



WELLS AND GROUNDWATER

Drilling down to your solutions!

Low Environmental Impact (LEI) are specialists at providing groundwater assessments for water take consenting, resource estimation and contaminant discharge consenting. We can take any project from the initial investigation stage, deal with all local and regional council resource consent requirements and provide tailored solutions to meet your requirements. .

In addition, we can integrate your groundwater take into other requirements such as irrigation design, farm or industrial water supply and farm environment plans (FEP's).

LEI EXPERTISE AND SERVICES

LEI is a specialist science, engineering and environmental engineering company that can procure your water take resource consents, manage the design and detail the operation of your water take, irrigation or dewatering system. We provide a well-rounded and easy to deal with organisation for all your water take needs.

We look to do the right work at the right time to manage expenditure, risks and timelines.

Specific groundwater expertise provided includes:

- Resource Consenting experience to assess project viability and deliver the consent required;
- Aquifer Testing to support any consent application or groundwater assessment required;
- Analysis Software to characterise your groundwater environment, including water levels, flow direction, contaminant pathways, effects on other wells, effects on surface water/streams;
- Equipment to measure groundwater levels for a period up to 6 months if required (can be required as part of conditions of consent) or if you want to know how groundwater is behaving.

The following provides a brief overview of monitoring and compliance requirements.

GROUNDWATER TAKE CONSENTING

You will likely need a water take consent to take groundwater when the amount needed is greater than what the authority will allow as a permitted activity. Most authorities will allow some water without requiring consent and this generally varies between 10 m³ and 100 m³ per day, depending on the region and size of the property. Applying for a consent from regional council will usually require the following effects on the environment and matters to be assessed:

- Is the water reasonably used according to the activity proposed;
- The effects pumping in your bore will have on neighbouring bores (drawdown effects). In some cases, assessing this effect will need an aquifer test;
- Stream depletion effects on nearby stream flow if the proposed bore depth is relatively shallow (<30 m generally);
- Does your proposed take fit within the groundwater zone's allocation and the cumulative effect of that take on the surrounding resource?

These assessments will need to be summarised in a report accompanying the consent application.

AQUIFER TESTING

Aquifer tests are used to determine level lowering effects on nearby bores (dewatering), neighbouring bores or surface water bodies when pumping from the subject bore for seasonal irrigation. Bores are pumped for up to 7 days whilst neighbouring bores are monitored for water level drawdowns. These tests are often required for new water takes, change of well locations, dewatering assessments and wastewater discharge (groundwater mounding assessments). Some things that need to be considered prior to testing are:

- Bore access. Whether your bore and neighbouring bores' water levels can be accessed for measurement;
- Flow rate: can the flow rate be measured instantaneously;
- Discharging the test water: discharge water must not flow back into the aquifer and interfere with the test results; and
- Test predictions prior to testing: will the test result in a successful application? If not, will it be a waste of money? This can be helped by developing a test plan and agreeing the plan with the Regional Council.

SUPPORTING EXPERTISE

We also have expertise in:

- Preparing Farm Environmental Plans;
- Nutrient Management (Overseer modelling);
- Irrigation Design, including pumping, storage, piping and project management;
- Wastewater discharge and stormwater discharge assessments for consenting, particularly land treatment of wastes; and
- 3 Waters infrastructure feasibility, design and project management.

Contact us to scope what is required and provide you with a proposal for your project



