

Peats Point Drinking Water Source - System Summary

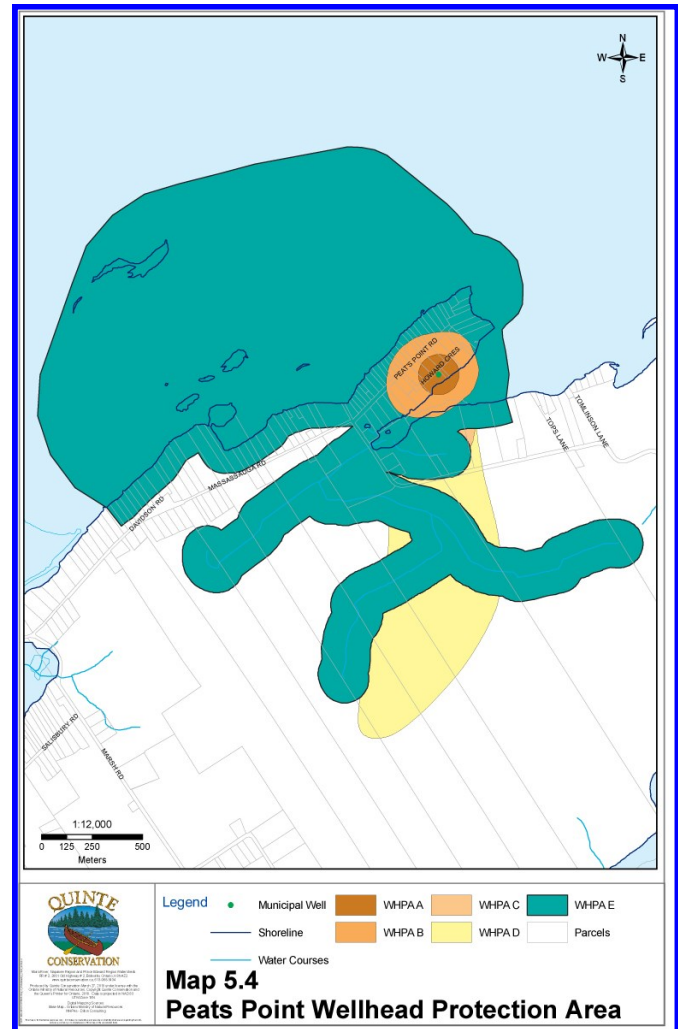
Drinking Water from a Municipal Well

Groundwater is the source of drinking water for the Peats Point subdivision in northern Prince Edward County. The Peats Point water system serves a small residential development (19 residences). Not all residences in the area are connected to the well. The community is located on a point of land extending into the Bay of Quinte that is approximately 800 metres long by 300 metres wide. The well is located on the south side of the point about 40 metres from the Bay. Land use in the area includes residential, open space, and agricultural land to the south. The well was installed in May, 2004 to replace a well that was of substandard construction. The new well was drilled to a depth of 36.9 metres into a fractured limestone aquifer. Water was encountered at approximately 32.8 metres. Given the proximity of this well to the Bay of Quinte it is classified as a GUDI (Groundwater Under the Direct Influence of Surface Water) well which requires the delineation of an additional wellhead protection area. This is the zone where surface water (water in the Bay of Quinte or nearby surface drainage) may influence water quality in the well. Given the location of the well on a point of a land extending into the Bay of Quinte, determination of this zone was completed by projecting the potential groundwater and surface water interaction to three locations encompassing the point. From each location the 2 hour time of travel was delineated to include a 120 metre setback along the shoreline.

Vulnerable Areas

Through the science of the Assessment Report (available at www.quintesourcewater.ca), zones were mapped that show which areas surrounding the well are most vulnerable to pollution and contamination. These are called Wellhead Protection Areas (WHPAs) and include the land above and below ground where land use activities could affect the quality of water flowing toward the well. The location and size of a WHPA is determined in part by the direction the groundwater moves, the speed/rate it moves, and the volume of water that is pumped from the wells. There are five zones of vulnerability:

- **WHPA A** is a 100 metre radius around the well.
 - **WHPA B** is the zone in which it would take a contaminant 2 years or less to reach the well; the two year time of travel zone.
 - **WHPA C** is the 5 year time of travel zone.
 - **WHPA D** is the 25 year time of travel zone.
- WHPA E is defined where a surface water body may influence the well.
- **WHPA E** is the zone in which a contaminant could travel, in 2 hours or less, from a surface water body to the well.



Vulnerability Scores

Vulnerability scores help to quantify how vulnerable the drinking water source is to contamination. Scores are calculated based on the ground conditions around the well, taking into account how contaminants might move. An area with a higher vulnerability score is more likely to allow contaminants from that area to reach the drinking water intake. The vulnerability score of the highest concern is 10. The vulnerability scores for the Peats Point well are: **WHPA A & B = 10, WHPA C = 8, WHPA D = 6, WHPA E = 8.1**

Drinking Water Issues

Drinking water issues are chemicals or bacteria in the untreated water that exceed allowable values. The raw water quality data that represent conditions at the Peats Point well was screened to identify issues in the source water. Using a 4-step screening process it was confirmed that no issues in the raw water exist.

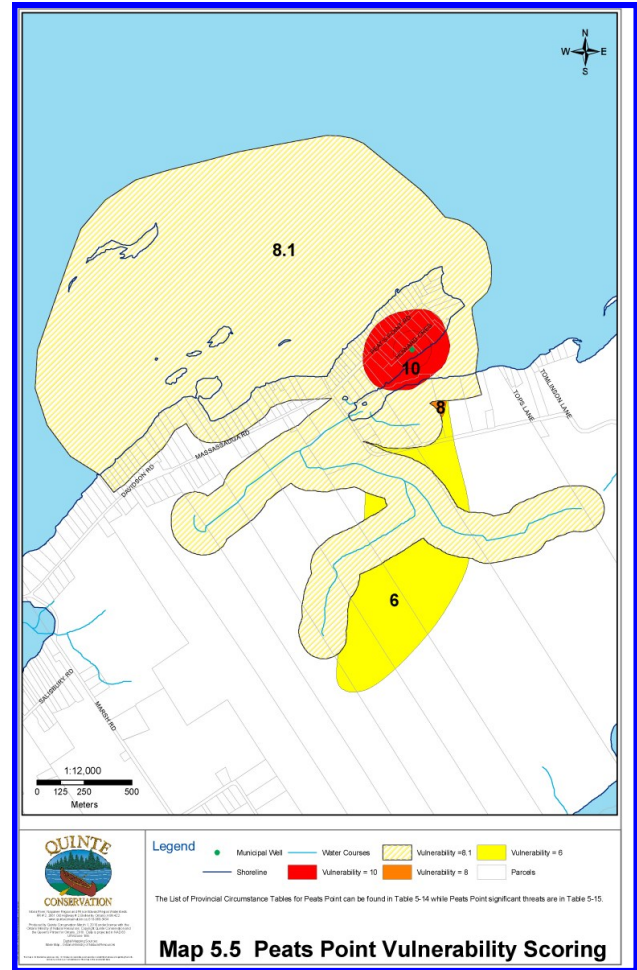
Drinking Water Threats

Threats to the drinking water source within the WHPAs were evaluated. These threats are based on the categories prescribed by the Ministry of the Environment and Climate Change. Threats were inventoried by field observations, air photos and satellite images, existing databases and landowner contact. The threats were then ranked as significant, moderate or low. No significant threats were identified in the WHPAs C and D.

Five significant threat types were identified in the WHPAs A, B and E with 34 parcels of land affected. Identified threat types to the Peats Point well are:

- residential septic systems
- handling and storage of fuels (home heating oil and/or fuel for agriculture)
- application of pesticides to land for areas greater than one hectare
- application of agricultural source material (manure)
- use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard

No threats have been identified based on the presence of any past land uses or pre-existing conditions. Moderate and low threats are shown in tables in the Assessment Report.



Source Protection Plans

The Approved Quinte Region Source Protection Plan includes policies, developed by the Source Protection Committee in consultation with the local community. The 63 policies in the plan address the drinking water threats identified in the science-based Assessment Report. The Assessment Report, identified the vulnerable areas surrounding the 11 municipal drinking water sources in the Quinte Region and ranked the threats as significant, moderate or low.

The source protection planning process is governed by the *Clean Water Act, 2006* and directed and funded by the Ontario Ministry of the Environment and Climate Change. The Quinte Region Source Protection Plan comes into effect January 1, 2015.

For more information, including the complete Assessment Report and the Source Protection Plan, visit:

www.quintesourcewater.ca



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