



Harden Environmental Services Ltd.
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Groundwater Studies
Geochemistry
Phase I / II
Regional Flow Studies
Contaminant Investigations
OMB Hearings
Water Quality Sampling
Monitoring
Groundwater Protection
Studies
Groundwater Modelling
Groundwater Mapping

File: 0126

June 27, 2022

Township of Puslinch
7404 Wellington Road 34
Guelph, ON
N1H 6H9

Attention: Glenn Schwendinger
CAO

Dear Mr. Schwendinger:

Re: Permits to Take Water – Maximum 5 Year Duration
Council Resolution 2022-175

The Township of Puslinch Council Resolution 2022-175 requests that Harden Environmental provide justification for requesting that Permits to Take Water issued within the Township of Puslinch have a maximum duration of five years.

It is our opinion that maximum five-year duration permits are justified for PTTW's issued within and near to the Township of Puslinch.

The demand for drinking water from both bedrock and overburden aquifers by the City of Hamilton to the south, the Region of Waterloo to the west and the City of Guelph is increasing. The Region of Waterloo has recently completed the Cambridge East Water Supply Class Environmental Assessment through which additional groundwater will be taken from wells near to the municipal boundary of the Township of Puslinch. The drawdown impacts from these wells extend into the Township thereby requiring the addition of several groundwater monitoring wells to verify the drawdown of aquifer potentials.

The City of Guelph continues to anticipate that additional groundwater resources will be available from the common bedrock aquifer with limited additional impact to the natural environment and private wells in Puslinch Township. One or more environmental assessments are underway by the City of Guelph to confirm this.

The Region of Waterloo and the City of Guelph have relied on groundwater models, that account for existing water taking within the Township of Puslinch, to predict environmental impacts from the increase in water taking. The predictions are that there will be impacts to private wells and reductions in baseflow to cold water fisheries, however, these impacts are either manageable through Well Interference Protocols established by the municipalities or are of limited ecological impact.

The low water table conditions and decreased baseflow effects of droughty conditions as experienced in 2020 and lack of groundwater recharge that occurred in winter of 2020/2021 are exacerbated by the reduction in hydraulic potential in the supporting aquifers. These conditions cannot be anticipated and the combined impacts (natural and anthropogenic) to the natural environment have not been fully evaluated.

The Township of Puslinch continues to monitor ambient groundwater conditions and these observations allow for an impactful technical contribution to new and renewed Permits to Take Water. The maximum five-year duration of Permits to Take Water offer the Township of Puslinch an opportunity to give input to the Ministry of the Environment, Conservation and Parks during the re-application process and thus provide local observations, meaningful requests for monitoring and allows for the re-evaluation of the water taking based on climatic and groundwater potential conditions at that time.

These are some of the justifications for limiting Permit to Take Water durations to a maximum of five years.

Sincerely,
Harden Environmental Services Ltd.

A handwritten signature in blue ink that reads 'Stan Denhoed'.

Stan Denhoed, P.Eng., M.Sc.
Senior Hydrogeologist