Steele Springs Waterworks District May 2014

An Open Letter in Request of Help to Reduce Groundwater Pollution

Steele Springs was incorporated as an 'Improvement District' via the Water Act in 1923. The system originally supplied potable water to about 15 houses located on small farms. Now, 58 houses (160 – 170 people) receive water from the original springs. The 8 kilometres of wood stave pipe have been replaced by steel and then by larger PVC so that now, only 1.5 km. remains to have the entire system in larger PVC pipe.

We were grateful to receive a Planning Grant from the Ministry of Community Services in 2011 to defray the cost of a 1.1 km. pipeline installation. And in 2013, we were grateful to receive two grants from the Okanagan Basin Water Board for a Control System and Flow Meter. The control system enabled us to avoid overflowing our reservoir. By so doing, 36,000 more cubic metres of Steele Springs water returns each year to it's natural destination, the Deep Creek/ Okanagan Lake system. The flow meter allows us to measure our water use every day so we can detect leaks, overuse and can report monthly consumption to the B. C. Water Use Reporting Centre.

Our source, the 'Steele Springs', is a group of discharge springs (leaks) from Hullcar Aquifer # 103 that surface in the Steele Springs valley, eventually flowing into the Deep Creek. The static level of the aquifer 103 (unconfined) is approximately 12 – 15 metres below the surface of the farm fields near us. The springs' flow is constant all year round and as such is an important source of fresh water to Deep Creek, especially during the dry months. Two Hydro Geologists have determined that 'the springs' discharge near the top of the aquifer.

In 2007 new dairy buildings were constructed one kilometre from our source and in 2008 a 1,000 cow dairy operation (moved from the Fraser Valley) was begun. The waste handling system is that of a flush barn, manure separation (into solid and liquid portions) and lagoons to hold the liquid portion. The liquid portion is then spread onto nearby crop fields via a pump system, sometimes using a hose reel gun but mostly a tractor with umbilical system.

In April 2009 a letter was sent to the three Jansen brothers (manager/owners of the farm) by the Trustees of Steele Springs. The letter outlined three practices by the dairy farm, all regarding manure management, which contravene the recommendations of the Agricultural Waste Control Regulation (AWCR). The Environmental Farm Plan (EFP) requires these guidelines to be followed. The Jansens to this day boldly display an EVP sign in front of their dairy. A copy of this letter was sent to Spallumcheen Council, two MoE Officers, our MLA, our MP, our local Agriculture Rep., and IHA. Since that time we have kept contact with the spokesperson for the farm and found out that a fertilizer company is managing the EFP. In June of 2009 we (the

Trustees) made a presentation to the council of Spallumcheen. We asked why there are no Municipal Guidelines regarding animal numbers per acre (carrying capacity of the land on the farm) and types of Concentrated Animal Feeding Operations (CAFO) that can be allowed in environmentally sensitive zones, before building permits are issued. We were told by the mayor and council that the 'Right to Farm Act', of the Ministry of Agriculture, super cedes anything that they can recommend or enforce. We have also kept close contact with the MoE, especially regarding nitrate N in our source water and that of nearby domestic wells from 2009 up to the present time.

Until late 2011 the nitrate N in our source water had remained below 2 parts per million. By April 2012 the nitrate N had spiked to 5.2 ppm, remaining in that range until fall of 2013 when it spiked again reaching 10.1 by Mar. 2014. Using tests results conducted on water from over 20 domestic wells situated over the aquifer #103, Ministry of the Environment (MoE) officials determined that the 'plume' of nitrates contaminating our source must be coming from the soil beneath the 300 acre field next to our source and owned mostly by the above mentioned dairy farm.

We were relieved in February 2014 that the MoE Environmental Protection Officer placed a 'Compliance Order' on the farms that manage the 300 acre field. The 'order' states that the farms must follow a strict Nutrient Management Plan as suggested in the EFP, organized and supervised by an impartial Qualified Professional (QP) so that any nutrients applied to the land will meet but not exceed the needs of the crop. The QP has reported that nitrogen (nitrates) were not found in the top 6 inches of soil (corn root zone) but at 24 inches (the lowest tested to date) significant nitrogen was detected. Since nitrate is showing at the 24 inch soil level and is also leaching out into the static level of the aquifer, it is possible that the entire soil column (at least 10 metres) could contain significant nitrates. For this reason, 'healing of the land' may take a long, long time. The last reading on our source taken on May 1st was 10.2 ppm. Thankfully (nitrogen fixing and deeper rooting) alfalfa has been planted this spring instead of corn. We had requested that they plant this type of perennial crop three years ago.

Given the situation just described: Why is there no enforceable guideline <u>from any jurisdiction</u> for new CAFO's on environmentally sensitive land so that this kind of environmental degradation can be reduced or even avoided in the first place? We have said time and again that we support farming and place great value on the use of animal wastes in food production but the risks can be high and the responsibility huge for protection of the environment. Shouldn't the Ministry of Agriculture and the MoE coordinate where a farm operation is considered to be the cause of pollution? Apparently the Environmental Farm Plan soil tests, manure tests and recommendations are confidential to the farmer because he/she pays for it. Is that an adequate reason for it being confidential? What about other potentially polluting

industries? And, the EFP is unenforceable at the present time. The 'new Agricultural Waste Control Regulation', which is planned to be enforceable, is an excellent start but when will it be completed, will it be 'strong enough' to prevent wanton pollution by careless farming practices and will it be strictly enforced? At the present time, we cannot drink the water. The residents within our water district have to consume bottled water or have a reliable reverse osmosis system installed. Now, there are 5 homes for sale in our district. Most of these are owned by elderly people who are hoping to downsize for health reasons. Their property values will be considerably diminished by the pollution of their water source. Will they even be able to sell?

As you can see, we the trustees, are very concerned and are seeking as much information as possible in order to help guide our 'water system' through this dilemma. We understand that certain University/College studies, using modern technology and knowledge, could be done to better understand our nitrate problem. Any help that we can obtain in this regard is much appreciated. For example knowing the source of the nitrate ions (whether animal [bovine etc], plant or inorganic) would be helpful. Also knowing where, in the fields above the aquifer, the nitrates are building up could enable such areas to be isolated from certain waste management practices. Advise on waste management methods that would result in less leaching, such as the flush barn management, separation technology, lagoon management, timing and rate of waste applications is welcomed. Another example is finding the original sources of the aquifer water which, so far, is considered to be mainly from Hullcar Mtn. and also partly from the northern part of the Deep Creek. Any other ideas that could result in information that could help in solving the problem thus outlined are strongly welcomed. It is also our hope that the knowledge gleaned could be used to help prevent or alleviate other potential agricultural pollution incidents in the province.

Respectfully submitted by the Trustees of SSWD

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