



Natural Resources
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Your file Votre référence

Our file Notre référence

Nov. 29, 1996

Mr. Bruce Macgregor
Director, Water and Wastewater
c/o The Regional Municipality of York
Transportation and Works Department
17250 Yonge Street
P.O. Box 147
Newmarket, Ontario
L3Y 6Z1

Re: Long-term water supply for the regional municipality of York --Ground water resources

Dear Mr. Macgregor:

Thank you for providing a copy of the document entitled, Long-term water supply for the regional municipality of York --Ground water resources prepared by Gartner Lee Ltd. We have read the document and wish to offer the following comments.

The conclusions and recommendations of the Gartner Lee review of the Golder (1993) report appear to be appropriate and reasonable. We specifically endorse:

1. The possibility that the use of known, existing groundwater resources (abandoned wells) could be a cost effective source of additional water resources.
2. Additional analysis of the Yonge aquifer(s) would be beneficial to York's water resource planning, particularly if new geological understanding and modeling were combined in this re-analysis.
3. The need to engage in new groundwater searches and testing.

There is a clear need to assess the possibility that substantial groundwater resources may be available within York Region other than the Yonge Street aquifer. Since the long-term plans include moving water within different parts of York Region, the possible use of groundwater resources within the Region is worth considering. This point also emphasizes the value of a long-term systematic exploration program. By starting to explore now for groundwater resources, it may be possible both to secure alternative water supplies to lake-based sources and to avoid or further delay any later expansion of the pipeline to the smaller rural communities.

The analysis of the IWC (1991) modeling report is systematic and thorough. It is clear from this analysis that a more complete model including all the aquifer systems would be beneficial (and probably cost effective) for the management of existing groundwater resources. It is also clear that such an analysis would require a better understanding of the geological structure of the aquifers. Where many water resource strategies are possible including artificial groundwater recharge, improved geologic and numerical groundwater flow models will prove to be essential.

Artificial groundwater recharge (aquifer storage and recovery, ASR) is potentially worth pursuing to maximize the use of water resources that are available within York Region. Although we agree that artificial recharge is a water management approach worth considering, we have concerns that you may wish to discuss, of where groundwater storage may effectively be added to the system.

We also have some comments and questions on: York Region long-term water project-summary report on alternatives. The offer to maintain the pricing of water at current or lower levels over the life of the project is interesting. Does this include the full costs of operating and maintaining the distribution, filtration and pumping systems? Are there different operational cost scenarios for the different pipeline configurations and phasing of these layouts?

The stated intent to take Newmarket and Aurora off groundwater supply, while part of the Region's Official Plan, is still of interest as the overall long term water plan is to maximize the use of all water resource potential in the Region. In light of the conclusion in the Gartner Lee report that substantial additional groundwater potential may be identified, this decision appears to rule out groundwater resources and transfers as part of York's overall plan. Is this the intent of York's plan and policies?

In summary, we would be happy to assist York in additional groundwater evaluation in the near future (next few months), but our budgets for significant collaboration will soon evaporate.

Sincerely,

Dave Sharpe and Marc Hinton
Geological Survey of Canada
601 Booth St
Ottawa, Ontario
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ph: 613-992-3059 (Sharpe); 613-947-7078 (Hinton)
fax: 613-992-0190

cc/ Gartner Lee Ltd
Neil Embree

February 29, 1996

Memo to Karen:
From: Sarah

Re: Groundwater Contacts

Drorothy Izzard of STORM informed me that the Canadian Geological Survey recently addressed King Council on the survey's work on groundwater in the region. I contacted Dr. David Sharpe of the Canadian Geological Survey to discuss his opinion on water supply in the York Region. He advised me that:

.CGS took up ground water studies in the area in 1993 and recently has received approvals to contine their research in the area of the Oak Ridges Moraine.

. it seems that little was done prior to this because at the end of the 1950s responsibility for water was transfered from them to Environment Canada. EC concentrated on surface water and little was done to evaluate groundwater resources in the interim.

. he encouraged me to say that they are finding important ground water potential in the area. He feels there is a real question as to whether the people making the decisions on alternative water supplies for the Region have all the information. He says that in deeper depths in the glacial sediments there is plenty of water "enormous potential" not only in the area of the Oak Ridges Moraine but throughout the Great Lakes. Other interesting asides he said that 97% of available fresh water world-wide is groundwater. He recommend that we speak to David Rudolph at the Groundwater Institute at Waterloo about the Cambridge region and groundwater in general.

. I told him about the report and said that you would be calling him. He is willing to speak with you further, and actually should be able to put you in touch with his US counterparts. Also he expressed interest in helping with maps and illustrations. His numbers are: work (613) 992-3059
fax (613) 992-0190
celluar (613) 794-7645

I sent him our submission to the IJC as a backgrounder as well as our recent open letter.



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SM
RECEIVED NOV 27 1996

of
August 25th, 1996
Dr. D. Sharpe
Natural Resources Canada
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Rm. 394, 601 Booth St.
Ottawa, On.,
K1A 0E8

Golden Associates

SARAH MILLER

Canadian Environmental Law
Association

Dear Sarah

(Sorry for the label)

Please find enclosed the start of a series of products derived from the Geological Survey of Canada's Oak Ridges Moraine Hydrogeology and NATMAP (National Mapping) Program:

**GROUNDWATER PROSPECTS IN THE OAK RIDGES MORaine AREA, SOUTHERN ONTARIO:
APPLICATION OF REGIONAL GEOLOGIC MODELS**

The paper presents a geological model for the glacial deposits of the Oak Ridges Moraine (ORM) area of southern Ontario and its application to targeting new groundwater resources. The model features four main units as well as incised channels. Channels cut into a regional aquitard, provide hydraulic connection between the aquifers of the overlying Oak Ridges Moraine and those of underlying drift. The model, with two successful case studies, has significant implications for groundwater resource development in the Greater Toronto Area. Groundwater flow to the lower drift may occur through channels so that groundwater resources in the lower drift may be more productive than previously suggested. Gravel sequences within channels may be targets for high yield wells. However, further investigations are required to examine buried channel locations, distribution and sediment fill. We are presently planning a regional drilling effort to help test and refine our geological picture.

If you have comments of any nature regarding this paper please send a note or call me at 613 992-3059.

Please find attached a listing of other publications related to the Oak Ridges Moraine work. If you have trouble getting any of these publications please let me know.

I will also be sending out an overview summary of work to date on the ORM study and news of any new map series to be released in the fall.

Sincerely ...

Dave

David Sharpe

D. S. See fax message 3/11/96

Canada