



Safe Drinking Water Can Be Aligned with Housing Development Strategy

There are too many examples out there of failed alignment between the basic human need for safe drinking water and housing development strategies on First Nations sites. On one extreme are high-density, urban style developments that nobody wants to live in. On the other extreme are contaminated wells and cisterns. According to Jim Bergwall, Sales Manager of Tanks-A-Lot Ltd., an Edmonton-based manufacturer of concrete tanks, “We have supplied thousands of cisterns to First Nations and Metis sites, and there are best practices that can be followed for safe drinking water in cisterns. Better yet, there are development strategies to evolve the community and individual infrastructure towards city grade water safety while preserving culturally desirable housing units.”

Many First Nations sites operate a community water treatment plant and haul water to cisterns at individual home sites. Although contamination of cisterns is not common, the most frequent causes are faulty installation such as failing to sanitize the tank before using it, poor housing construction such as driving an excavator over the top of the tank to finish the landscaping, vandalism such as foreign material being dropped into the tank, and bad water delivery practices such as dirty hoses and filling to the brim of manway extensions. Many communities have considered putting in full pressure water distribution pipes as a way to get rid of water contamination by getting rid of the cisterns. The problem with that idea is the unaffordable cost of constructing pipelines for low density development and the ridiculous waste of constructing pipelines to clustered subdivisions with no homes. “

There is another way,” says Bergwall. “Instead of getting rid of the cisterns, fill them from an affordable low pressure water distribution system and seal them off from the surrounding ground by using a ‘microcrystalline sealant’. Low pressure water distribution pipe is a fraction of the capital and operating cost of full pressure systems. The related cisterns have two brass fittings – one fitting receives the incoming water, controlled by a float valve; the other fitting has the traditional role of connecting the cistern to the home. These systems have been proven out for years in locales such Paddle Prairie Metis Settlement in Northern Alberta and Strathcona County near Edmonton, Alberta.” Although concrete has been a proven material for holding and transferring water for thousands of years, microcrystalline sealants are a new method for filling its microscopic gaps and ensuring that micro size sediments, contaminants, and bacteria cannot penetrate the tank wall. “Tanks-A-Lot has recently introduced a new MC Series of cisterns, complete with two brass fittings and Xypex or Kryton brand microcrystalline sealant mixed right into the concrete. It’s a terrific solution for forward-looking Housing and Infrastructure Directors. You can just plug off one of the brass fittings for now but be completely ready for a low pressure water line in the future. At some sites you could even stub a connection out to the edge of the lot where the future water line would be located.”

The MC Series of cisterns by Tanks-A-Lot are low-profile, one-piece tanks up to 2200 gallons. The low profile means the installation requires shallower excavation – less chance of digging in water saturated soils and less chance of the tank sitting in the water table. The one-piece construction means that no site assembly of the tank is required – less on-site labour and no seams in the tank wall.