

## FAST FACTS



# ALL ABOUT WATER WELLS – PART 1 of 2



### COST TO DRILL A WELL

- On average, \$38 to \$50 per foot for traditional cased well of as 2013.
- Don't forget to add the cost of the submersible pump, wire and pipe from house to well and down well to within 10ft of bottom.
- Trenching costs averages \$85 to \$120 per hour for a backhoe to dig an 8ft trench an average distance of 40 ft per hour.

### HOW TO FIND WATER – 4 Easy Steps

1. **Geological and Ground Water surveys** of your area available from <http://www.ags.gov.ab.ca/groundwater/>
2. **Speak to a Hydrogeologist** for an interpretation and scientific viewpoint as to whether there might be ground water in your area and at what depth on <http://www.ags.gov.ab.ca/publications/pubs.aspx?key=hydrogeology>
3. **Locate All completed Wells in your area** for an overall picture of on depth and flowrates on neighboring wells. All water wells should be registered with the AB Govt and the well drillers log tells you depth, flowrate etc. Have your legal land description ready and go to <http://groundwater.alberta.ca/WaterWells/>
4. **Water Witching** is a non-scientific ancient method of locating water. This method can be used with much success, surprisingly, although you must seek out a well-known successful Dowser in your area for best results. **For you Sceptics Out there**, have two different Witchers dowse your property and see if they choose the same locations. **Dowsing for a Spot** where underground energy streams converge is a likely place to find water. **There are some Natural Indicators** at surface where the streams may be intersecting. Large ant hills tend to be located on energy stream intersections and if you have a particularly large one, it's probably a good place to drill or dowse for water (kind of a drillers secret, hush hush!). Talk to a few local Drillers who know your area well.



### REVITALIZING OLDER WELLS

- **The most common causes of decreased well yield** is Loss of porosity. One big cause is Mineral encrustation i.e. calcium carbonate and iron deposits in liner perforations. Another frequent problem is bacteria biofilm that can clog up your well if not chlorinated regularly. High demand on a well can pull in Sediments from aquifer layer and very quickly decrease a wells yield. A Well should not be pumped higher than its recommended flow rate.
- **To unplug a well**, Hydro-fracturing can be used to open up the aquifer layer and clear out any encrustation located on the perforated liner. A Packer is inserted in to the well (like a cork in a bottle with a straw through it) water is then fed through the packer and driven through the perforations in to the cracks and crevices anywhere from 1000 to 5000 psi. By varying the pressure an oscillating action then cleans out and enlarges the openings encouraging more flow of water.
- **Drilling deeper may be possible** or a simpler fix when wells drop below 5gpm is to install water storage tanks in basement utility room. A minimum of 250 gallons should be an adequate amount of storage capacity for most families. The most versatile tanks we find measure 24 inches wide by 24 inches deep and 5 ft high holding 115 gallons each. Add as many tanks as you require in series to attain desired storage capacity. **Added benefits of Storage Tanks** are better water pressure and volume in house due to high flow submersible pump in holding tank. **Exposing Water to Atmospheric pressure and oxygen** in a non-pressurized environment allows water to precipitate certain dissolved minerals such as iron and manganese resulting in water that is easier to treat. **Dissolved Gases such as Hydrogen Sulfide** (rotten egg smell) can be dissipated and vented to outside atmosphere if tanks are sealed, vented and aerated properly. **Low Flowing Wells** usually produce more sediment which is allowed to settle to the bottom of the first tank in series reducing clogging of pipes, pump and treatment equipment downstream. **Tanks should be cleaned out** and sanitized yearly. **Pumping The Well** below or within its recommended flowrate will increase its longevity.
- **Stay tuned for more FAST FACTS in next months' Issue.**



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