

November 6, 2025

School District 70
4690 Roger St
Port Alberni, BC
V9Y 3Z4

Attention: Alex Taylor

Reference: Potable Water Lead Testing – Tsuma-as Elementary School

Introduction

Island EHS Ltd has collected forty-two (42) water samples from tap / bottle filling stations at **Tsuma-as Elementary School**, located at 5055 Compton Road, Port Alberni, BC. The purpose of the sampling is to evaluate potential lead exposure risk from water consumed from the tap / bottle-filling stations. The samples were collected on October 28, 2025, and we report the following.

Sampling Methodology

Sampling locations were selected by the client. All samples were taken from cold water lines.

The lead samples were collected using the methodology taken from “Guidelines on Evaluating and Mitigating lead in Drinking Water Supplies, Schools, Daycares & Other Buildings” (published April 2019 by the British Columbia Health Protection Branch), using the Random Daytime Sampling method. A 125mL First Draw sample was followed by a 125mL sample taken after a 30-second flush. This methodology was conducted to determine if a 30-second flush is sufficient to reduce the lead concentrations to below the Maximum Acceptable Concentration (MAC).

The samples were collected in an appropriate bottle supplied by an accredited laboratory. The samples were chilled and immediately submitted to the testing laboratory and tested for lead.

Samples were analyzed by the Island EHS in-house laboratory, using procedures based on methods recommended by the American Public Health Association (APHA) and the US Environmental Protection Agency (US-EPA) (EPA 200.9). Our laboratory is accredited by CALA to ISO/IEC 17025:2017 standards. Results were compared to the latest edition of the Canadian Drinking Water Quality Guidelines (CDWQG) published by Health Canada’s Water Quality and Health Bureau.

Results

Table 1: Lead concentration from tested locations for First Draw and Flushed Sampling, compared to the Maximum Allowable Concentration (MAC) for Lead (0.005 mg/L).

Sample Location	MAC ¹ (mg/L)	Random Daytime Sample (mg/L)	Comments
TES01-S TES01-F	0.005	0.0084 0.0005	Classroom 105
TES02-S TES02-F	0.005	0.0020 0.0008	Classroom 106
TES03-S TES03-F	0.005	0.0029 0.0007	Classroom107
TES04-S TES04-F	0.005	0.0019 0.0007	Classroom 108
TES05-S TES05-F	0.005	0.0032 0.0015	Boys Washroom
TES06-S TES06-F	0.005	0.0011 0.0006	Learning Assistance 101
TES07-S TES07-F	0.005	0.0024 0.0011	Classroom 135A
TES08-S TES08-F	0.005	0.0024 0.0013	Classroom 302
TES09-S TES09-F	0.005	0.0028 0.0014	Classroom 303
TES10-S TES10-F	0.005	0.0014 0.0010	Classroom 304
TES11-S TES11-F	0.005	0.0033 0.0005	Fountain Outside Changerooms
TES12-S TES12-F	0.005	0.0019 0.0006	Daycare 1
TES14-S TES14-F	0.005	0.0023 0.0009	Daycare Office
TES15-S TES15-F	0.005	0.0009 0.0008	Nap Room
TES16-S TES16-F	0.005	0.0016 0.0005	Classroom 209
TES17-S TES17-F	0.005	0.0019 0.0006	Classroom 207
TES18-S TES18-F	0.005	0.0017 0.0006	Classroom 210
TES19-S TES19-F	0.005	0.0015 0.0008	Classroom 206
TES20-S TES20-F	0.005	0.0026 0.0012	Classroom 211
TES21-S TES21-F	0.005	0.0017 0.0006	Classroom 212
TES22-S TES22-F	0.005	0.0019 0.0009	Classroom 201

¹ MAC = Maximum acceptable concentrations
Results in **RED** indicate values that exceed the CDWQG

Full analytical results can be found in Appendix A.

Locations of the samples can be found in Appendix B.

NOTE – Sample number 13 not used.

Discussion

The school is supplied by the municipal potable water distribution system. According to the BC Health Protection Branch, “Lead is usually not found in drinking water when it leaves the treatment plant. Instead lead tends to leach out of pipes and fixtures in buildings...” Until 1989, the BC Building Code did not have provisions for restricting the use of lead-containing materials in potable water lines. Under the Canadian Standards Association (CSA) B125.1 standard, plumbing, fitting and fixtures produced as recently as 2012 that were considered “lead-free” could contain as much as 8% lead by weight. Since 2012, the maximum percent of lead in fixtures that are considered “lead-free” is 0.25%.

Conclusions and Recommendations

Of the twenty-one (21) locations from which water samples were collected by Island EHS on October 28, 2025, within Tsuma-as Elementary School, located at 5055 Compton Road, Port Alberni, BC, one (1) location (TES01 – Classroom 105) was found to have an average lead concentration which exceeded the maximum acceptable concentration (MAC) in the first draw bottle. None of the locations were above the MAC after a thirty (30) second flush.

This indicates that there is a source of lead in the pipes and/or fixtures. The results for the sampling location (Classroom 105) indicates that a daily 30-second flush before using the water for drinking or cooking should be sufficient to reliably reduce the concentration of lead to below the MAC.

As the drinking water location is accessible by children, it is important to note that lead mitigation should be focused on engineering controls (e.g., plumbing replacement and filter installation) rather than administrative controls (e.g., signage) wherever possible. This is because not only are children most vulnerable to health effects related to lead, but they are also less likely than adults to read and follow directions.

The client may wish to consider the following suggestions to further address lead water service pipes:

- Replace as much as possible of the plumbing pipes, fixtures and fittings between the water main and the tap itself for the location that was found to have exceedances, or
- Where practicable, install in-line filters just before the point of use. Ensure the filters are certified to NSF/ANSI 53 for reduction of contaminants that cause health effects. The filters must be changed on a schedule recommended by the manufacturer,
- Employ a flushing program of at least thirty (30) seconds before use,
- Affix permanent signage directing users to alternate water sources such as water coolers or filtered water, to remind users to adequately flush the lines (“run until cold”) prior to drinking, or to indicate that the water is not potable; and
- Advise occupants to use cold water for cooking and drinking, even after flushing the pipes. Lead in pipes moves more readily into hot water than into cold water.

Following implementation of select recommendations, additional sampling should be conducted at the location that exceeded the Guideline to ensure that levels are no longer in exceedance. As part of this testing, it is recommended that biannual testing for lead be conducted on campus on sources where potable water is consumed. Following the implementation of this recommendation and subsequent results, this could be reduced to annual testing from select locations.


Limitations

This report has been prepared in accordance with established Industrial Hygiene practices. It is intended for the exclusive use of School District 70 to assist in the assessment of the drinking water quality in the sampled locations. The use of this document for any other purposes is at the sole risk of the users.

Island Environmental Health & Safety Ltd.



Matt Boyer de la Giroday
Occupational Hygiene Technologist
Field Work and Report



Ashlee McGiffin
Senior Occupational Hygienist
Report Review

**Appendix A:
Analytical Results**

Lead in Drinking Water Report



Island Environmental Health and Safety
 201 - 990 Hillside Avenue
 Victoria B.C, V8T 2A1
 (778)406-0933
admin@islandehs.ca

Certificate of Analysis

Client Name	School District 70	Report #	69843
Site Address	Tsuma-as Elementary	Report Date	2025-11-05
Collection Date	2025-10-28	Analysis Date	2025-11-04
Received by Lab	2025-10-29	PO	
Collected By	Matt Boyer de la Giroday	Notes	

Analysis Summary: Stagnant/Flush

Sample #	TES01	Result (mg/L)	0.0084	Stagnant
Location	Classroom 105	Result (mg/L)	0.0005	Flush
Sampling Time	6:27 AM	Comments		
Sample #	TES02	Result (mg/L)	0.0020	Stagnant
Location	Classroom 106	Result (mg/L)	0.0008	Flush
Sampling Time	6:29 AM	Comments		
Sample #	TES03	Result (mg/L)	0.0029	Stagnant
Location	Classroom 107	Result (mg/L)	0.0007	Flush
Sampling Time	6:30 AM	Comments		
Sample #	TES04	Result (mg/L)	0.0019	Stagnant
Location	Classroom 108	Result (mg/L)	0.0007	Flush
Sampling Time	6:32 AM	Comments		
Sample #	TES05	Result (mg/L)	0.0032	Stagnant
Location	Boys Washroom	Result (mg/L)	0.0015	Flush
Sampling Time	6:34 AM	Comments		
Sample #	TES06	Result (mg/L)	0.0011	Stagnant
Location	Learning Assistance 101	Result (mg/L)	0.0006	Flush
Sampling Time	6:36 AM	Comments		

Notes

Results are compared to the latest Canadian Drinking Water Quality Guideline (CDWQG), published by Health Canada

Results in **green** are below the CDWQG limit of 0.005 mg/L

Results in **red** are at or above the CDWQG limit of 0.005 mg/L

Analysed using EPA 200.9

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Analysis Summary: Stagnant/Flush

Sample #	TES07	Result (mg/L)	0.0024	Stagnant
Location	Classroom 135A	Result (mg/L)	0.0011	Flush
Sampling Time	6:38 AM	Comments		
Sample #	TES08	Result (mg/L)	0.0024	Stagnant
Location	Classroom 302	Result (mg/L)	0.0013	Flush
Sampling Time	6:40 AM	Comments		
Sample #	TES09	Result (mg/L)	0.0028	Stagnant
Location	Classroom 303	Result (mg/L)	0.0014	Flush
Sampling Time	6:42 AM	Comments		
Sample #	TES10	Result (mg/L)	0.0014	Stagnant
Location	Classroom 304	Result (mg/L)	0.0010	Flush
Sampling Time	6:44 AM	Comments		
Sample #	TES11	Result (mg/L)	0.0033	Stagnant
Location	Fountain Outside Changerooms	Result (mg/L)	0.0005	Flush
Sampling Time	6:46 AM	Comments		
Sample #	TES12	Result (mg/L)	0.0019	Stagnant
Location	Daycare 1	Result (mg/L)	0.0006	Flush
Sampling Time	6:48 AM	Comments		

Notes

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Analysis Summary: Stagnant/Flush

Sample #	TES14	Result (mg/L)	0.0023	Stagnant
Location	Daycare Office	Result (mg/L)	0.0009	Flush
Sampling Time	6:50 AM	Comments		
Sample #	TES15	Result (mg/L)	0.0009	Stagnant
Location	Nap Room	Result (mg/L)	0.0008	Flush
Sampling Time	6:52 AM	Comments		
Sample #	TES16	Result (mg/L)	0.0016	Stagnant
Location	Classroom 209	Result (mg/L)	0.0005	Flush
Sampling Time	6:54 AM	Comments		
Sample #	TES17	Result (mg/L)	0.0019	Stagnant
Location	Classroom 207	Result (mg/L)	0.0006	Flush
Sampling Time	6:56 AM	Comments		
Sample #	TES18	Result (mg/L)	0.0017	Stagnant
Location	Classroom 210	Result (mg/L)	0.0006	Flush
Sampling Time	6:58 AM	Comments		
Sample #	TES19	Result (mg/L)	0.0015	Stagnant
Location	Classroom 206	Result (mg/L)	0.0008	Flush
Sampling Time	7:00 AM	Comments		

Notes

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Collected By	Matt Boyer de la Giroday	Notes	

Analysis Summary: Stagnant/Flush

Sample #	TES20	Result (mg/L)	0.0026	Stagnant
Location	Classroom 211	Result (mg/L)	0.0012	Flush
Sampling Time	7:01 AM	Comments		
Sample #	TES21	Result (mg/L)	0.0017	Stagnant
Location	Classroom 212	Result (mg/L)	0.0006	Flush
Sampling Time	7:03 AM	Comments		
Sample #	TES22	Result (mg/L)	0.0019	Stagnant
Location	Classroom 201	Result (mg/L)	0.0009	Flush
Sampling Time	7:05 AM	Comments		

Island Environmental Health & Safety Ltd.

Notes

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Quality Control Report

	Result	Unit	Limits	Pass/Fail?
Duplicate	5	Rel. % Diff	0 - 15 %	PASS
LFM	94	% Recovery	85-115%	PASS
LRB	<0.0005	mg/L	<0.0132 mg/L	PASS
LFB	100	% Recovery	85-115%	PASS

Duplicate: Paired analysis of two portions of the same sample. Used to evaluate the variance in the measurement and homogeneity of the sample.

Laboratory Fortified Matrix (LFM): A client sample that has been fortified with a known amount of analyte. Used to evaluate matrix effects.

Laboratory Reagent Blank (LRB): A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Laboratory Fortified Blank (LFB): A blank matrix to which a known amount of analyte is added. Used to verify instrument calibration.

Results relate only to the items tested

This report is issued by Island EHS,
 accredited by CALA to ISO/IEC 17025:2017
 standards for the scope of testing.



CALA

Testing
 Accreditation No. 1005043

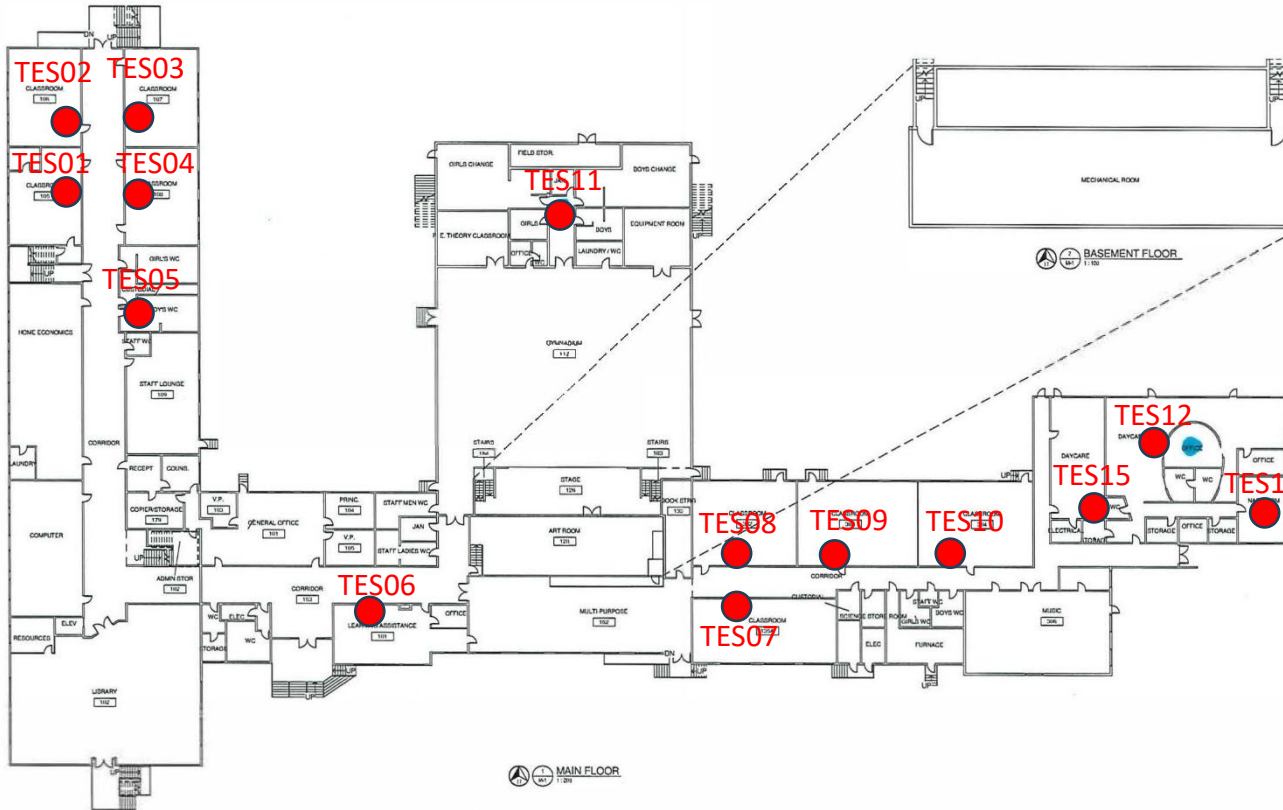
Laura Martin
 Laboratory Analyst

Ashlee McGiffin
 Data Review

End of Report

**Appendix B:
Sample locations**

Tsuma-as Elementary School – Main Floor Plan



LEGEND:

XX Water Sample Location



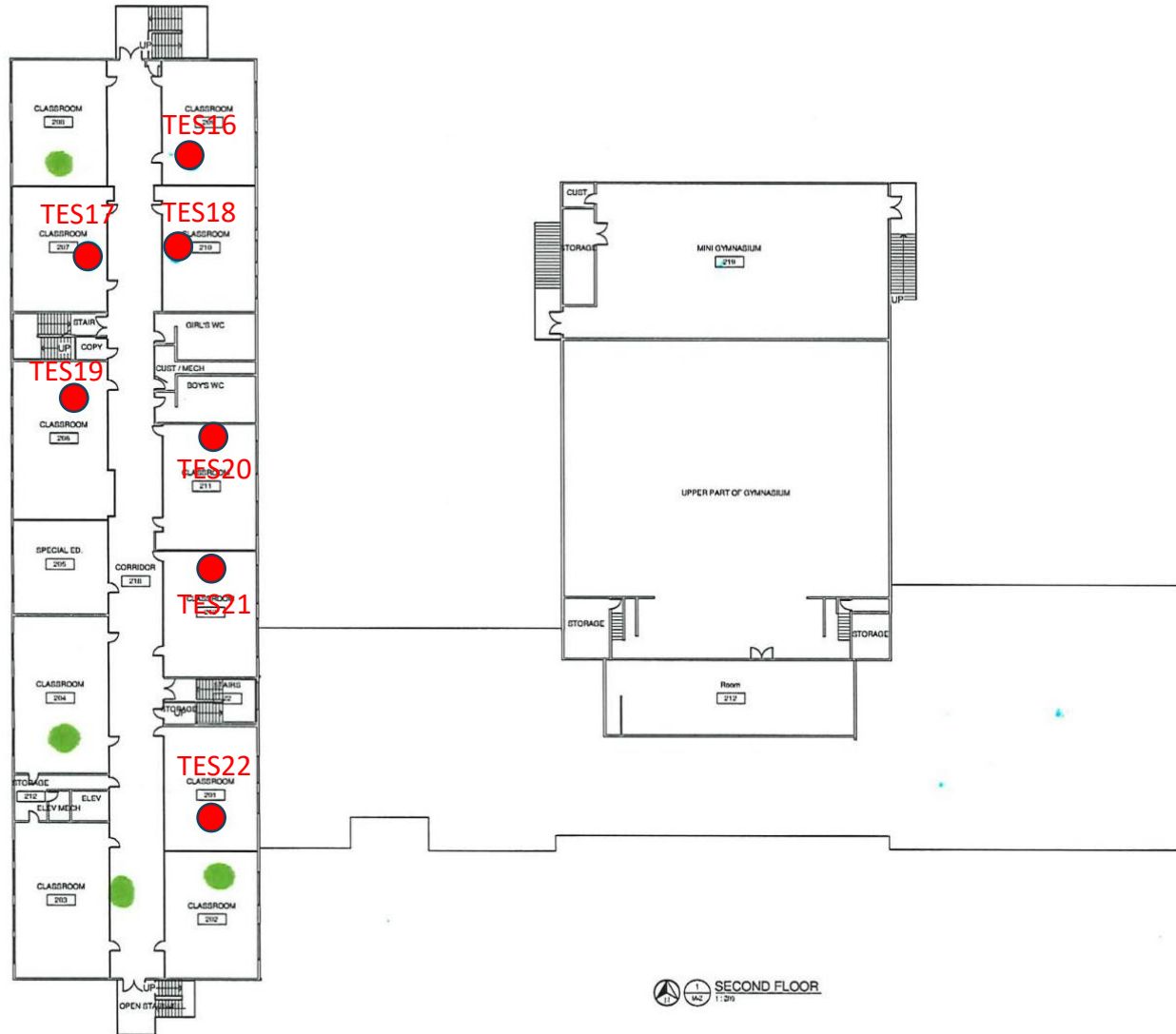
Project 69843	Date of Issue November 2025
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Lead in water testing
Sample Locations

Prepared for:
School District 70 – Pacific Rim
Sampling Site:
5055 Compton Road, Port Alberni, BC

Not to Scale

Tsuma-as Elementary School– Second Floor Plan



LEGEND:



Water Sample Location



Project
69843

Date of Issue
November 2025

Lead in water testing
Sample Locations

Prepared for:
School District 70 – Pacific Rim
Sampling Site:
5055 Compton Road, Port Alberni, BC

Not to Scale

