

Drilling a New Well

Here are the things you need to know about and consider when drilling a new well.

Selecting a water well contractor

In Alberta, only a licenced water well contractor who holds a current *Approval to Drill Wells* from Alberta Environment and Protected Areas can drill a water well. To qualify for this approval, a contractor must be a certified journeyman water well driller.

It is important to choose an experienced contractor who has a good reputation, is reliable, competent and has the right equipment to do the job. A list of licenced water well contractors is available through the Alberta Water Well Drilling Association at www.awwda.ca.

Discussing the job

There are certain things you and your contractor should discuss and agree to before starting any drilling. A clear understanding between both parties is crucial to eliminate misunderstandings or false expectations.

Disagreements can arise after a well is completed because time was not taken beforehand to ensure all aspects of the drilling operations were clearly understood.

A written contract can establish an understanding of what your water requirement is, how your well will be designed, what materials will be used in construction of your well and what kind of yield test will be done. It can also provide an itemized estimate of costs, and a guarantee on workmanship and materials for a specified time period.

What are the standards a licenced water well contractor must follow?

In Alberta, contractors are required to follow the standards set out in the Water Wells and Ground Source Heat Exchange Systems Directive and the Water (Ministerial) Regulation of the Water Act, which define well design and construction, disinfection, yield testing, pumping equipment installation and well closure (plugging).

Drilling and construction materials

There are specific requirements in the regulation for the materials used in drilling and construction of wells, including the type of casing, casing diameters and wall thicknesses, drilling fluids, additives and disinfection products. Materials used must be new and meet or exceed Canadian Standards Association or American Society of Testing and Materials specifications and purposes and National Sanitation Foundation Standard 60.

Properly siting a well

There are requirements for properly siting wells. The ground around your well should be sloped to drain away any surface water and prevent ponding around the well casing. Your well should always be accessible for future maintenance, cleaning or repair.

In Alberta, a well cannot be located within 3.25 m of an existing building, except a bona fide pump house that contains only the well and pumping equipment. A well cannot be located inside a pit. There are also minimum setbacks a well can be located from sources of contamination. See the fact sheet *Water Well Design and Construction* for regulated setback distances.

While a licenced water well contractor is expected to follow provincial regulation when drilling and constructing water wells, he cannot guarantee the amount of water or quality of water to be found beneath your property. This will be determined by the local geology.

The Alberta Water Well Information Database website <http://groundwater.alberta.ca/WaterWells/d/> contains a database of water well drilling reports.

Reviewing existing records of wells near your property will not only provide insight into what depth your contractor may have to go to find adequate quantity and quality of water, but also identify any trends in the way wells are completed in your area.

The design of your well will be determined by the geology encountered during drilling, the type of drilling machine your contractor uses, and the contractor's level of experience in drilling and constructing water wells.

Money spent on high quality well design and construction materials is money well invested. A low cost well may not deliver the quality, quantity or reliability you need.

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WELL**

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Developing the well

Once your well is constructed, the contractor should clean it up by removing any fine sediment located on the outside of the screen or perforated casing.

This sediment is created during drilling and should be removed to ensure water can flow freely from the aquifer into the well and reduce the likelihood of pumping any sediment. This development process should be done using the contractor's equipment.

Yield tests

The contractor is also required to do a yield test on your well, which, in Alberta means removing water from the well for a minimum of two hours, at a constant rate, and recording the effect this has on the water level in the well during the water removal period and for two hours afterwards.

This test provides the contractor with data needed to establish a long-term, safe and sustainable pumping rate for your well.

Installing the pumping equipment

It is best to have your licenced water well contractor or a certified plumber install the pumping equipment in your well. Be sure to have the information from the drilling report available so they know the recommended pump intake depth and pumping rate.

The well should be disinfected before considering it complete. Finally, the contractor should provide both you and Alberta Environment and Protected Areas with a Water Well Drilling Report Form which describes, in detail, the well's design, construction and performance capability.



How much water do I really need?

When planning to drill a new well, consider all of your water uses. Look beyond your current needs and consider any changes you may be making in the future that may require more water. For most household situations, a well that produces 2 – 3 imperial gallons per minute (igpm) will be sufficient.

Wells with lower production rates can be used if the water is pumped from the well into a cistern or holding tank. This creates a large enough volume for peak use times rather than relying on pumping directly from the well.

Never pump a well more than the driller's recommended pumping rate or you risk damaging both the well and aquifer.



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FOR MORE INFORMATION:

Working Well
workingwell.alberta.ca

Water Wells That Last
<https://open.alberta.ca/publications/9781460143414>

A comprehensive water well management guide

Alberta Water Well Drilling Association
<https://www.awwda.ca/>

For a list of licenced water well contractors in your area, visit the Association's website.

CONTACT US:

General Questions?
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