

Key points

- Groundwater is sampled each season at a representative network of wells
- Groundwater samples are laboratory tested for a range of common constituents
- The quality of Marlborough's groundwater remains high and has not changed significantly from the 2010 report
- Poor quality groundwater does exist and is caused by both natural processes and human activities
- Ongoing surveying of the quality of groundwater is important because it is used by everyone and can easily be degraded
- Marlborough District Council participated in the 2010 national pesticide survey
- No pesticides were detected in groundwater from any of the 17 Marlborough wells sampled

Why do we monitor?

Groundwater is one of the most valuable natural resources we have in Marlborough. It is the role of the Council to make sure we do not overpump aquifers or allow groundwater to become polluted.

The latest year of sample results show there has not been a significant change in Marlborough's groundwater quality.

Along with testing for the normal range of constituents in groundwater, a focus of 2010 was the national pesticide survey.

This survey is carried out every 4 years and coordinated by the crown research institute ESR. Surveys first began in 1990 and provide a long history of pesticide levels in New Zealand groundwaters.

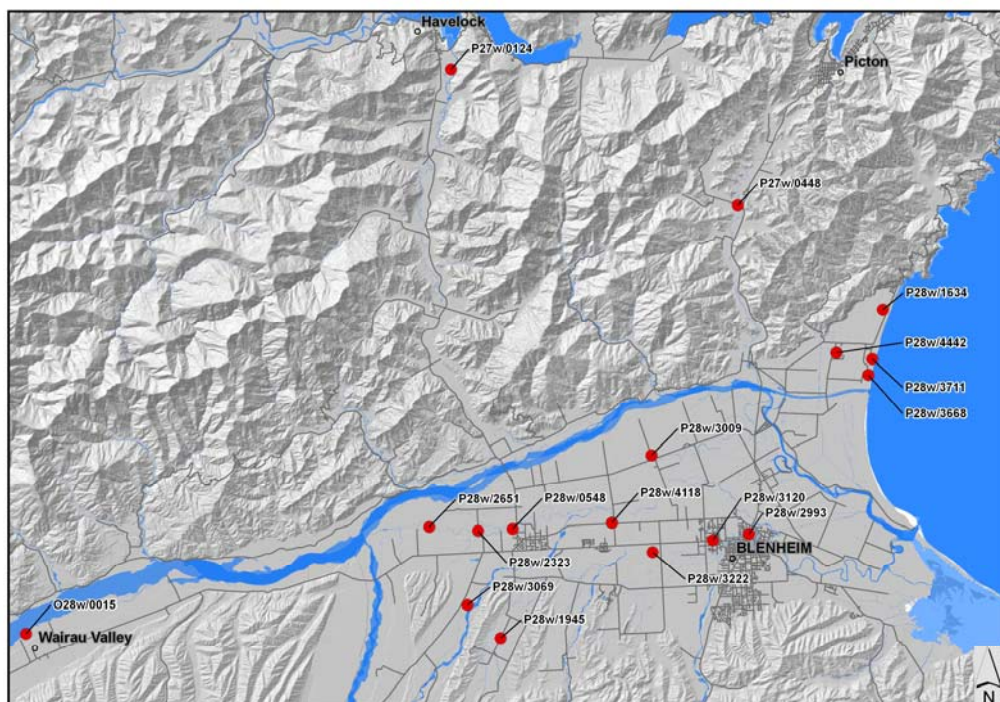
In addition to the national survey, MDC also sample for pesticides at 3 wells each year in case there are short term fluctuations.

The photo shows a sample being taken as part of the national survey from the main Blenheim municipal supply wellfield at Grove Road in spring 2010.



Where do we monitor groundwater pesticide levels?

Pesticide levels in groundwater are measured in the same wells so that Council can track if there are changes with time. The wells chosen represent sites where pesticides are most likely to show up either because they tap vulnerable aquifers, or there is a history of pesticide use.



What are pesticides?

Pesticides are man-made substances used mainly in agriculture for producing food, but also by urban dwellers for controlling pests or weeds.

Not all pesticides have the same environmental effects and some aquifers are more vulnerable to contamination than others.

Pesticide surveys are done less often because the laboratory tests used to measure their concentration are very expensive.

What are the results of the national pesticide survey?

No pesticides were found in groundwater taken from any of the 17 wells sampled across Marlborough district during the 2010 survey.

This is good news but in many cases it may be more of a case of natural dilution by free flowing aquifers than good management.

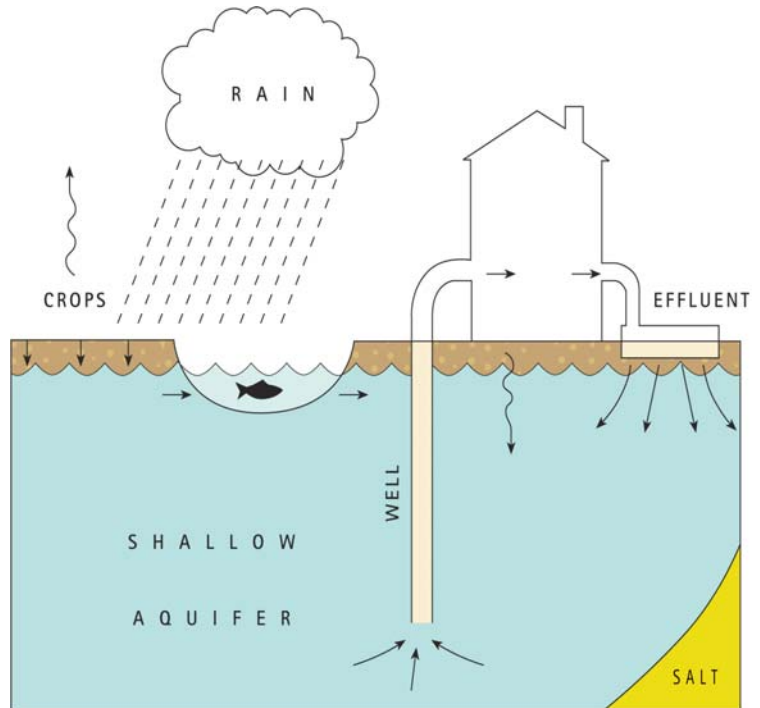
MDC can identify if pesticides exist in groundwater, but by then it is too late. Only landowners can prevent contamination of unconfined aquifers by carrying out good practices on the overlying land.

Of the 162 wells sampled nationally 24% had pesticides detected. Herbicides were the most common pesticide group found followed by insecticides and then fungicides.

The most common herbicides found belonged to the triazine group. It includes the chemical simazine which is less commonly used these days, but stays around in the environment for a long time.

Pesticides were not detected in wells in Bay of Plenty, Marlborough, Canterbury, Taranaki or Hawkes Bay regions. There has probably been a slight decrease in pesticide concentration in groundwater over the past 20 years.

The most vulnerable shallow groundwater resource is the Rarangi Shallow Aquifer. Its sandy makeup and a lack of an organic rich top soil do not provide barriers to pesticides in particular as the photo shows.



What can you do?

If you live or work on land overlying an unconfined aquifer such as at Rapaura or Rarangi, select the pesticide that will not leach to the water table and does not persist for long in the soil or groundwater.

Remember that your drinking water comes from the same aquifer that can potentially be affected by what you do at the land surface.

The potential for cross-contamination is illustrated conceptually by the drawing above showing a slice through the Rarangi Shallow Aquifer.

To read more go to the full ESR report on the MDC website.

Which pesticide is best for your land?

Simple computer programmes have been developed to help landowners select the most suitable pesticide for their soil and aquifer type.

It is called GROWSAFE and you can find it on the web. All you need to do is specify the climate, soil type and the crop you are growing and it will select the best pesticide for your conditions.

Do your part to safeguard our precious aquifers from contamination for the long-term good of all.