

November 6, 2025

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

**Attention: Alex Taylor**

**Reference: Potable Water Lead Testing – Maquinna Elementary**

---

### ***Introduction***

**Island EHS Ltd** has collected thirty-six (36) water samples from taps at **Maquinna Elementary**, located at 3881 Bruce St, Port Alberni, BC. The purpose of the sampling is to evaluate potential lead exposure risk from water consumed from the bottle-filling station. The samples were collected on October 29, 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). 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 <sup>1</sup> (mg/L)	Random Daytime Sample (mg/L)	Comments
ME01-S ME01-F	0.005	0.0037 0.0005	Classroom 122
ME02-S ME02-F	0.005	<b>0.0063</b> 0.0023	Classroom 121
ME03-S ME03-F	0.005	<b>0.0051</b> 0.0024	Classroom 124
ME04-S ME04-F	0.005	0.0034 0.0020	Classroom 125
ME05-S ME05-F	0.005	<b>0.0101</b> 0.0006	Classroom 120
ME06-S ME06-F	0.005	<b>0.0053</b> 0.0018	Office 131
ME07-S ME07-F	0.005	0.0028 0.0024	Classroom 132
ME08-S ME08-F	0.005	<b>0.0124</b> 0.0027	Classroom 13
ME09-S ME09-F	0.005	<b>0.0064</b> 0.0019	Classroom 111
ME10-S ME10-F	0.005	<b>0.0263</b> 0.0018	Work Area 15
ME11-S ME11-F	0.005	0.0038 <0.0005	Classroom 109
ME12-S ME12-F	0.005	<b>0.0159</b> 0.0023	Classroom 11
ME13-S ME13-F	0.005	0.0007 <0.0005	Classroom 7
ME14-S ME14-F	0.005	0.0034 <0.0005	Classroom 6
ME16-S ME16-F	0.005	<b>0.0477</b> <b>0.0254</b>	Classroom 5
ME17-S ME17-F	0.005	0.0032 <0.0005	Classroom 4
ME18-S ME18-F	0.005	0.0010 0.0005	Classroom 3
ME19-S ME19-F	0.005	0.0029 0.0017	Kindergarten 1

<sup>1</sup> 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 15 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 eighteen (18) locations from which water samples were collected by Island EHS on October 29, 2025, within Maquinna Elementary School, located at 3881 Bruce Street, Port Alberni, BC, nine (9) locations (ME02, ME03, ME05, ME06, ME08, ME09, ME10, ME12, ME16) were found to have an average lead concentration which exceeded the maximum acceptable concentration (MAC) in the first draw bottles. One location (ME16) was above the MAC after a 30 second flush.

This indicates that there is a source of lead in the pipes and/or fixtures. The results for most sampling locations indicate 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, however, for the one (1) location which exceeded the maximum acceptable concentration even after a 30 second flush, additional measures should be considered.

As the drinking water locations are 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:**

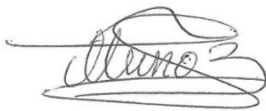
- Replace as much as possible of the plumbing pipes, fixtures and fittings between the water main and the tap itself for the locations that were found to have exceedances, *or*
- Re-testing the one (1) location which exceeded the maximum acceptable concentration even after the 30 second flush after a longer flushing period (i.e., five (5) minutes instead of thirty (30) seconds); *or*
- Disconnect the one (1) location which exceeded the maximum acceptable concentration, even after the 30 second flush, and replace with water cooler units; *or*
- Where practicable, install in-line filters just before 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. Run each tap that is used for consumption for at least 30 seconds, or until cold.
- 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 all locations 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 implementation of this recommendation and subsequent results this could be reduced to annual testing from select locations.

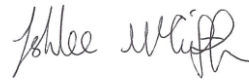
**Limitations**

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.**



Sandy Munoz de la Nava  
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](mailto:admin@islandehs.ca)

## Certificate of Analysis

Client Name	School District 70	Report #	69843
Site Address	Maquinna Elementary School	Report Date	2025-11-06
Collection Date	2025-10-29	Analysis Date	2025-11-05
Received by Lab	2025-10-31	PO	
Collected By	Sandy Munoz de la Nava	NoMES	

### Analysis Summary: Stagnant/Flush

Sample #	MES01	Result (mg/L)	0.0037	Stagnant
Location	Classroom 122	Result (mg/L)	0.0005	Flush
Sampling Time	6:07 AM	Comments		
Sample #	MES02	Result (mg/L)	0.0063	Stagnant
Location	Classroom 121	Result (mg/L)	0.0023	Flush
Sampling Time	6:09 AM	Comments		
Sample #	MES03	Result (mg/L)	0.0051	Stagnant
Location	Classroom 124	Result (mg/L)	0.0024	Flush
Sampling Time	6:11 AM	Comments		
Sample #	MES04	Result (mg/L)	0.0034	Stagnant
Location	Classroom 125	Result (mg/L)	0.0020	Flush
Sampling Time	6:13 AM	Comments		
Sample #	MES05	Result (mg/L)	0.0101	Stagnant
Location	Classroom 120	Result (mg/L)	0.0006	Flush
Sampling Time	6:17 AM	Comments		
Sample #	MES06	Result (mg/L)	0.0053	Stagnant
Location	Office 131	Result (mg/L)	0.0018	Flush
Sampling Time	6:20 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

# 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](mailto:admin@islandehs.ca)

## Certificate of Analysis

Client Name	School District 70	Report #	69843
Site Address	Maquinna Elementary School	Report Date	2025-11-06
Collection Date	2025-10-29	Analysis Date	2025-11-05
Received by Lab	2025-10-31	PO	
Collected By	Sandy Munoz de la Nava	NoMES	

### Analysis Summary: Stagnant/Flush

Sample #	MES07	Result (mg/L)	0.0028	Stagnant
Location	Classroom 132	Result (mg/L)	0.0024	Flush
Sampling Time	6:23 AM	Comments		
Sample #	MES08	Result (mg/L)	0.0124	Stagnant
Location	Classroom 13	Result (mg/L)	0.0027	Flush
Sampling Time	6:25 AM	Comments		
Sample #	MES09	Result (mg/L)	0.0064	Stagnant
Location	Classroom 111	Result (mg/L)	0.0019	Flush
Sampling Time	6:27 AM	Comments		
Sample #	MES10	Result (mg/L)	0.0263	Stagnant
Location	Work Area 15	Result (mg/L)	0.0018	Flush
Sampling Time	6:29 AM	Comments		
Sample #	MES11	Result (mg/L)	0.0038	Stagnant
Location	Classroom 109	Result (mg/L)	<0.0005	Flush
Sampling Time	6:32 AM	Comments		
Sample #	MES12	Result (mg/L)	0.0159	Stagnant
Location	Classroom 11	Result (mg/L)	0.0023	Flush
Sampling Time	6:34 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

Analysed using EPA 200.9

# 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](mailto:admin@islandehs.ca)

## Certificate of Analysis

Client Name	School District 70	Report #	69843
Site Address	Maquinna Elementary School	Report Date	2025-11-06
Collection Date	2025-10-29	Analysis Date	2025-11-05
Received by Lab	2025-10-31	PO	
Collected By	Sandy Munoz de la Nava	NoMES	

### Analysis Summary: Stagnant/Flush

Sample #	MES13	Result (mg/L)	0.0007	Stagnant
Location	Classroom 7	Result (mg/L)	<0.0005	Flush
Sampling Time	6:35 AM	Comments		
Sample #	MES14	Result (mg/L)	0.0034	Stagnant
Location	Classroom 6	Result (mg/L)	<0.0005	Flush
Sampling Time	Not provided	Comments		
Sample #	MES16	Result (mg/L)	0.0477	Stagnant
Location	Classroom 5	Result (mg/L)	0.0254	Flush
Sampling Time	Not provided	Comments		
Sample #	MES17	Result (mg/L)	0.0032	Stagnant
Location	Classroom 4	Result (mg/L)	<0.0005	Flush
Sampling Time	Not provided	Comments		
Sample #	MES18	Result (mg/L)	0.0010	Stagnant
Location	Classroom 3	Result (mg/L)	<0.0005	Flush
Sampling Time	Not provided	Comments		
Sample #	MES19	Result (mg/L)	0.0029	Stagnant
Location	Kindergarten 1	Result (mg/L)	0.0017	Flush
Sampling Time	Not provided	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

Analysed using EPA 200.9

# 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](mailto:admin@islandehs.ca)

## Certificate of Analysis

Client Name	School District 70	Report #	69843
Site Address	Maquinna Elementary School	Report Date	2025-11-06
Collection Date	2025-10-29	Analysis Date	2025-11-05
Received by Lab	2025-10-31	PO	
Collected By	Sandy Munoz de la Nava	NoMES	

## Quality Control Report

	Result	Unit	Limits	Pass/Fail?
<b>Duplicate</b>	3	Rel. % Diff	0 - 15 %	<b>PASS</b>
<b>LFM</b>	99	% Recovery	85-115%	<b>PASS</b>
<b>LRB</b>	<0.0005	mg/L	<0.0132 mg/L	<b>PASS</b>
<b>LFB</b>	86	% Recovery	85-115%	<b>PASS</b>

**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

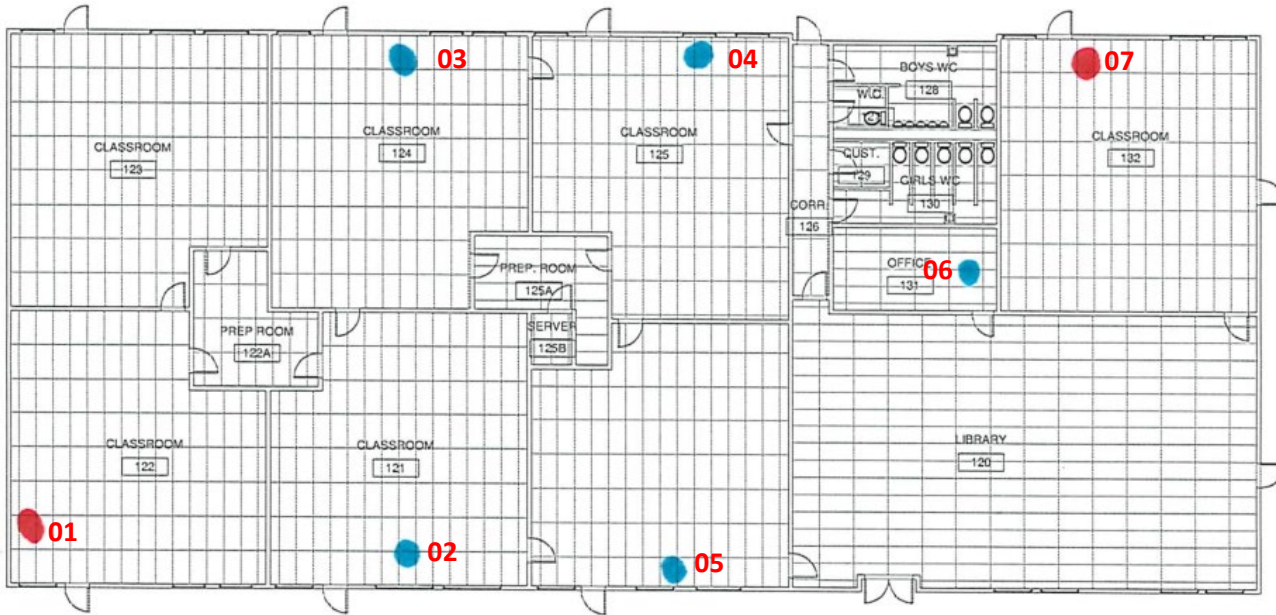
Laura Martin  
Laboratory Analyst

Ashlee McGiffin  
Data Review

End of Report

**Appendix B:  
Sample locations**

# Maquinna Elementary – Main Floor Plan



## LEGEND:

●XX Water Sample Location



Project  
**69843**

Date of Issue  
**November 2025**

Lead in water testing  
Sample Locations

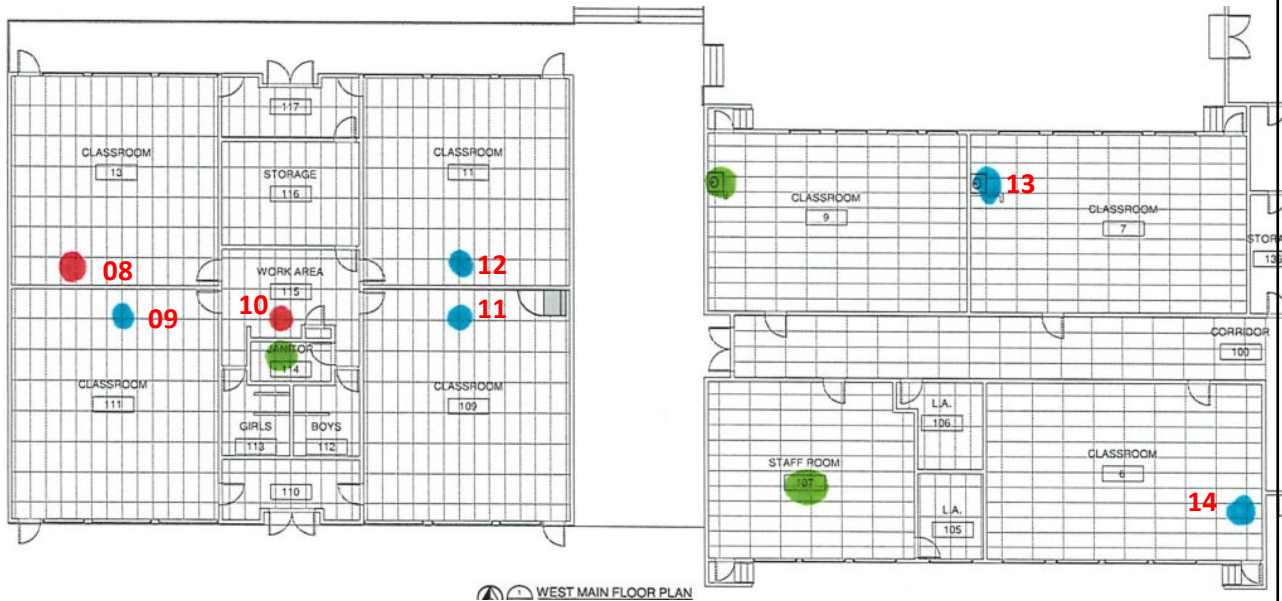
Prepared for:  
**School District 70 – Pacific Rim**  
Sampling Site:  
**3881 Bruce Street, Port Alberni, BC**


Not to Scale



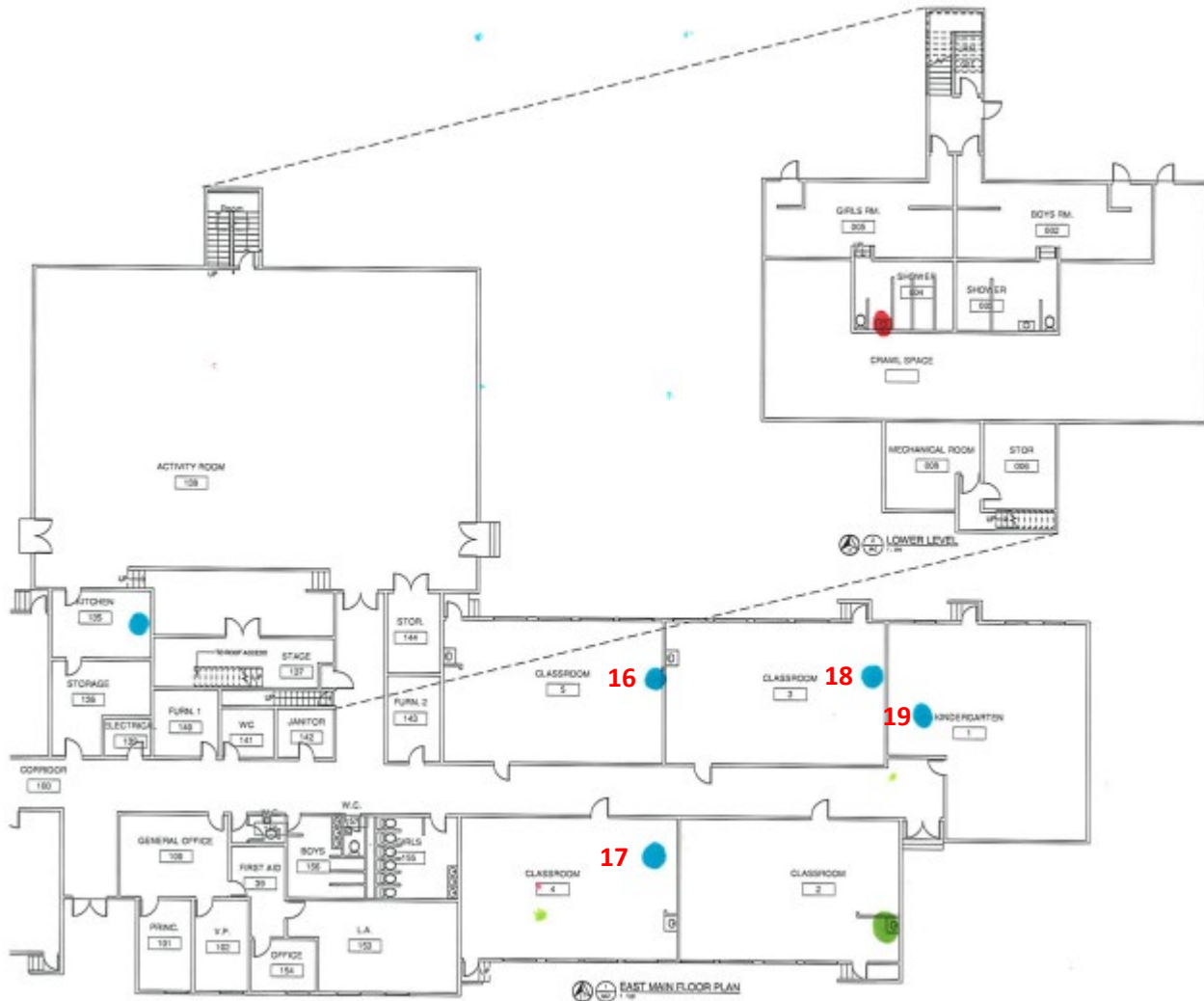
# Maquinna Elementary – West Floor Plan

**LEGEND:**  
 XX Water Sample Location



Project <b>69843</b>	Date of Issue <b>November 2025</b>
Lead in water testing Sample Locations	
Prepared for: <b>School District 70 – Pacific Rim</b> Sampling Site: <b>3881 Bruce Street, Port Alberni, BC</b>	
Not to Scale	 <small>Island EHS Water &amp; Environmental Health &amp; Safety Ltd.</small>

# Maquinna Elementary – East Main 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:  
**3881 Bruce Street, Port Alberni, BC**

Not to Scale

