

# Testing

Water, wastewater  
and effluent

Getting the measure  
of your water quality



# ARL is one of New Zealand's leading water, soil, plant and feed analytical laboratories.

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## About ARL

ARL's range of water, wastewater and effluent testing services are designed to assist the agricultural, horticultural and food industries by helping our customers meet regulatory and environmental monitoring requirements. Our service provides accurate information that can be used to help to identify potential problems and solve existing ones.

ARL is a member of the New Zealand Association of Consulting Laboratories and the Australasian Soil and Plant Analytical Council (ASPAC) and an International Accreditation New Zealand (IANZ) accredited laboratory (ISO 17025). We take pride in our modern laboratory, state-of-the-art instrumentation and our ability to deliver fast and reliable results.

## ARL water testing kits

We want to help you get your water sampling right and we're happy to provide water testing kits. In our water kits you will find:

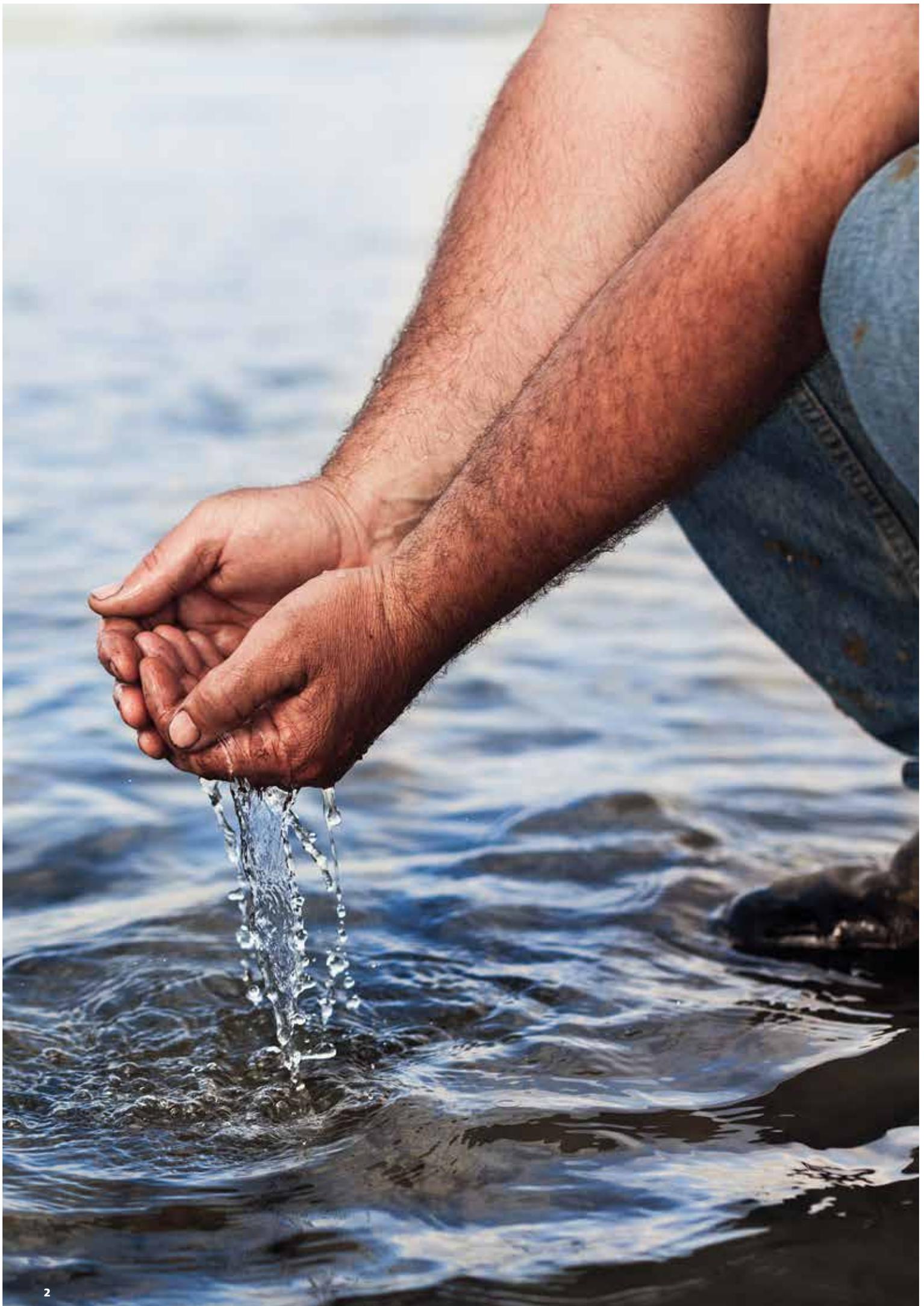
- 1L sample bottle and sterilised bacteria testing sample bottle
- Submission form (with plastic bag)
- Ice bricks (please freeze before taking your water sample)
- Return addressed chilly box



# Test to know

Before you test, take a look through this brochure to make sure you get the best results from your water sample(s)

Water testing	3
Drinking water	4
Raw water	7
Farm Environmental Impact analysis	9
Effluent and trade waste	11
Ready to send	13



# Water testing

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The following water testing suites have been put together to meet the most common test requirements.

WATER TYPE	DESCRIPTION
<b>DRINKING WATER</b> Any water used for human consumption. Test the quality of your water for drinking and household use.	<ul style="list-style-type: none"><li>• Domestic and drinking water analysis</li><li>• Bacteria / microbiological water analysis</li><li>• Turbidity analysis</li><li>• Heavy Metal analysis</li></ul>
<b>RAW WATER</b> Water not being used for human consumption. This includes river / stream water, water used for irrigation and stock purposes as well as spring and rain water prior to treatment.	<ul style="list-style-type: none"><li>• Irrigation / raw water analysis</li><li>• Farm Environmental Impact (FEI) analysis</li></ul>
<b>EFFLUENT AND TRADE WASTE</b>	<ul style="list-style-type: none"><li>• Farm Dairy Effluent (FDE) analysis</li><li>• Trade waste and winery waste analysis</li></ul>

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For a full range of test options and current prices, please visit [ravensdown.co.nz/services/testing](http://ravensdown.co.nz/services/testing), or contact ARL on 0800 100 668.

# Drinking water

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**Domestic and drinking water analysis indicates the safety of your drinking water supply and other household water issues such as hardness and staining.**

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## Why water test?

**Drinking poor quality water can cause illness**, but this can be prevented with an effective water sampling programme. Water testing helps you identify chemical contaminants and allows you to choose the right treatment option to bring household water within the acceptable range for drinking and household use.

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## Domestic and drinking water analysis

Our domestic and drinking water suite is suitable for all water used for human consumption. It enables you to:

- Benchmark your results against current NZ Drinking Water Standards.
- Ensure drinking water safety for health.
- Identify water quality issues.
- Identify hardness of the water.

Analysis includes: pH, calcium, magnesium, potassium, sodium, zinc, manganese, iron, conductivity, total dissolved solids, alkalinity, chloride, hardness, bicarbonate, free carbon dioxide, boron, copper, ammoniacal N, nitrate / nitrite N.

Analysis for Heavy Metals and Turbidity in drinking water is also available.

**Note: To ensure the safety of your drinking water, we recommend a bacteria test should be completed in conjunction with this suite.**

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## Bacteria / microbiological water analysis

**Bacteria in drinking water indicates** contamination of the water supply which can cause illness. In particular, the presence of *E.coli* is generally the result of pollution by faecal matter and makes the water unsuitable for drinking without treatment. This suite:

- Tests for total coliforms and *Escherichia coli* (*E.coli*).
- Helps you comply with conditions of resource consent or food safety requirements.

**Note: Sampling conditions can have a considerable impact on the result of microbiological testing. Please ensure you read the sampling instructions and follow the procedure for bacteria testing.**

**Note: To get a clear understanding of your drinking water, we recommend carrying out a domestic and drinking water analysis in conjunction with this suite.**

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## Drinking Water Standards New Zealand

**ARL is an IANZ accredited lab**, and is registered by the New Zealand Ministry of Health as a Drinking Water Testing Laboratory. ARL is required to forward a copy of any drinking water reports which fall outside of the Maximum Acceptable Value limits to the local Drinking Water Assessor. For more information on the Drinking Water Standards visit the Ministry of Health website (<https://www.health.govt.nz/>) and search for Drinking Water.

Strict guidelines on sampling and storage apply to samples covered by the Drinking Water Standards, please make sure that you follow the sampling instructions and complete all information required on the sample submission form.

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**ENSURE DRINKING WATER SAFETY BY TESTING FOR QUALITY AND BACTERIA.**

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## Sampling instructions for drinking water

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**It is essential to take the samples in the clean containers supplied.** These containers meet our testing requirements and will not impart any contamination to the sample.

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Open the tap to two-thirds pressure and allow the water to run to waste for two to three minutes. Completely fill the 1L container and seal securely.

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Once sampled, wipe the outside of the container dry with a cloth. Ensure the container is watertight, do not send a sample if it is leaking.

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Samples should be kept cool (use chilly box and ice bricks provided) and be delivered to ARL as soon as possible after sampling.

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### Bacteria / microbiological samples

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Samples for bacteria analysis must be supplied in the small sterilised container provided. Remove and discard any plastic lid seal materials to ensure not to contaminate the sample. This container is pre-treated with sodium thiosulphate to counter the effects of any chlorine in the water supply. **Do not remove tablet or rinse container prior to sampling.** Ensure that this container remains sealed until ready for collection of water sample.

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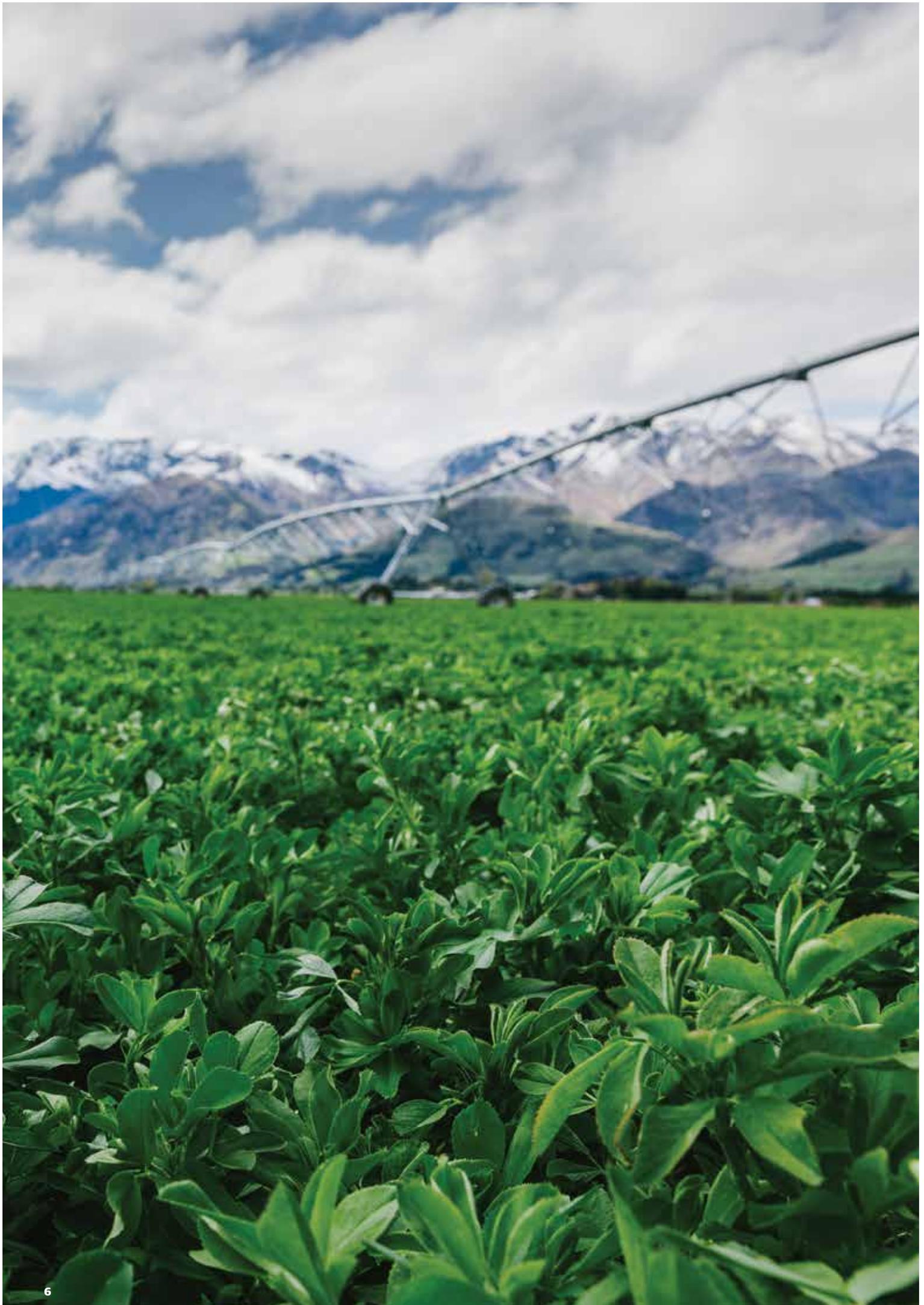
- Turn tap/hose/bore head onto full pressure and let run to waste for approximately five minutes.
  - Reduce to suitable pressure for collection in sterile container.
  - Unseal sterile container, keeping fingers away from the inside lid and rim of the container. The container must not come into contact with the tap/hose/bore head.
  - Fill container to the **100ml marked line**, just below the rim.
  - Local Hawke's Bay customers should deliver bacteria samples to the lab on the same day as sampling, and no later than 3.00pm.
  - Samples taken outside of Hawke's Bay must be couriered the same day they are sampled in the return chilly box with the frozen ice bricks supplied.
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**Do not send samples on a Friday or before a public holiday to ensure they arrive at ARL on a working day.**

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To comply with New Zealand Drinking Water Standards, bacterial analysis must be started no later than 24 hours after collection. Samples must not be frozen and should be received at a temperature no higher than 10°C, or not higher than the temperature of the water being sampled. ARL recommends that samples should be refrigerated straight away to bring them down to temperature and received at the lab as soon as possible.

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# Raw water

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**Raw water analysis indicates the quality of your irrigation water supply, stock water or potential water sources.**

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## Raw water definition

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**Raw water refers to water that is not being used for human consumption.**

This includes river / stream water, water used for irrigation and stock purposes as well as bore, spring and rain water prior to any treatments being applied.

Any water currently used for human consumption falls under the New Zealand Drinking Water Standards and must be tested as drinking / household water.

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## Irrigation / raw water analysis

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The quality of your irrigation water can have a profound influence on your crop production, maturity and quality. To maximise your investment in plants and land, irrigation water supplies should be evaluated before using a new water supply or purchasing a property. This suite:

- Benchmarks against irrigation critical values to optimise crop production.
  - Assesses potential toxicity problems with elements such as chloride and boron.
  - Assesses irrigation water quality for long-term effects such as changes to soil pH and soil degradation through excessive sodium.
  - Determines potential for plant injury from high saline (dissolved salts).
  - Results can be used to identify water quality issues, and when seeking advice on reticulation and treatment options.
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**The raw water test results can also be used to:**

- Test quality of potential drinking water sources, for results which will aid in identification of suitable treatment options.
  - Test stock water to provide results which can be used to identify if there are any potential health issues.
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Analysis includes: pH, calcium, magnesium, potassium, sodium, zinc, manganese, iron, conductivity, total dissolved solids, alkalinity, chloride, hardness, bicarbonate, free carbon dioxide, boron, copper, ammoniacal N, nitrate / nitrite N, sodium absorption ratio.

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## Sampling instructions for raw water

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**It is essential to take the samples in the clean containers supplied.** These containers meet our testing requirements and will not impart any contamination to the sample. Once sampled, wipe the outside of the container dry with a cloth. Ensure the container is watertight, do not send a sample if it is leaking.

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Samples should be kept cool (use chilly box provided) and be delivered to ARL as soon as possible after sampling.

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### Reticulated water - taps, pumps, pipes

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Open the tap to two-thirds pressure and allow the water to run to waste for two to three minutes. Completely fill the container and seal securely.

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### Open water - lakes, rivers, dams

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Carefully submerge and completely fill container before sealing securely.

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### Ground water containing sediment - partially developed

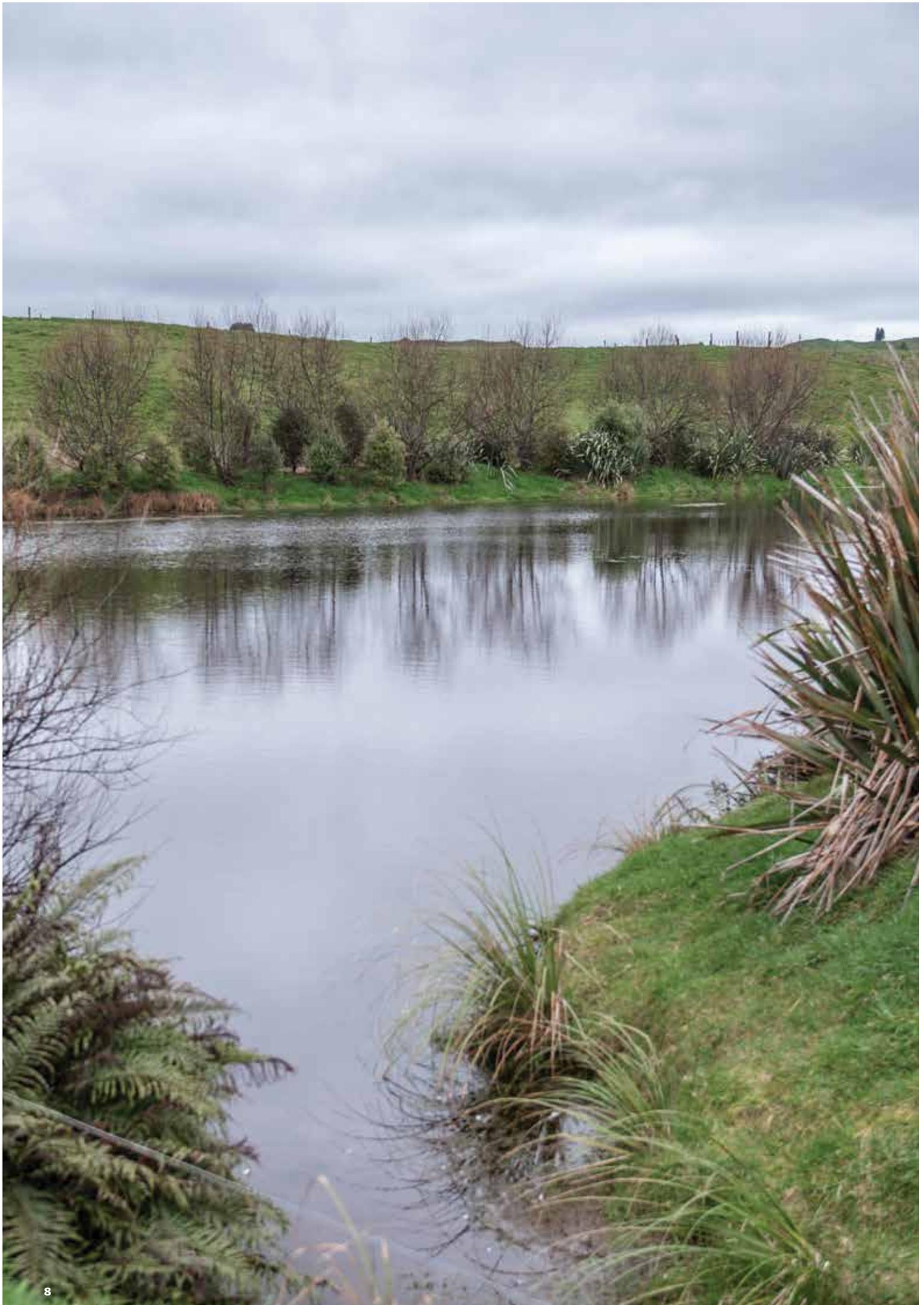
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Samples should be taken using the same procedure as reticulated water above. Results for manganese and iron from partially developed wells or samples that contain sediment will be indicative only. Repeat a full analysis when the supply is fully developed.

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**Do not send samples on a Friday or before a public holiday to ensure they arrive at ARL on a working day. Samples should be kept cool and delivered to ARL as soon as possible.**

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# Farm Environmental Impact (FEI) Analysis

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**Monitor and assess the environmental impact of land use on surrounding waterways.**

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## Waterways

**This programme of testing is designed to quantify** nutrient levels in rivers and waterways over time. These testing suites monitor the main nutrients implicated in nutrient enrichment of water systems to low levels of detection, effectively monitoring any changes in nutrient levels.

Analysis includes: pH, ammoniacal N, nitrate / nitrite N, dissolved reactive P, total coliforms, *E.coli*.

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## Sampling instructions for FEI analysis

**It is essential to take samples in both the 1L bottle and the small, sterilised container supplied.** The small container is pre-treated with sodium thiosulphate to counter the effects of any chlorine in the water supply. **Do not remove tablet or rinse container prior to sampling.** Ensure that this container remains sealed until ready for collection of water sample.

### How to take samples:

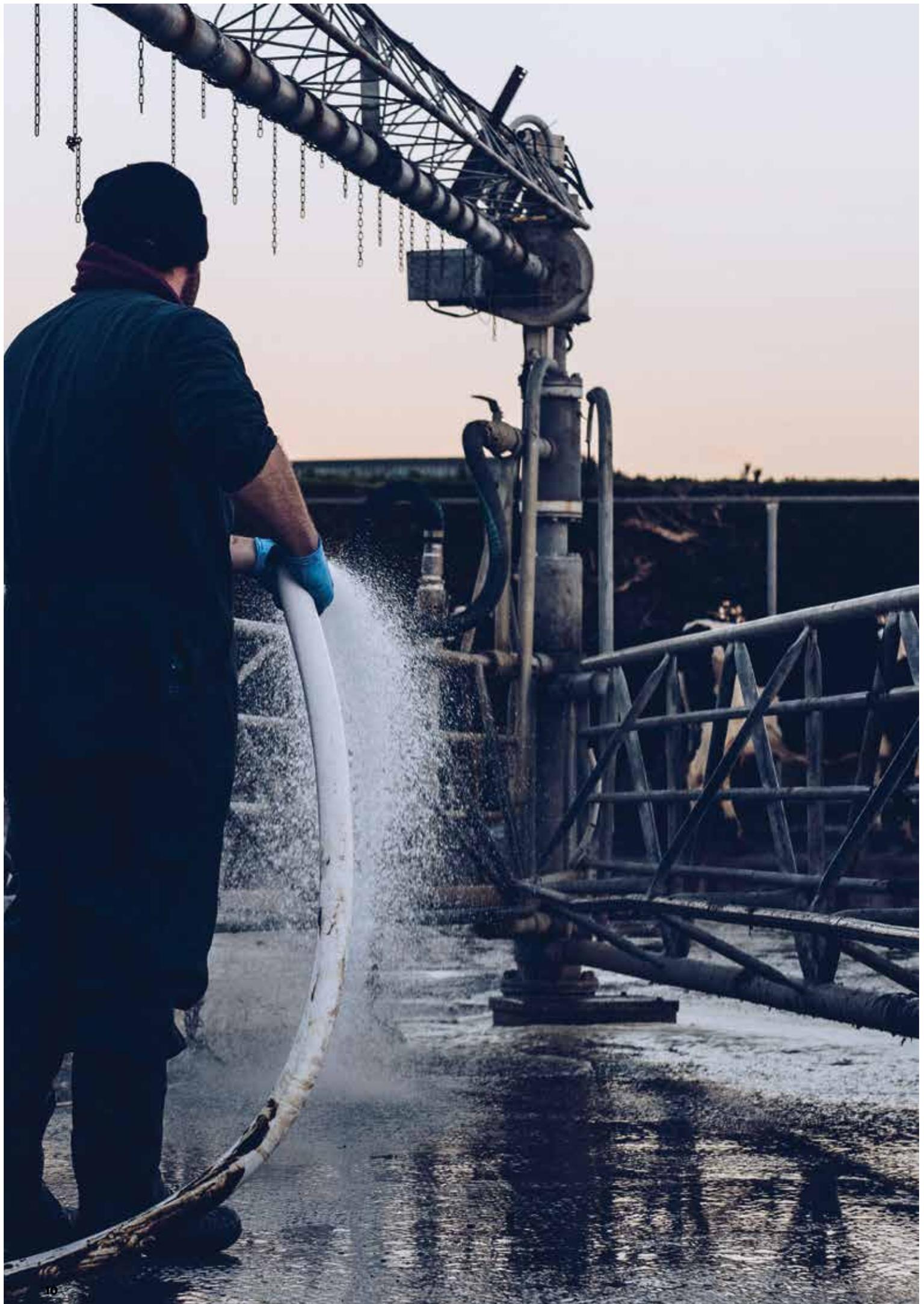
- Try to take the sample from midpoint of the water flow.
- Take the sample from upstream of your position to avoid any disturbed sediment.
- Carefully submerge and completely fill container before sealing securely.
- Fill both the 1L and the 100ml container provided.
- To prevent any possible contamination, be careful to have the water flow into the container without making contact with hands.

Coloured Microbiological samples may need to be subcontracted for analysis.

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To meet APHA requirements, all FEI analysis samples should be received at the laboratory within 24 hours of sampling, and below 10°C. ARL recommends that samples should be refrigerated straight away to bring them down to temperature. Samples must be couriered the same day they are taken in the return chilly box with the frozen ice bricks supplied.

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# Effluent and trade waste

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**Effluent and trade waste suites indicate whether your effluent or trade waste is safe for application or disposal.**

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## Farm Dairy Effluent (FDE)

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**FDE applied back to the land in the correct manner is a valuable fertiliser.**

However, the nutrient value of effluent varies greatly from farm to farm and even within a farm over the season. By testing the concentration of nutrients within the effluent, accurate calculations can be made to determine land application rates.

Mineral content of FDE is likely to peak during September to October. This is the optimum time to sample FDE if you are only sampling once a year, although higher frequency of testing is recommended.

This testing suite provides information to:

- Ensure correct calculation of land area and application rate.
- Ensure land application of effluent is within maximum acceptable rates as recommended by regional councils.

Analysis includes: pH, calcium, magnesium, potassium, sodium, absorption ratio, total N, total P, total S.

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## Sampling instructions for FDE

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### Spray irrigators

To get a representative sample, effluent samples should be taken at the delivery system (spray head). This can easily be done by strategically placing a number of 10L pails to collect the effluent spray throughout a defined time period, such as the whole milking. After milking, collect the 10L pails and combine into one pail to mix effluent. Carefully submerge sampling container into pail and completely fill. Seal sampling container securely.

### Effluent ponds

Carefully submerge and completely fill container before sealing securely.

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## Trade waste and winery waste testing

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ARL offer a range of testing suites designed to meet the requirements of most councils for discharging trade waste.

Trade waste analysis includes: pH, CBOD, total grease, settleable solids, total suspended solids.

Winery trade waste analysis includes: pH, BOD, Ca, Mg, Na, sodium absorption ratio, total N (TKN + NO<sub>3</sub>), total P, total suspended solids, total dissolved solids.

If you would like more information, or have specific testing requests, please contact ARL for more information.

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## Sampling instructions for trade waste and winery waste

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**It is recommended to take the samples in the clean containers supplied.**

Sometimes particular sampling containers are required for a trade waste test. Contact us to make sure you have the right container and for specific sampling information. Once sampled, wipe the container dry with a cloth. Ensure the container is watertight. Do not send a sample if it is leaking.

Samples should be kept cool (use chilly box provided) and be delivered to ARL as soon as possible after sampling.

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**Do not send samples on a Friday or before a public holiday to ensure they arrive at ARL on a working day.**



# Ready to send?

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Follow these simple steps for sending your water samples.

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**1. Take your samples**, according to the relevant sampling instructions for your test requirements.

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**2. Fill out the details on the submission form for your sample type.**

- Your name and contact details.
  - Sample information (including time and date sampled).
  - Select the tests required.
  - Seal the form in the plastic bag to avoid water damage.
  - Sign to confirm you have read and understood ARL's Terms of Engagement.
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**3. Place your samples**, the frozen ice bricks and submission form into the return-addressed chilly box and tape the lid down. Deliver the samples straight to the ARL Laboratory or drop off at your nearest courier post depot for overnight delivery to the lab.

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## IMPORTANT

**Keep samples in the fridge until they are ready to be sent to the lab.**

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Your results will be available within ten working days of receipt at ARL.

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**Samples should be delivered to the lab as soon as possible.**

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**Do not send samples on a Friday or before a public holiday to ensure they arrive at ARL on a working day.**

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## What are my payment options?

If you are a Ravensdown customer, your ARL testing can be charged to your Ravensdown credit account. Ravensdown shareholders receive a 10% discount on all ARL testing.

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### Direct debit

To arrange payment by direct debit, complete both the direct debit form and sample submission form enclosed and send them with your sample(s). Please sign both forms to confirm that you have read and understood the payment terms and ARL Terms of Engagement.

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### Eftpos

Eftpos facilities are available at reception for customers that bring their samples direct to the laboratory.

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### Credit Card

We are unable to accept credit cards.

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## Here to help

For any enquiries, call us on 0800 100 668 or email [arl.lab@ravensdown.co.nz](mailto:arl.lab@ravensdown.co.nz)

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ARL is located at 890 Waitangi Road  
PO Box 989, Awatoto, Napier

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**0800 100 668**  
**arllab.co.nz**



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