

SEPTEMBER 2017

Ashford Park

Water Sampling Plan



1.0 CONTACT DETAILS

Nicholas Weekes [GBC Winstone Kapiti Quarries Manager]

- +64 27 547 6495
- Nicholas.Weekes @gbcwinstone.co.nz

1.1 BACKGROUND

Resource consents were granted in 2016 to Winstone by Greater Wellington Regional Council (“GWRC”) and Kapiti Coast District Council (“KDCDC”) for the operation of a gravel quarry at 61-67 Te Roto Road, Otaki (“Ashford Park Quarry”). Under those consents water sampling is required to be undertaken for the duration of the quarry operation. These samples relate to both groundwater and surface water.

While sampling of bore water will be undertaken by laboratory staff, surface water samples may on occasion be taken by approved site staff members and then delivered to a certified laboratory for analysis.

1.2 PURPOSE

The purpose of this Water Sampling Plan (“Plan”) is to detail the correct surface water sampling process to ensure that the samples received at the laboratory are representative of the site that has been sampled.

This Plan is not intended to cover the taking of groundwater samples, which will be taken by external laboratory staff in accordance with the Groundwater Sampling Protocol for NZ¹.

1.3 SAMPLING PRINCIPLES

- The location where the sample is taken could impact on results.
- The way a sample is taken could impact on results.
- Suitable sample containers are crucial and certain tests require special preservatives.
- The size of the sample is important.
- The type of sample may change the way it should be handled.
- Certain compounds are likely to change more rapidly than others.
- The sample should be kept chilled and out of the sun.
- Each sample must be clearly labelled.
- Delivery to the laboratory must be within certain timeframes.

¹ <https://www.mfe.govt.nz/sites/default/files/national-protocol-groundwater-dec06-updated.pdf>

1.4 SAMPLE CONTAINERS

For **Microbiological Analysis** (e.g. E Coli), a sterile container must be used. These bottles must be obtained from GBC Winstone's contracted laboratory.

For **Chemical Analysis** (e.g. metals, hydrocarbons) new plastic or polythene containers should be used for sampling unless otherwise advised.

There are situations where immediate preservation on sampling is recommended. This applies specifically when analysis is required for the following:

- Cyanides
- Dissolved oxygen
- Sulphides
- Metal species
- Oil & Grease
- Phenols

1.5 TAKING THE SAMPLE

GENERAL GUIDELINES

Microbiological Analysis:

- Keep the sample container closed until it is to be filled.
- Do not place the container lid down on any surface as this may contaminate the sample.
- Avoid contact between the neck of the bottle and the outside surface of the tap.
- Avoid touching the inside of the bottle and lid.
- Do not rinse the bottle.
- Take at least 500 mL of sample.
- Leave sufficient air-space in the bottle (at least 2.5 cm) to allow mixing by shaking.

Chemical Analysis:

The container should be filled to the brim without overflowing. The sample should then be chilled to between 2°C and 8°C (NOT frozen) and dispatched immediately.

One (1) Litre of sample will usually be sufficient for most analysis.

SPECIFIC SURFACE WATER GUIDELINES

- Hold the bottle in the hand near its base.
- Plunge the bottle neck downward below the surface.
- Turn the bottle until the neck points slightly upward and the mouth is directed toward the current.
- If there is no current, create a current artificially by pushing the bottle forward horizontally in a direction away from the hand.

If it is not possible to collect the sample in this way:

- Attach a weight to the base of the bottle and lower it into the water

Note: Take care to avoid contact with the bank or stream bed as this may cause fouling of the water and sample.

1.6 LABELLING THE SAMPLE & COMPLETING THE SUBMISSION FORM

Ensure that the samples are clearly labelled with:

- The sample identification
- The time of sampling
- The name of the sampler

This information should also be completed on the submission form – it is especially required for samples collected for regulatory purposes e.g. NZ Drinking Water Standards, testing under the Meat Act 1981 etc.

It also assists future analysis if the staff member can provide the laboratory with any additional information about the sample e.g.:

- The sample has been sent to determine compliance with a resource consent.
- The exact location at a waterbody where the sample was taken.
- The temperature of the water at time of sampling was (for example) 18°C
- This is especially relevant if the temperature of the sample upon receipt at the Laboratory is above 10°C and there has not been time to cool the sample adequately i.e. the sample has been taken within the last 30 minutes.

Put the submission form in a plastic bag and send it with the samples.

1.7 PACKAGING & TRANSPORTATION OF THE SAMPLES

Pack the samples into a chilly bin as soon as possible. It is important that samples for Microbiological analysis arrive at the Laboratory so that testing can commence within 24 hours of sampling. The sample temperature should be less than 10°C, so that there is no possibility of further bacterial growth or decline in numbers. Samples that require microbiological analysis should not be frozen.

Where possible, use freezer pads (or similar) – it is preferable not to use loose ice or dry ice as this may lead to contamination of the samples.

Seal the chilly bin to prevent tampering during transport.