



Thames - Sydenham and Region
c/o Upper Thames River Conservation Authority
1424 Clarke Road, London, ON, N5V 5B9

July 13, 2009

Ministry of the Environment
Environmental Programs Division
Program Planning and Implementation Branch
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Ministry of Natural Resources
Natural Resource Management Division
Lands and Waters Branch
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PO Box 7000
Peterborough, ON K9J 8M5

Attention: Marcia Wallace, Manager

Attention: Sue Jones, Technical Officer,

Re: EBR Posting 010-6516 and 010-6708 - Green Energy Act Regulations

Dear Marcia and Sue,

The Thames-Sydenham and Region Source Protection Committee (SPC) has discussed the proposal to include geothermal systems as part of the proposed regulations under the Green Energy Act. As I am sure that you are aware Source Protection Committees have been established under the Clean Water Act to protect drinking water sources. Their mandate includes considering potential threats to those drinking water sources and developing plans to reduce those risks. While the committee commends the province on this initiative to promote green energy sources such as geothermal systems, it is concerned that if these systems are not properly located and constructed they could pose a considerable threat to the quality and quantity of water that a large number of residents in the region depend upon for their drinking water.

The committee has the following concerns with the Green Energy Act and how it might affect drinking water sources:

- **Geothermal systems require the installation of pathways in the ground which can result in the movement of contaminants into or between aquifers.** These pathways are required to utilize the thermal energy for heating and cooling however they also bypass the natural protection of the aquifers. The rules under the Clean Water Act require the SPC to consider these pathways in assessing the vulnerability of the areas around the municipal wells.

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Preferential pathways such as these can increase the vulnerability of those areas. Many municipalities have implemented policies or bylaws to control the installation of these pathways due to their concern over the safety of their water supplies. It is important that the committees and municipalities are able to control activities in these areas so that they do not become more vulnerable. If the vulnerability of the area is increased, through proliferation of these systems, this will have an impact on existing and future land use in the area.

- **Some types of geothermal systems (closed systems) have a significant potential to introduce contaminants directly into the aquifers.** If the contaminant is one which has the potential to impact the quality of drinking water and is within the area contributing to the municipal wells, this could be considered a significant risk to the systems. This would depend on the types of materials associated with the systems and the proximity to the wells. Though copy of this letter the SPC is suggesting that the Ministry of the Environment consider the construction or operation of a closed geothermal system as an activity which could be considered a risk to drinking water. If MOE does not include this activity in the prescribed list of threats, each committee may have to consider it separately in their region through rule 119.
- **Installation of the in-ground part of these systems needs be completed by competent well installers based on acceptable standards.** The Ministry of the Environment has made significant efforts to ensure that drinking water wells are installed by trained and licensed well installers to standards set in regulation. These same requirements need to apply to the installation of these systems whether they are defined as a well or not. For systems not currently considered wells there are limited standards (such as CSA) in place and the committee is concerned that the those standards which could be applied may not adequately reduce the risks that these systems pose and are not required to be followed. These systems pose the same threat to the aquifers if not properly installed as the wells which withdraw drinking water. As the popularity of these systems increase the in ground portion of these system will be in close proximity to wells posing a pathway not only to that well, but nearby private or municipal system. Even if not located near a drinking water well, there is the potential for the cross-contamination of aquifers by directly connection non-potable aquifers with those which are used as a drinking water source.
- **Section 105 of the Clean Water Act, 2006 indicates that the legislation which offers the greatest protection to drinking water sources is to prevail.** It is important that this protection for drinking water sources remain. It has been reported that the Green Energy Act will prevent municipal planning processes to be used to prevent otherwise beneficial projects due to "not in my backyard" concerns. Those same municipal planning processes will be one of the important tools to be utilized by our SPC in the Source Protection Plans they are developing.

- **The effects of open systems on both the source aquifer and discharge water body/aquifer need to be considered in the approval of these systems.** Both water quantity and quality need to be considered. Single well systems which do not recharge the aquifer need careful consideration of the quantity of water being taken and where the water will be discharged. Some of the systems may well take less water than the minimum which requires a permit to take water, however the cumulative impact needs to be considered in permitting this type of system and the wells associated with them. Approval needs to have proper consideration of the other water use (including municipal residential) and the stress levels in the area (as calculated through the source protection water budgets). The impact on the quality of the receiving water body (both positive and negative) should be considered in the approval. Where there is the potential to affect the water quality of the receiving aquifer or water body through thermal or chemical changes it needs to be considered in its approval. It may not be appropriate to discharge to municipal waste or storm water systems.

While the promotion of these green energy systems is important to the environment it must be done with due regard to protecting other aspects of our environment including our precious drinking water sources. It is important that they be installed in such a manner and in locations where they will not result in increased risks to the province's drinking water sources. Our SPC will be considering these concerns in the development of the science based Source Protection Plans which we have been mandated to create. We would ask that you also give consideration to these concerns in developing the regulations related to the Green Energy Act to ensure that the Source Protection Plans can be effective in reducing risk and preventing any increased risk to the drinking water sources. If you have any questions on these comments please do not hesitate to contact me or Chris Tasker, Source Protection Project Manager.

Yours truly,
Thames-Sydenham and Region

Robert Bedgood, Chair
Source Protection Committee

CT

cc John Gerritson, Minister of the Environment
George Smitherman, Minister of Energy and Infrastructure
Gord Miller, Environmental Commissioner
Ian Smith, Director, Source Protection Planning