

## My Road Back

### Dr. Hans Peterson

I always took pride in having the Safe Drinking Water Foundation (SDWF) in the news, pushing water issues forward both in Canada and elsewhere. A testament to that working can be seen in the number of hits Hans Peterson water generates on a Google search, between four and six million and on Bing some three times that. Internet presence is generated when other websites believe that the information we produce is trustworthy.

In the fall of 2009 I was working on completing an extensive surface water pilot at Saddle Lake, and I was working with a string of other Native communities on drinking water including Yellow Quill, Pasqua, George Gordon, Whitecap, and Mosquito First Nations. I was completing the design of an advanced wastewater pond treatment system for Stanley Mission Cree Nation. On top of this I tried to help the SDWF as much as possible and I was teaching a fledgling water treatment company, Sapphire, the ins and outs of the Integrated Biological and Reverse Osmosis Membrane (IBROM) drinking water treatment system.

All of the above went off without a hitch; Saddle Lake got its IBROM treatment system treating the worst surface water supply Dr. David Schindler has ever seen. With dissolved organic carbon (DOC) levels around 25 mg/L an order of magnitude greater than what RO manufacturers recommend as the maximum DOC levels for RO feed water. The Saddle Lake IBROM plant has not even required membrane cleanings for its now 1.5 years of operation. Pasqua's RO (also IBROM) has not required cleaning since its installation in 2005.



The content of dissolved organic material in Saddle Lake water is so high that during windy days the water is literally becoming like whipped cream. I have never seen this of the magnitude that is happening there.

The IBROM system we developed at Yellow Quill has been recognized by the Indigenous Environmental Network, many federal government agencies, and indeed others as a water treatment system that works on exceedingly poor quality surface and groundwater sources. Water sources for which conventional treatments fail and tight membrane systems (like RO) foul. Our work on the IBROM system was presented at the United Nations in the spring of 2005. There are now several IBROM systems across Saskatchewan including one commercial installation at Dakota Dunes Casino and Resort. The Stanley Mission pond system is producing exceptional quality wastewater giving the community a permit to discharge 365 days a year. All IBROM plants meet Guidelines for Canadian Drinking Water Quality, U.S. and European Drinking Water Quality Regulations as well as WHO Guidelines including minimum levels of calcium and magnesium.

However, before the above came to pass I was plunged into a deep depression which may have been exacerbated by an earlier stroke. One and a half months in the hospital all I could think about was ending my life, but also making it look like an accident. I could not bear the thought that my kids would live with the fact that their Dad had committed suicide. It was dark, really dark where I was.

We set up the SDWF to deal with international water quality problems, but then one day in 1999 an environmental health officer (EHO) drove me to Yellow Quill to see with my own eyes the situation there. The EHO was concerned that Yellow Quill's poor quality drinking water was tied to the ill health in the community. We came to Yellow Quill and met with the water operator Robert Neapetung. When Robert opened the door to the water treatment plant he warned us of the stench of rotten eggs (hydrogen sulphide). We waited for 5 minutes before we dared to go in. I realized that something was amiss. A lot was amiss and I wrote a four page letter to the EHO about immediate and longer term changes that were required.

Ever since that time I have worried about safe drinking water in Canada's Native communities. These worries kept pulling me down as I felt we (SDWF) as an organization and I as its Executive Director had failed Canada's Native population by not being able to get federal agencies to do a better job. For six months everything continued to be dark for me and I have little recollection of actual events and I felt I would never experience another summer no more than I would fly to the moon.

Then one day I was back in Saskatoon and was biking on the dirt trails along the river when I started to count the number of people who now have safe drinking water due to our work, more than 100,000. Up to the start of my illness I had also been on a retainer with Maxit, a company in Oslo, Norway, that manufactures Filtralite material that we have been using in all of the water treatment plants that have been modeled after the first IBROM plant at Yellow Quill.

On behalf of Maxit I have given advice on biological treatment to the biggest water treatment companies in the world. If I add the people that have benefitted from those projects the count

would be in the millions. This knowledge was like a revelation to me and I phoned my daughter from my cell very excited. Her comment was, "Dad that's what we have been telling you all along".

That day my road to recovery started and soon thereafter I began to think about drinking water treatment again, I started to dream about a world that had abandoned expensive and ineffective chemical treatment processes in favour of inexpensive and effective biological treatment.