Asbestos
in Public Drinking Water Supplies in Newfoundland and Labrador

Department of Environment and Conservation
Water Resources Management Division
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Newfoundland Labrador

Introduction

Asbestos is a general term for fibrous silicate minerals that are naturally present in the earth's crust. These fibers are mined for commercial purposes. While asbestos is not permitted for use in Canada anymore, there are still asbestos lined concrete (A/C) water distribution pipes present in communities in Newfoundland and Labrador. Typically these pipes remain only in small portions of the distribution system and are being phased out due to the age of the pipes.

Guidelines for Canadian Drinking Water – Asbestos

There is no consistent, convincing evidence that ingested asbestos is hazardous. There is, therefore, no need to establish a maximum acceptable concentration (MAC) for asbestos in drinking water. (Health Canada, 1989)

The lack of guideline in Canada, is consistent with Australia and the European Union. The United States Environmental Protection Agency (US EPA) has a drinking water quality guideline for asbestos structures of 7 MFL (million fibres per litre).

Monitoring Program

The Water Resources Management Division was requested to develop a monitoring program for establishing the communities which utilize A/C pipes in the province's drinking water distribution systems and to determine the existence/extent of asbestos fibers in drinking water.

Asbestos structure analysis cannot be completed by any laboratory in Canada. Water samples were shipped to EMSL Analytical, Inc. in Cinnaminson, New Jersey, USA. At the laboratory the determination of asbestos structures >10µm in drinking water was performed using the 100.2 Method (EPA 600/R-94/134). This is a certified testing method established by the EPA.

Water supply systems that still utilize A/C pipe were identified and a monitoring program was established. Monitoring was conducted between May 7th and 15th, 2012.

As per our inventory, a total of 19 water supply systems utilize A/C pipes in their distribution system. A water quality sample was collected at each of the identified water supply systems.

Table 1 - Results from the Monitoring Program

Community Name	Region (Env)	Serviced Area #	Serviced Area(s)	Water Supply #	Source Name	Sample Date	FIltration Date	Fibers Detected	Analytical Sensitivity	Concentration MFL (million fibers per liter)
Baie Verte	W	SA-0011	Baie Verte	WS-S-0011	Baie Verte River	2012-05-07	2012-05-09	ND	0.18	<0.18
Bonavista	E	SA-0074	Bonavista	WS-S-0073	Long Pond	2012-05-07	2012-05-09	ND	0.49	<0.49
Burin	E	SA-0101	Burin	WS-S-0099	Long Pond	2012-05-15	2012-05-17	ND	0.19	<0.19
Centreville-Wareham-Trinity	C	SA-0140	Centreville-Wareham	WS-S-0138	Northwest Pond	2012-05-08	2012-05-16	ND	0.19	<0.19
Channel-Port aux Basques	W	SA-0161	Channel-Port Aux Basques	WS-S-0159	Gull Pond & Wilcox Pond	2012-05-08	2012-05-16	ND	0.97	<0.97
Corner Brook	W	SA-0199	Corner Brook (All of eastside, portion of westside) (+Massey Drive)	WS-S-0196	Trout Pond, Third Pond (2 intakes)	2012-05-07	2012-05-09	ND	0.97	<0.97
Deer Lake	W	SA-0219	Deer Lake (+Reidville)	WS-S-0214	Humber Canal, Grand Lake	2012-05-07	2012-05-09	ND	0.97	<0.97
Glenwood	C	SA-0288	Glenwood	WS-S-0004	Gander Lake (The Outflow)	2012-05-08	2012-05-16	ND	0.19	<0.19
Harbour Breton	C	SA-0331	Harbour Breton	WS-S-0324	Connaigra Pond, Hutchings Pond	2012-05-08	2012-05-16	ND	0.19	<0.19
Milltown-Head of Bay D'Espoir	C	SA-0476	Milltown, Head of Bay D'Espoir	WS-S-0461	Jersey Pond	2012-05-08	2012-05-16	ND	0.97	<0.97
New-Wes-Valley	C	SA-0503	Wesleyville-Badger's Quay-Pool's Island, Brookfield-Poundcove	WS-S-0485	Little Northwest Pond	2012-05-08	2012-05-16	ND	0.19	<0.19
Peterview	C	SA-0900	Peterview	WS-S-0291	Northern Arm Lake	2012-05-07	2012-05-09	ND	0.97	<0.97
Placentia	E	SA-0568	Dunville	WS-S-0548	Wyses Pond	2012-05-08	2012-05-15	ND	0.19	<0.19
Placentia	E	SA-0569	Placentia, Jerseyside, SE Placentia	WS-S-0549	Larkins Pond	2012-05-08	2012-05-15	ND	4.90	<4.90
Robert's Arm	C	SA-0643	Robert's Arm	WS-S-0622	Young's Pond / Dam Pond	2012-05-07	2012-05-09	ND	0.19	<0.19
St. John's	E	SA-0718	St. John's	WS-S-0693	Windsor Lake	2012-05-07	2012-05-09	ND	0.19	<0.19
St. Lawrence	E	SA-0724	St. Lawrence	WS-S-0699	St. Lawrence River	2012-05-15	2012-05-21	3	0.19	0.58
Stephenville	W	SA-0741	Stephenville	WS-G-0716	Well Field	2012-05-08	2012-05-16	ND	0.19	<0.19
Winterton	E	SA-0815	Winterton	WS-S-0787	Western Pond	2012-05-08	2012-05-15	ND	0.19	<0.19

Interpretation of Results

All samples collected for the asbestos monitoring program, with the exception of one location, were determined to be less than the analytical sensitivity of the testing procedure. The one location that produced a numerical result was St. Lawrence with a value of 0.58 MFL which is a very low concentration and well below the US EPA guideline of 7 MFL.

Analytical sensitivity for each sample is dependent on the clarity of the sample. Typically, with more color in the sample, the sensitivity value will increase. All analytical sensitivities with the exception of one sample remained below 1 MFL. The one location was Placentia (Larkins Pond) with an analytical sensitivity of 4.90 (with result of <4.90MFL) which is below the US EPA guideline of 7 MFL.

The analytical results are presented in Table 1.

Conclusion

This special monitoring program analyzed all communities with A/C pipe in their drinking water distribution system. All results showed that there is no issue with asbestos structures in drinking water quality in the province. No further action for asbestos monitoring is required.