

# What you need to know

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**S**ome residents have asked to hear from government agencies more often about the TCE remediation that is on-going in the Bishop Street Community. This newsletter has been developed to share updates about how the remediation process is being monitored, reviewed and regulated by staff from the **Ontario Ministry of the Environment, Region of Waterloo Public Health, Region of Waterloo Water Services, City of Cambridge and Grand River Conservation Authority.**

## Indoor Air Concentrations of TCE in the Bishop Street Community

The table below shows the number of homes that currently fall into specific indoor air concentration ranges, and also shows how many homes fell into each category based on their highest TCE concentrations ever measured.

The installation of mitigation systems and the declining groundwater concentrations have helped to significantly reduce the indoor air concentrations of TCE within the Bishop Street Community. At present, more than 95% of homes have TCE concentrations below the level where mitigation is recommended (i.e. concentrations are less than 5 µg/m<sup>3</sup>). The recommendations at right are in place for the Bishop Street Community, as a reminder.

### Recommended action levels associated with the indoor air concentrations of TCE:

#### *Less than or equal to 0.5 µg/m<sup>3</sup>*

No further action required for these homes (i.e. no testing or remediation required).

#### *Greater than 0.5 but less than or equal to 5 µg/m<sup>3</sup>*

Annual indoor air testing recommended while groundwater remediation is on-going (i.e. remediation of the TCE source contamination in the groundwater).

#### *Greater than 5 µg/m<sup>3</sup>*

It is recommended that homes be assessed for indoor air remediation (i.e. active TCE removal from indoor air) while groundwater remediation is on-going.

If you have been contacted to have your home tested for TCE in indoor air, we would recommend that you participate in this winter's sampling program, being coordinated by the Bishop Street Community Information Centre (519-653-5774 or stop by 695 Bishop St. N. Mon–Fri, 9 a.m.–4 p.m.).

The Ministry of the Environment continues to independently collect air samples to verify test results from this program.

	Number of homes with an indoor air concentration of TCE:			Total
	Less than or equal to 0.5 µg/m <sup>3</sup>	Greater than 0.5 but less than or equal to 5 µg/m <sup>3</sup>	Greater than 5 µg/m <sup>3</sup>	
Historically (based on highest values recorded)	114 homes	221 homes	305 homes	640 homes
Currently (as of October 25, 2011)	380 homes	246 homes	14 homes	640 homes

# Trichloroethylene (TCE) and Health

Learning about the relationship between TCE and health is a top priority for most residents. To access informative resources from Public Health's website, see directions on the next page.

**For your information, here are a few "Questions & Answers" about TCE and health:**

## **Q: How could I be exposed to TCE?**

**A:** Residents in the Bishop Street Community may have been exposed to TCE due to soil vapour intrusion of TCE into the indoor air of homes. This can happen because there is TCE in the groundwater underneath many homes. From the groundwater, TCE can evaporate and migrate through the air spaces in the soil, and eventually into homes. Levels of TCE in the indoor air of homes depend on a few factors, such as (a) how much TCE is in the groundwater, (b) what kind of building foundation the home has, (c) how well-ventilated the home is, and (d) whether there is equipment in the home to actively remove TCE from the air. The only exposure pathway as a result of groundwater contamination in this community is from soil vapour intrusion.

## **Q: What is the overall risk to health from TCE in the Bishop Street Community?**

**A:** There are many health effects described by scientific research for TCE, especially for acute exposures (i.e. short-term exposures to very high concentrations such as in the hundreds of thousands of  $\mu\text{g}/\text{m}^3$ ). However the levels of TCE in the Bishop Street Community are not expected to result in these acute effects. While potential health risks associated with lower level, longer term exposure are possible, the risk is low for the community overall, given the relatively low indoor air concentrations of TCE and the continuing decline of TCE levels in homes. Currently, more than 95% of homes have concentrations below the level where active mitigation measures are recommended.

## **Q: Tell me more about possible health risks related to TCE exposure.**

**A:** Whether there is a risk of health effects (cancer or non-cancer) and the degree of risk varies depending on a number of factors, such as:

- How much TCE a person is exposed to
- How long a person is exposed to TCE
- Other individual risk factors, such as age, lifestyle habits (e.g. smoking, diet, etc.), genetics, and other chemical exposures a person has

The main health concern with TCE is that exposures can potentially cause or contribute to causing cancer. Nowadays, cancer is quite prevalent. About 40% of women and 45% of men will have cancer in their lifetime.<sup>1</sup> Therefore in a community of this size (approx. 1500 people), we might expect about 600–675 people to have cancer in their lifetime, with no TCE present. The average TCE exposures experienced in this neighbourhood were low, and risk assessment calculations show that over a lifetime of exposures we could expect less than one cancer to result from TCE in this community. If this one cancer occurred, it would be in addition to the 600–675 cancers from other causes that would also occur.

To understand your individual risk, consult the provincial government report on TCE in the Bishop Street Community. (Pictured at right, with directions to view the full report on Public Health's website.)

Always remember to talk to your family doctor if you have a personal health issue that you are concerned about. Public Health can connect one-on-one with any resident's physician about the TCE situation in the community or assist them in making referrals to specialists.

## **Q: What is being done to reduce exposure to TCE in the Bishop Street Community?**

**A:** The Ministry of the Environment and Public Health are monitoring the environmental remediation efforts in the Bishop Street Community. The remedial strategy has two main components. The first is to actively remove TCE from the indoor air of homes until they have very low levels. At present more than 95% of homes in the study area are below the level where indoor air mitigation is recommended. The second component is to reduce the source of TCE from the groundwater beneath the neighbourhood. By removing and destroying TCE from groundwater, remediation efforts are decreasing TCE in both groundwater and indoor air.

<sup>1</sup> Canadian Cancer Statistics 2011. Canadian Cancer Society, Public Health Agency of Canada and Statistics Canada. Available online at: [http://www.cancer.ca/canada-wide/about%20cancer/cancer%20statistics.aspx?sc\\_lang=en](http://www.cancer.ca/canada-wide/about%20cancer/cancer%20statistics.aspx?sc_lang=en)



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### Trichloroethylene (TCE) Contamination in the Bishop Street Community, Cambridge, Ontario

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The Environmental and Occupational Health Unit at the Ontario Agency for Health Protection & Promotion (now called Public Health Ontario) prepared this report about trichloroethylene (TCE) in the Bishop Street Community. It can be accessed at Region of Waterloo Public Health's website (directions below).

### TCE Resources on Public Health's Website

To download the TCE fact sheet or other resources about TCE in the Bishop Street Community go to:

[www.regionofwaterloo.ca/ph](http://www.regionofwaterloo.ca/ph)

Under "*Healthy Living & Health Protection*", choose "*Environmental Health*", and then choose "*Environmental Hazards*". Or use the website's search engine by typing in "*Bishop*".

## No TCE Detected in Regional Well P6

Region of Waterloo Water Services has been an active member of the Bishop Street Community inter-governmental team since the outset of the project. Water Services' role is to provide technical input on groundwater monitoring activities and assess any impacts on the Region's water supply.

The drinking water supplied by the Region of Waterloo to area residents is safe and unaffected by the contamination.

The nearest Regional well (P6) is located in the Dumfries Conservation Area, 750 m south east (and not directly down gradient) of the TCE source. P6 is constructed in a deep bedrock aquifer and extracts groundwater from depths of greater than 30 meters. P6 has been monitored on a monthly basis for TCE since August 2005. There have been no detections of TCE in P6. The last sample was taken on November 2<sup>nd</sup>, 2011.

# June 2011 Public Meetings: Remediation Update

Public meetings were held at Fairview Mennonite Home in Cambridge on June 29<sup>th</sup>, 2011 about trichloroethylene (TCE) in the Bishop Street Community. These public meetings were hosted by representatives from Northstar Aerospace and General Electric Canada, who presented updates on environmental remediation in the neighbourhood and took questions from residents. All current residents should have received an invitation to attend.

Government staff who monitor and provide oversight for the remediation process were also in attendance, including Region of Waterloo Public Health, Region of Waterloo Water Services, City of Cambridge, and Ontario Ministry of the Environment.

### Some key points from the meeting were:

- At present, more than 95% of homes have TCE concentrations below the level where mitigation is recommended (i.e. concentrations are less than 5 µg/m<sup>3</sup>).

- Northstar presented a draft update for their Interim Remedial Action Plan (IRAP). This update outlines the work to be completed by Northstar over eighteen months, starting from September 2011. Two priority areas for remediation are under Dyck Park and Bishop Street North. GE also presented on the groundwater remediation work they have been completing at the 610 Bishop Street site.
- The updates from the companies show that TCE concentrations in the groundwater have been reduced significantly. For example, groundwater concentrations of TCE in parts of the residential area have been reduced by 98%.

To learn more about the progress of environmental remediation, contact the Ministry of the Environment (519-826-4262 or toll-free 1-800-265-8658, ext. 4262).

## TCE Research & Government “Action Levels”

Scientific knowledge constantly evolves as new research is conducted to build on what was studied previously. This is especially true for the field of “toxicology”, which explores some of the complicated and subtle affects of chemicals on people. As new research emerges about TCE, toxicologists at the Ministry of the Environment (MOE) carefully review it to understand what it means for the “action levels” we apply to environmental clean-up processes, as in the Bishop Street Community.

For example, the United States Environmental Protection Agency (USEPA) recently released the final version of their toxicological review of TCE

(<http://www.epa.gov/iris/supdocs/0199index.html>).

The MOE reviewed and carefully considered a draft version

of this document in the development of the updated “Vapour Intrusion Target Level” (VITL; see box for definition) for the Bishop Street Community (communicated to residents in early 2010). The MOE has preliminarily reviewed the final USEPA report, and has determined that the science supporting the USEPA’s review is consistent with the science supporting the current MOE

VITL (Vapour Intrusion Target Level) is a screening value used for assessing and managing indoor air quality that has been impacted by the migration of a contaminant from the soil into an overlying building.

VITL and resulting “action levels”. The current indoor air action levels being used for the Bishop Street Community are conservative and protective of human health.

### For more information contact:

Ontario Ministry of the Environment .....	519-826-4262 or toll-free: 1-800-265-8658 ext. 4262
Region of Waterloo Public Health .....	519-883-2008 ext. 3418
Region of Waterloo Water Services.....	519-575-4426
City of Cambridge.....	519-740-4650 ext. 4601
Grand River Conservation Authority .....	519-621-2761

