am	Non-Detect					15
Water Fountain Outside Room 168	D-168	8/3/2021	10:07 am	2.56									15
Water Fountain Next to Room 409	BR409	8/3/2021	10:10 am	11.8									15

Water Fountain Welcome Office	WOF	8/3/2021	10:15 am	6.64									15
Water Fountain Office	DC- 1117-A	8/3/2021	10:25 am	35	S7	6/22/2022	8:51 am	Non- Detect	S7	6/22/2022	8:51 am	Non-Detect	15
Water Fountain Boy's Hallway	B-207	8/3/2021	10:30 am	7.86									15
Water Fountain By Stairs	J-1-B	8/3/2021	10:35 am	10.8									15
Water Fountain By Stairs	J-1-A	8/3/2021	10:37 am	3.90									15

Location	Sample ID #	Date	Time	Lead Result µg/L	Re-Sample ID #	Date	Time	Lead Result µg/L	NJDEP Lead Limit - µg/L
Sink Nurse's Office	RN-305	8/3/2021	10:42 am	3.73					15
Sink Nurse's Office	RN-105	8/3/2021	10:50 am	1.12					15
Halsey Café Next to Booths		1/13/2022	7:48 am	38.0	S4	6/22/2022	8:34 am	2.25	15
Field Blank	FB	8/3/2021	NA	Non-Detect					15
Field Blank	FB	1/13/2022	NA	Non-Detect					15
Field Blank	FB	6/22/2022	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,

A handwritten signature in blue ink, consisting of a large, stylized 'J' followed by a series of loops and a horizontal line at the end.

John Beaupre
Senior Vice President

Attachments