




INFORMATION REPORT

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	November 17, 2021
SUBJECT/REPORT NO:	Water Well Testing of Properties Surrounding the Waterdown Gardens, 1771 Hwy 5 W., Hamilton (PW21066) (Ward 12) (Outstanding Business List Item)
WARD(S) AFFECTED:	Ward 12
PREPARED BY:	Carmen Vega (905) 546-2424 Ext. 3201
SUBMITTED BY:	Cari Vanderperk Director, Watershed Management Public Works Department
SIGNATURE:	

COUNCIL DIRECTION

At its meeting on April 7, 2021, the General Issues Committee carried the following Notice of Motion:

- (a) That staff be directed to retain the services of a consulting engineering firm to undertake the design and implementation of a sampling and testing program to determine if any contaminants are present in the water wells of properties surrounding the Waterdown Gardens property, located at 1771 Hwy 5 W. in the City of Hamilton, to be funded from the Tax Stabilization Reserve at a cost not exceed \$100,000; and,
- (b) That staff be directed to report back to the General Issues Committee with the results of this sampling and testing program, of the properties surrounding the Waterdown Gardens property, located at 1771 Hwy 5 W. in the City of Hamilton, and to advise of any appropriate actions that may result.

INFORMATION

The City of Hamilton (City) retained Wood Environment & Infrastructure Solutions (Wood) to provide an assessment of the private water wells at properties near

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OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

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Waterdown Garden Supplies Limited (Waterdown Garden) at 1771 Highway 5 West in Troy, Ontario (Site), attached as Appendix "A" to Report PW21066.

An initial Site desktop review was conducted by Wood and identified the characteristics of the surface and groundwater flow. It was determined that the runoff on the Waterdown Garden property appears to be conveyed to the ponds at the northern end of the property and potentially to Barlow Creek. Groundwater in the bedrock (deep) aquifer is inferred to generally flow towards the west while the groundwater flow in the overburden (shallow) aquifer may follow the topography, thus flow towards low areas around stream valleys. Based on the local well records, the bedrock aquifer is protected from surface contaminants by a clay and silt top layer.

Wood distributed a well survey form to 23 properties around the Site. Properties within 500 metres of the Site were selected, as well as properties within one (1) kilometer downgradient of the Site with respect to the estimated groundwater flow direction in bedrock. Responses were received from 12 of the 23 property owners indicating they would like to participate in the well water sampling program. Groundwater samples were then collected from 14 private wells.

Each of the 14 private wells were sampled and tested for the contaminants of concern that were previously identified in the fill at the Waterdown Garden property, which were as follows: boron, cadmium, mercury, zinc, salt (i.e. sodium and chloride), benzo(a)pyrene, petroleum hydrocarbons (F1 to F4, benzene, ethylbenzene, toluene, xylene) and perchloroethene.

The study included 12 bedrock wells (17 to 56 metres deep) and two (2) shallow wells (12 to 13 metres deep). Surveyed residents reported adequate water supply and good water quality from their wells, except high sulphur content in some of the deep bedrock wells. One of the shallow wells was noted by the owner to go dry during prolonged drought. Residents use their well water for domestic and/or livestock purposes, and all reported drinking the water, except the residents of the shallow overburden wells. Most properties have some type of water treatment.

The results of the well water samples collected from the private wells were compared to the following three sets of criteria:

1. Background Site Condition Standards (SCS) of O. Reg. 153/04 represents the natural groundwater quality.
2. Generic Site Condition Standards (SCS) of O. Reg. 153/04 characterizes acceptable groundwater quality in a potable groundwater setting such as the investigation area.
3. Ontario Drinking Water Quality Standards (ODWQS) of O. Reg. 169/03 specifies acceptable drinking water quality. The ODWQS includes maximum acceptable

concentration (MAC) as well as aesthetic objectives (AOs). The MAC and the Generic SCS are health related that if exceeded indicate a risk to human health. The AOs are not health related but rather represent the aesthetic acceptability for human consumption of the water with respect to properties such as colour, odour and taste.

The sampling results indicated that no health-related standards were exceeded for any of the contaminants of concern in any of the collected well water samples. None of the bedrock wells were impacted by the contaminants of concern.

Elevated salt (i.e. sodium and chloride) content was detected in the samples collected from the two (2) shallow overburden wells; however, it cannot be determined if the fill from the Waterdown Garden property is the source of this elevated salt content in shallow groundwater as this may as well be naturally occurring or a result of road salt use along Woodhill Road or another nearby surface source. The elevated zinc content detected in one (1) of the shallow wells seem to be a result of leaching of zinc from the galvanized metal casing.

Therefore, at the time of this assessment, the fill stored at the Waterdown Garden property did not appear to be affecting the groundwater in the bedrock aquifer from which these private wells source their water supply.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PW21066 - "Waterdown Garden Off-site Private Well Assessment", WOOD, Oct 1, 2021