



**NANAIMO LADYSMITH**  
**PUBLIC SCHOOLS**

April 12, 2017

Learning Together

# Department of Facilities **Testing for Lead Content in Drinking Water**

# Testing for Lead in Drinking Water Background

- On February 24, 2016 the Ministry of Education directed School Districts in British Columbia to begin a program of testing for lead content in all facilities built prior to 1990
- “School Districts must complete lead content testing on all school facilities once every 3 years. Therefore a minimum of 1/3 (or 33%) of the school facilities in a school districts inventory must be tested each year”
- Ministry provided a developed policy for Lead Content Testing in Drinking Water of School Facilities on September 27, 2016 with the following requirements:
  1. Risk Assessment
  2. Water Testing
  3. Communications Plan
  4. Mitigation Strategies



# Testing for Lead in Drinking Water Background

NLPS Age of Facilities		
Ministry #	School Name	Year of Construction
68023	Cinnabar	2001
68009	Cedar Secondary	2000
68038	Frank J Ney	1999
68025	Coal Tyee	1996
68073	Randerson Ridge	1995
68010	Dover Bay Secondary	1993
68055	McGirr	1991
68086	Uplands Park	1981
68500	Grounds Storage Shed	1980
68041	Georgia Avenue	1978
68506	Stores Building	1976
68066	Pleasant Valley	1973
68505	Welding Shop	1970
68009	Cedar Elementary	1969
28500	Change House NDSS	1969
68507	Bus Garage	1968
68015	Wellington Secondary	1967
68044	Hammond Bay	1967
68024	Cilaire	1966
68085	Woodbank	1966
68049	Ladysmith Primary	1965
68502	Board Office	1965
68076	Rock City	1964
68077	Rutherford	1964
68027	Davis Road	1962
68058	North Oyster (1913)	1962
68061	Park Avenue	1962
68052	Mountain View	1959
68508	Old Board Office (Ladysmith)	1959
68030	Dufferin Crescent	1958
68011	John Barsby Secondary	1957
68503	Maintenance Building	1956
68504	Painters etc (pre 1956)	1956
68037	Forest Park	1955
68048	Ladysmith Intermediate	1955
68071	Quarterway	1955
68013	Woodlands Secondary	1953
68040	Gabriola	1953
68019	Brechin (1925)	1952
68080	Seaview	1952
68001	Nanaimo District Secondary	1951
68028	Departure Bay	1951
68002	Ladysmith Secondary	1950
68022	Chase River	1950
68036	Fairview	1950
68053	ConnectEd (Mount Benson)	1950
68018	Bayview	1949
68065	Pauline Haarer	1947
68501	Resource Centre (Quennell Gym)	1923

# Testing for Lead in Drinking Water Background

- ▶ October 12, 2016 tender #2483 released with a closing date of November 2, 2016
- ▶ Tender awarded to Tetra Tech Engineering on November 16, 2016
- ▶ Testing commenced December 2016 on 1/3 of the schools built prior to 1990:
- ▶ All samples were taken after midnight on Sundays to represent the worst case scenario – typically the longest time that water sits stagnant in the building water distribution system during the school year.



# Testing for Lead in Drinking Water Background

■ Testing commenced December 2016 on 1/3 of the schools built prior to 1990:

- John Barsby Community
- Nanaimo District Secondary
- Bayview Elementary
- Chase River Elementary
- Fairview Community
- Ladysmith Intermediate
- Ladysmith Primary
- Ecole North Oyster Elementary
- Pleasant Valley Elementary
- Rock City Elementary

# Testing for Lead in Drinking Water Background

- Testing was also completed on 1/3 of the support and leased buildings
  - Cheeky Monkey Daycare (old Ladysmith Board office)
  - District Administration Centre
  - Rotary Bowl Change House
  
  - Ecole Hammond Bay Elementary
    - Added on as extra to take advantage of HVAC works summer 2017

# Testing for Lead in Drinking Water Results

- ▶ Tetra Tech's Summary and Conclusions note that every NLPS facility tested had some pre-flush samples with lead concentrations above the Canadian Drinking Water Quality.
- ▶ 59% of zero second samples met Canadian Drinking Water Quality Guidelines (CDWQG)
- ▶ 98% of samples cleared to acceptable levels within 2 minutes of flushing – 6 samples out of 273 did not pass

# Testing for Lead in Drinking Water Results

School	Samples	0 sec Fail	30 sec Fail	2 Min Fail	5 min Fail
J Barsby	35	15	5	4	2
NDSS	39	6	1	1	1
Bayview	15	3	0	0	0
Chase River	14	5	0	0	0
Fairview	28	18	1	0	0
LSI	20	13	7	1	0
LSP	18	10	2	0	0
Ecole North Oyster	24	13	0	0	0
Pleasant Valley	21	7	1	0	0
Rock City	23	9	0	0	0
Cheeky Monkey	4	3	0	0	0
DAC	5	1	0	0	0
Rotary Change House	5	3	0	0	0
Hammond Bay	22	7	0	0	0
<b>Program Total</b>	<b>273</b>	<b>113</b>	<b>17</b>	<b>6</b>	<b>3</b>





# Testing for Lead in Drinking Water Recommendations

## 7.0 SUMMARY AND CONCLUSIONS

The overall results of the Domestic Water Testing Inventory are summarized in the section below.

Tetra Tech notes that every SD 68 facility tested had pre-flush samples with lead concentrations above the CDWQG MAC; and consequently every facility tested will require a mitigation strategy in place. Tetra Tech recommends that SD 68 continue with its ongoing procedure of conducting a 2 minute flush at each drinking water consumption point each morning; and running taps/faucets until cold prior to consuming water. Tetra Tech noted signage at most drinking water consumption points stating "Water Quality – First thing in the morning... Run the water for two minutes before drinking. Throughout the day... Let the water run until it is cold before drinking." Except where noted below, this procedure is sufficient to reduce the lead concentration in the drinking water below the CDWQG MAC.

Tetra Tech recommends that each facility assessed be inspected to ensure that the above noted signage is present and in good condition at each point where drinking water could be consumed. Tetra Tech further recommends that a bulletin be provided to staff at each facility summarizing the drinking water quality results at their facility and reminding them of the above procedure. Staff should then instruct students and visitors in the drinking water procedure.

# Testing for Lead in Drinking Water Remediation

- ▶ Signage has been posted at all facilities tested as recommended by Consultant
- ▶ In addition, signage has been posted at the other 2/3 of facilities not yet tested



# Testing for Lead in Drinking Water Remediation

- ▶ SEP (School Enhancement Program) funding has been utilized to address facilities where the testing indicated flush times greater than 2 minutes or as recommended by the Consultant.
- ▶ Approximately \$70k has been allocated to automatic flush valves, new fixtures and refrigerated drinking fountains in these facilities
- ▶ Remediation works will be completed by the end of April.

# Testing for Lead in Drinking Water Remediation



# Testing for Lead in Drinking Water Communication Plan

- ▶ Meetings with the Principals of the affected Schools and the Consultant were completed the week of April 3<sup>rd</sup>.
- ▶ Information sheets were produced by the Consultant and posted at each site
- ▶ Testing results together with the recommended remediation works have been delivered to both the Ministry of Education and the Vancouver Island Health Authority
- ▶ Both the Consultants report, this presentation and the remediation works have been posted to the Districts web page.

# Testing for Lead in Drinking Water Communication Plan Information Sheet

## GET THE LEAD OUT!

### Lead in Drinking Water

#### Where does lead in the environment come from?

Lead is present in drinking water due to the corrosion of plumbing systems. Sources typically include: • lead solder + jointing compound • lead in bronze and brass fittings • lead service lines into homes

Lead sources in plumbing are commonly present at home, school, and work in buildings older than 1990.

#### How are you exposed to lead in the environment?

The average Canadian is potentially exposed to lead in food, air pollution, soil and household dust in addition to drinking water.

Intake of lead from drinking water as a % of all sources

▶ 9.8%	♂ ♀
▶ 11.3%	♂ ♀

#### What are the effects of lead?

Lead is a cumulative poison. Lead can affect the central nervous system, resulting in tiredness, sleeplessness, irritability, headaches, joint pains and gastrointestinal symptoms.

Health Canada has set a Maximum Allowable Concentration (MAC) of lead in drinking water of 10 µg/L. This guideline is for *chronic effects* from water consumed for *extended* periods; short-term consumption of water containing lead at concentrations above the MAC does not necessarily pose undue risk to health!

*To be chronically exposed to lead in drinking water at school you would have to be the first person to drink from a tap with high lead concentrations every day!*

#### How can I limit my exposure to lead in drinking water?

If the building is older than 1990, lead sources may be present. Follow these *steps*:

- The first person to use a tap in the morning should run the water for at least 2 minutes before drinking.
- Throughout the day, run the tap water until it is cold before drinking, this ensures you are drawing fresh water.

Testing completed throughout schools in Nanaimo Ladysmith Public Schools has shown that these steps are effective in reducing the concentration of lead in drinking water below the MAC.



#### Actions

- ✓ Remind students, staff and visitors about how to limit exposure through flushing taps!
- ✓ Water Quality – First thing in the morning... Run the water for two minutes before drinking. Throughout the day... Let the water run until it is cold before drinking.
- ✓ Nanaimo Ladysmith Public Schools is replacing faucets and fittings where high lead concentrations were identified, and installing automated flushing systems where appropriate to prevent stagnant water in the plumbing systems – all part of our long-term monitoring awareness program.



Sources:  
Health Canada, "Lead" (revised April 1992) (revised July 1993).  
Health Canada, "Guidance on Controlling Corrosion in Drinking Water Distribution Systems", Published June 2009.  
Tetra Tech Canada, "Domestic Water Testing & Lead Inventory – Various Schools", prepared for Nanaimo Ladysmith Public Schools, 08/01/17.

# Testing for Lead in Drinking Water

## Next Steps

- ▶ 2017/18 AFG includes line item to give consideration to completing Lead in Drinking Water testing and remediation at all remaining pre-1990 schools.
- ▶ If achievable, this would complete testing 1 year ahead of Ministry schedule.
- ▶ If AFG pressures do not allow for increased testing, the Ministry schedule of 1/3 each year will be followed.
- ▶ Testing is then required for 1/3 of pre-1990 facilities each year following.

# Testing for Lead in Drinking Water

Questions?