



TOWN OF GIBSONS
RESIDENT/STAKEHOLDER UPDATE
PARKLAND DISTRICT ENERGY SYSTEM

June 5, 2017

For the past several months, residents of the Parkland neighbourhood and Town of Gibsons' Council and staff have been in communication, seeking resolution to concerns about the geothermal system that provides energy to the Parkland development in Upper Gibsons. The Town understands that this matter is of interest, not only to those who live in Parkland, but also to other Gibsons residents who contribute through their taxes to the maintenance and improvement of all three of the Town's utilities (water, sewer, and the geothermal system, also known as the Gibsons District Energy Utility or GDEU.) This Council update is intended to provide further information to all Gibsons residents about what occurred to disrupt the GDEU; why it occurred, and its effects; what steps have been taken to date; and next steps the Town is taking to improve it.

The geothermal system experienced a leak of its heat-transfer fluid (80/20 water/ethanol mix) in mid-December 2016, which affected the system's ability to provide heat to several homes in Parkland. The leak, which originally was quite small, dramatically increased before it was located and repaired in mid-January. The amount of fluid lost during the leak included a significant loss of the ethanol additive which provides freeze protection for the fluid, resulting in a drop in concentration from the ideal 20% down to 2%. Pressure in the system also dropped, causing issues for several of the heat exchangers in the homes. In order to avoid freeze-damage to the private heat pumps, homeowners were asked to temporarily turn off the geo supply in mid-February and rely on their back-up heaters while the Town worked to increase the ethanol concentration in the heating fluid. All systems returned to normal operation by the third week of February, although some systems took longer to recover.

The timing was unfortunate, as it coincided with the beginning of the holiday season in the midst of one of the colder winters Gibsons has experienced for some time. As Gibsons is located in a temperate climate and is staffed accordingly, the Town's resources were spread quite thinly due to the winter weather. One of the challenges that many smaller communities such as Gibsons have to plan for is to ensure appropriate staffing and expertise is in place to deal with unexpected events such as this one.

As with all Town utilities, the division of responsibility between residents and the Town is at the property line. However, with the GDEU, there are challenges with this arrangement because of the particular way the Town-owned part of the system (distribution, geo fields and pump house) interacts with and affects the resident-owned portion (the private heat pumps). While most private systems in Parkland were equipped with backup heat such as baseboards, gas fireplaces, and/or backup emergency heat on their heat pumps, the consistency of these alternatives ranged widely in effectiveness and efficiency, and some homeowners were challenged to keep their homes at an acceptable temperature.

The Town has engaged a geo-energy consultant, Altum Engineering, to provide professional support in monitoring system temperatures and performance; identifying any issues to be addressed; recommending actions to Council to improve the reliability and efficiency of the system; and, subject to Council approval, undertaking the necessary improvements. Since the leak was repaired in January, approximately 4,800 litres of ethanol has been added to the system; the geo fields have been flushed to purge any air in the system; and a 2017 improvement program has been proposed. This proposed program includes making changes to system controls to improve the operation of the GDEU; completing several repairs; implementing a leak detection program; installing a natural gas boiler system to provide emergency/backup heating energy to the GDEU during times of high peak demand; and ensuring ongoing professional monitoring and management of the system by a firm with significant background in geo-exchange systems.

It is important to note that this is the first incident in the past five years; although one incident is too many for those directly affected by it, this generally reliable performance indicates that the green energy concept is valid, and worthy of the work entailed in ensuring consistent continuity of service. This will call for effective communication between the Town and the residents, both who are clearly supportive of the green energy concept. To ensure sufficient time and opportunity for solving all issues pertaining to the system's operation before continued expansion and to avoid delays in allowing much-needed housing to be built, the Town has decided not to expand the geothermal system to the next 24 lots of Parkland. While the Town remains confident in the ability of the geothermal system to deliver reliable, cost-effective service to the residents, our priority is to ensure the system is working well, with an appropriate back-up system in place, before continuing to expand the GDEU to service subsequent phases of Parkland.

As a Town, we are committed to continuous improvement for all our utility systems; we are accountable for making the best decisions on behalf of everyone in our community; and we are dedicated to clear, consistent communication with Gibson's residents. We encourage you to visit the Town's website for ongoing updates as work continues on the geothermal system, to attend Council meetings, where decisions are discussed, and to email us with any specific questions you may have.

Yours truly,

TOWN OF GIBSONS



Wayne Rowe
Mayor

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