

My Well's Gone Dry

A guide to well water problems and maintenance

I need water!

People need water for their home, business, and recreation. More people in Hawke's Bay are using groundwater because there is less river water available in summer when water is most needed. River water quality is also less suitable for drinking.

But groundwater is harder to manage than surface water because we cannot see it. Some things we do know. Most ground water flows from high country to adjacent low country through aquifers. These aren't underground rivers but water moving through cracks in the rock, sand and gravel.

I had water yesterday so where did it go?

When your well that has been reliable for many years stops providing water, you naturally worry. All you are certain of is that the water that came from the tap yesterday is not there today.

Your reaction might be:

- My well's gone dry.
- Neighbour's pumping caused my well to dry.
- New, bigger irrigation wells caused my well to dry.

These can be causes, but are unlikely.

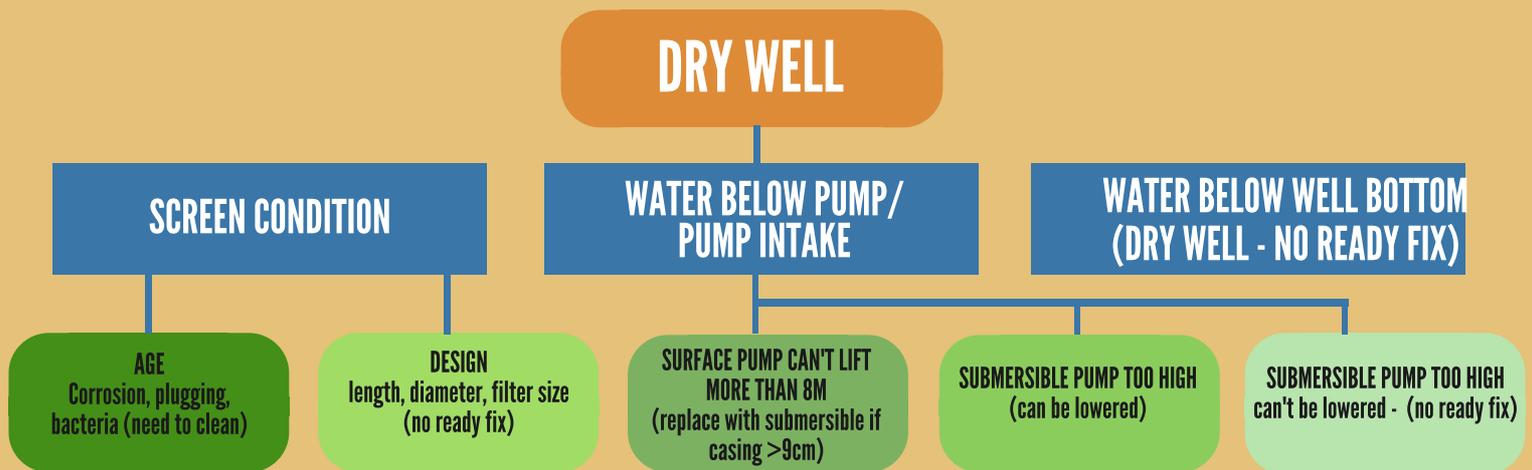
Changes in seasonal water levels

Before irrigation became so developed on Hawke's Bay's plains, people typically drilled domestic or farm wells until these just reached the water – stopping there to save money!

As water levels fluctuate between summer and winter, and between wet and dry years (up to 5 metres), a shallow well drilled many years ago in a wetter year or winter may now be left 'high and dry' in a dry summer. These older wells are not fully penetrating the aquifer and are more likely to have problems in future dry periods than a deeper well.



Common causes of failed wells, from most likely cause (darker green) to least likely (lighter green)



Well & pump maintenance

Wells and pumps require regular maintenance so they keep working efficiently – at least every 5 - 8 years for wells and pumps will be checked at the same time. Most commonly, it's a clogged or corroded screen making it harder to draw water into a well. This results in a much lower water level inside the well than exists outside in the aquifer. This decline inside the well is called the 'well loss' and it increases with well age and screen clogging.

The type of pump installed can also be a factor in a 'dry' well. Surface pumps can only lift water from 5-8 metres depth. Submersible pumps can be used to reach water from greater depths more reliably.

How to fix a well problem

Your well driller is the best to investigate and advise on problems with your bore. Regular maintenance is essential – check out the Q & A below.

There are also practical things you can do to keep an eye on your well's long-term use:

- Measure water level once a year in the same month – or even better, on the first day of spring, summer, autumn, and winter.
- Ensure the pump intake is just above the well screen to allow for maximum water-level decline.

Well Maintenance Q & A

How old is an old well?

In Hawke's Bay, about 25 years; damage on inside of casing will increase and the well may need replacing.

What is well maintenance?

The driller makes sure that the wellhead doesn't leak at the land surface and that the pump works. They can develop the well by blowing out the sediment that is clogging the well screen or pump, or that has settled in the casing.

They will call in an electrician if electrical checks are necessary.

How often is maintenance needed?

You should get a well driller to do maintenance on your well once every 5-8 years and they'll check over your pumps as well. More frequent maintenance is needed for wells in sand, fractured papa or limestone than those in clean gravels, and for wells older than 20 years. Wells older than 25 years likely need replacing.

How much does well maintenance cost?

From approximately \$1500-\$5000 or more if the well is seriously neglected.

How long will maintenance take?

A day, unless there are unforeseen complications.

When's best to do the maintenance?

Obviously it's best to organise your well maintenance or development before summer as that's when you need it most. Winter is impractical, so spring or autumn are best, when drillers are less busy and higher groundwater levels make it easier to work.

Who's Responsible for Groundwater?

Well owner manages their own well:

- maintenance of well and pump
- well depth
- appropriate design (for screen, pump, etc)

Driller acts on behalf of well owner:

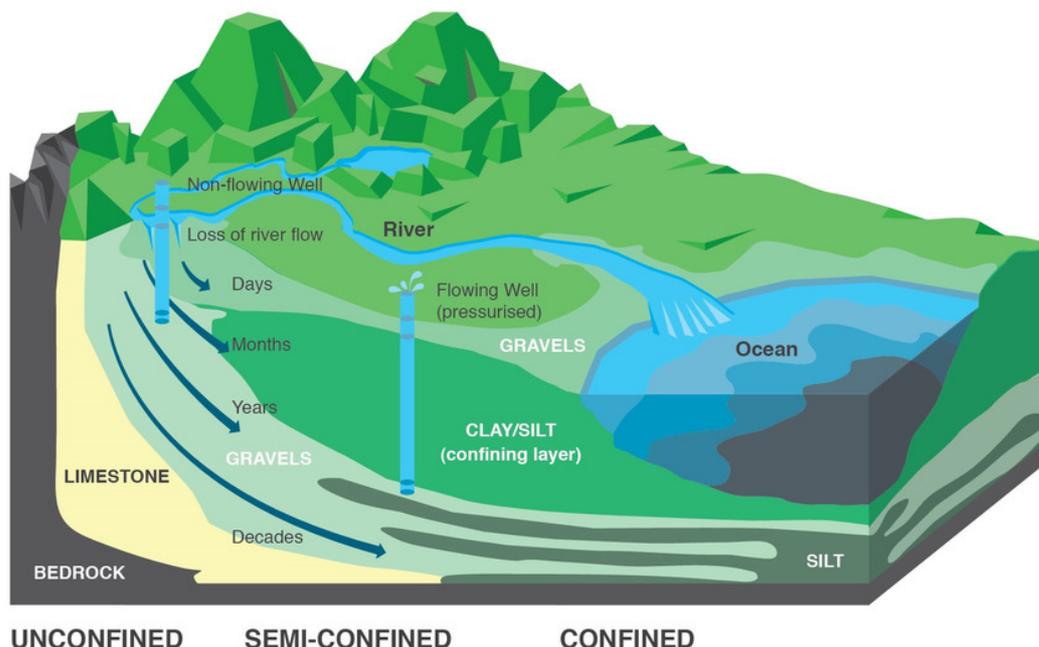
- drills well into the aquifer
- completes well (screen, pump, etc)
- carries out maintenance

Pump supplier acts on behalf of well owner:

- pump supply, advice and maintenance

Hawke's Bay Regional Council manages the aquifers as a resource:

- long-term water availability
- drilling and pumping permits (bore permits)
- resource consents for water takes and legal records
- water meters, managing rollout and monitoring records
- information on aquifer levels and seasonal variations



Cross section of the Heretaunga Plains aquifer

OTHER INFORMATION

There is more information on www.hbrc.govt.nz #watermanagement. Contact HBRC for information and advice on bore permits and water take consents.