

Carbon Tetrachloride and Benzene in Public Drinking Water Supplies of Newfoundland and Labrador

Department of Environment and Conservation
Water Resources Management Division
December 2008



1.0 Background

Carbon tetrachloride

Carbon is a volatile organic alkyl halogen which is classified as “probably carcinogenic”. It is produced from a release of man-made sources from manufacturing. The “*Guideline for Canadian Drinking Water Quality*” (GCDWQ) for carbon tetrachloride is 0.005 mg/L. (Health Canada, 1989).

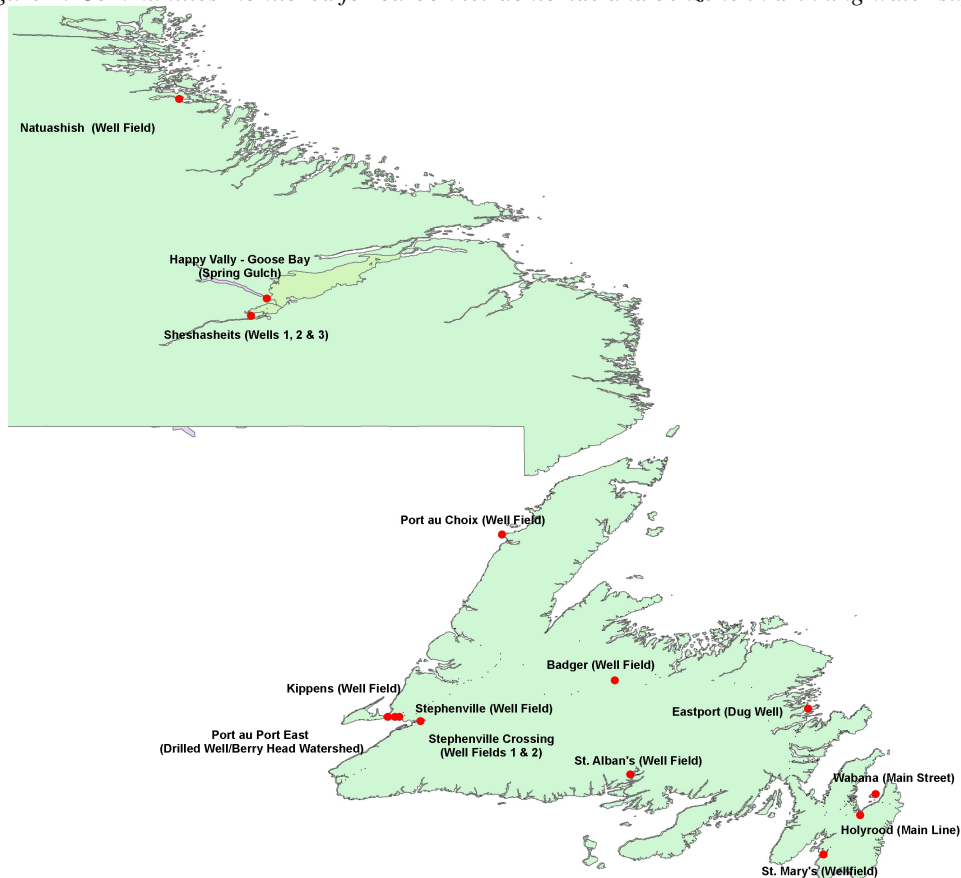
Benzene

Benzene is an aromatic hydrocarbon and is classified as “carcinogenic”. It is naturally occurring in crude oil and gasoline and is also used in the manufacture of other organic chemicals. The “*Guideline for Canadian Drinking Water Quality*” (GCDWQ) for benzene is 0.005 mg/L. (Health Canada, 1987).

2.0 Scheduled Sampling

Fourteen water supplies were selected for water quality monitoring for carbon tetrachloride and benzene in the summer sampling season. Supplies were selected for areas that may be impacted by leakage from service station gasoline storage. The communities that were selected are shown in Figure 1.

Figure 1: Communities monitored for carbon tetrachloride and benzene in drinking water supplies



3.0 Water Quality Results

Samples were sent to Maxxam Analytics Inc. for water quality analysis for both carbon tetrachloride and benzene. The results from the sampling are shown in Table 1.

Table 1: Sample results for carbon tetrachloride and benzene

Community Name	Water Supply	Sample Date	Carbon Tetrachloride (mg/L)	Benzene (mg/L)
Badger	Well Field	01-Aug-08	<0.001	<0.001
Eastport (+Sandy Cove)	Dug	10-Sep-08	<0.001	<0.001
Happy Valley-Goose Bay	Spring Gulch	10-Jul-08	<0.001	<0.001
Holyrood	Main Line	16-Sep-08	<0.001	<0.001
Kippens	Well Field	16-Sep-08	<0.001	<0.001
Natuashish	Well Field	09-Jul-08	<0.001	<0.001
Port au Port East	Drilled Well / Berry Head Watershed	16-Sep-08	<0.001	<0.001
Port au Choix	Well Field	10-Sep-08	<0.001	<0.001
Sheshasheits	Wells 1, 2 & 3	10-Jul-08	<0.001	<0.001
Stephenville	Well Field	10-Sep-08	<0.001	<0.001
Stephenville Crossing	Well Fields 1 & 2	10-Sep-08	<0.001	<0.001
St. Alban's	Well Field	15-Sep-08	<0.001	<0.001
St. Mary's	Wellfield	14-Aug-08	<0.001	<0.001
Wabana	Main Street	25-Sep-08	<0.001	<0.001

All fourteen water supply results for both carbon tetrachloride and benzene were less than detection limits. Consequently, both carbon tetrachloride and benzene are below the GCDWQ of 0.005mg/L for all water supplies monitored.

4.0 Path Forward

Regular water quality monitoring for carbon tetrachloride and benzene will not be scheduled. However, monitoring for carbon tetrachloride and benzene may be considered for water supplies that may be influenced by potential gasoline storage leakages on a site specific basis.

5.0 References

Health Canada, 1989. *Carbon Tetrachloride Technical Document*. Guidelines for Canadian Drinking Water Quality.

Health Canada, 2006. *Benzene Technical Document*. Guidelines for Canadian Drinking Water Quality.