

Resource Consent

Application Form 9A

To construct or alter a bore



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Private Bag 1954
Dunedin 9054

☎ 0800 474 082

www.orc.govt.nz

For office use only

Consent No

Job No

Important notes for the applicant

You must complete this application form 9A and Resource Consent Application Form 1 in full.

It is crucial that you provide as much relevant information as possible with your application and in an understandable way. This will help ORC staff process it efficiently, and at the minimum cost.

If all the necessary information is not supplied in or with the application then it will be returned with a request for further information, or it will be publicly notified. This will lead to delays in processing and may increase processing costs.

Depending on the location, quantity and intended use of the groundwater to be taken from the bore, you may require a separate Water Permit to take and use water from the Otago Regional Council. If you need a water permit please refer to the aquifer testing requirements attached to this form.

When siting your bore you should consider the location in terms of compliance with the rules permitting abstraction in the *Regional Plan: Water for Otago*. You should also consider any effects **on water levels in neighbouring bores, allocation availability within the aquifer, and potential stream depletion effects**. Such effects may influence the likelihood of obtaining a resource consent to take groundwater at the volume you request.

If you have any questions contact the duty resource officer on 0800 474 082.

This application form, when properly completed, should provide an adequate "Assessment of Effects on the Environment" (AEE) as required by the Resource Management Act. However, this can only be determined on application.

Disclaimer It is the applicant's responsibility to ensure that:

the bore is suitable for the purpose required;

the bore will penetrate water-bearing material;

the consent holder will have physical access to any water in the bore;

the consent holder will be legally able to take water; and

any future taking of water will not have adverse effects on other users or the environment.

The granting of a resource consent - to make, alter or install a bore does not guarantee or imply any of the above-mentioned points.

Part A Property owner's contact details

A.1 This form is for (tick which applies)

a new bore; or to alter an existing bore?

A.2 Property owner's name and address for where the bore will be constructed/alterred (if different from applicant details in Form 1)

Property owner's contact numbers for property on which bore is to be constructed/alterred

Home phone

Work phone

Email

Mobile

Preferred method of contact (please circle) Home Work Email Mobile

Part A Property occupier's contact details (continued)

A.3 Property occupier's name and address for land on which bore is to be constructed/altered (if different from applicant and owner details)

Property occupier's contact numbers for the land on which bore is to be constructed/altered

Home phone Work phone

Email Mobile

Preferred method of contact (*please circle*) Home Work Email Mobile

A.4 Name and address of driller or person carrying out the works

Contact numbers for driller or person carrying out the works

Home phone Work phone

Email Mobile

Preferred method of contact (*please circle*) Home Work Email Mobile

Part B Location of the proposed bore construction or alteration

B.1 Full legal description of site upon which the bore construction or alteration is to occur (available from the rates notice)

B.2 Please provide a Certificate of Title no older than three months at the time of lodging the application. If this is not supplied with your application the council will obtain one at your expense.

B.3 Map location reference

Please provide a grid reference or GPS location in NZTM (New Zealand Transverse Mercator projection) 2000 format. Conversions from other reference systems such as NZMS 260 can be found on www.LINZ.govt.nz

E N

E N

E N

E N

E N

NOTE This should be two seven digit numbers for example E1304417, N5015351 and can be obtained from your driller or a GPS.

B.4 Distance to property boundaries

What is the minimum distance from the bore site to the property boundary

We recommend you consult with your neighbour if the proposed bore site is near your property boundary. If the bore is to be located within 50 metres of your property boundary explain the reasons for this.

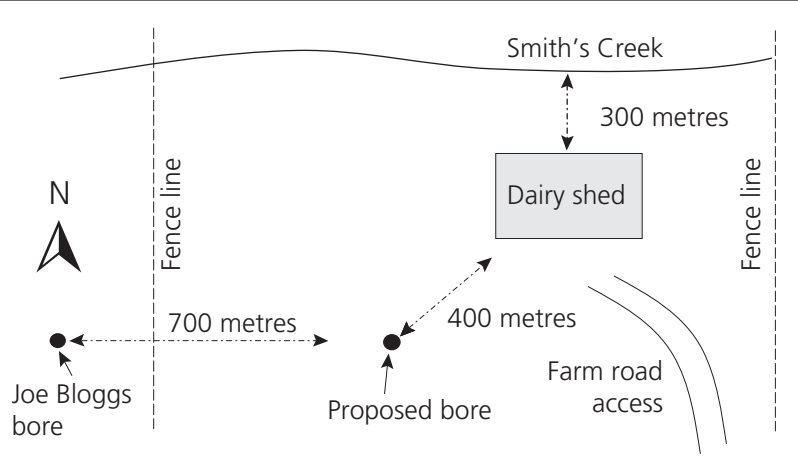
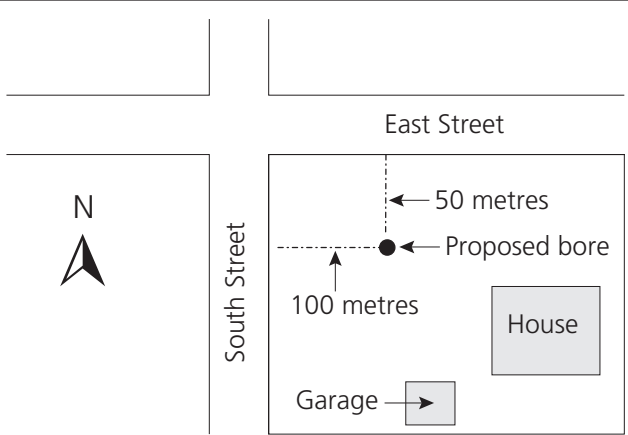
B.5 Detailed site plan

A detailed site plan is required. Use the space on this form to complete a site plan showing the location of your proposed bore in relation to nearby houses, driveways, streets, intersections, springs, waterways, and property boundaries. If possible also show other bores, septic tanks, and waste disposal sites.

Two examples of acceptable drawings are shown below to guide people submitting their own hand drawn plan.

Example of residential type

Example of farm type



Site plan for proposed bore



Part C Details of proposed activity

C.1 Number of bores associated with this proposed drilling?

C.2 What is the bore to be used for?

Domestic (1 house only)

Domestic - more than 1 house

How many houses

Stock

Irrigation

Industrial / Commercial

Exploratory

Other, provide details

C.3 What quantity of water do you propose to take, and what rate will water be taken?

Maximum rate of take litres per second

Maximum daily volume cubic metres per day

C.4. If more than one hole is being drilled to construct one or more bores, provide the following details for the additional bores on a separate sheet.

Bore 1

Bore diameter (mm)

Estimated bore depth (m)

Estimated casing depth (m)

Casing material
(if PVC, state grade)

Aquifer

Method of drilling

Method of construction

Bore 2

Bore diameter (mm)

Estimated bore depth (m)

Estimated casing depth (m)

Casing material
(if PVC, state grade)

Aquifer

Method of drilling

Method of construction

Existing bore

Existing bore consent number

Bore diameter (mm)

Estimated bore depth (m)

Estimated casing depth (m)

Casing material (if PVC, state grade)

Aquifer

Method of drilling

Method of construction

Altered bore information

Bore diameter (mm)

Estimated bore depth (m)

Estimated casing depth (m)

Casing material (if PVC, state grade)

Aquifer

Method of drilling

Method of construction

Part D Affected parties and written approvals

If you are not the owner of the land upon which the bore is to be constructed (altered), written approval is required from all parties who own the land as shown on the Certificate of Title.

If written approval is required, use the written approval forms contained within Form 1. Supply these at the time of lodging your application to reduce delays in consent processing and to keep costs to a minimum.

Part E Assessment of actual and potential effects

Tick appropriate boxes. Ask your driller if you are unsure.

- E.1** Is the proposed activity within 50 metres of a known contaminated site? Yes No
- E.2** Is the proposed activity within 100 metres of any existing bores on neighbouring properties? Yes No
- E.3** Is the activity within 50 metres of any existing septic tank/outfall or long drop toilet? Yes No
- E.4** Are there any surface water bodies within 100 metres of the proposed bore? Yes No
- E.5** Is the proposed bore likely to penetrate either the Papakaio or Lower Taieri Aquifers? Yes No
- E.6** Is the proposed activity located in an historical place, recorded archaeological site, or in an area of cultural or spiritual significance to Tangata Whenua? Yes No

E.7 Provide details of neighbouring bores or wells identified in E.2 above

Owner's name	Bore number	Distance (m)	Depth of bore (m)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

E.8 Provide details of septic tank/outfall or long drop toilets identified in E.3 above

Owner's name	Distance (m)
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

E.9 Distance to surface water bodies within 100 metres of the proposed bore identified in E.4 above

Surface Water Body	Distance (m)
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

E.10 Distance to the coast if less than 50 metres

PART F Deposit

A deposit is required upon lodgement of your application. Refer to the fees list on Form 1. This deposit is not the final or total cost of your application. Further charges are incurred in accordance with council's scale of fees and charges (for more information www.orc.govt.nz).

Deposit enclosed Yes No \$

PART G Checklist

To minimise consent processing costs check that you have completed all the sections below before you lodge your application with the Otago Regional Council.

- | | |
|--|--|
| <input type="checkbox"/> Completed Form 1 | <input type="checkbox"/> Sign and date Form 1 |
| <input type="checkbox"/> Completed all parts of this form | <input type="checkbox"/> Attached Certificate of Title less than three months old |
| <input type="checkbox"/> Written approvals completed or attached | or |
| <input type="checkbox"/> Include a site plan | <input type="checkbox"/> Instruct council to obtain a Certificate of Title at your expense |
| <input type="checkbox"/> Include the deposit | |

PART H Statutory considerations

The relevant policies of the Otago Regional Policy Statement, and the Regional Plan Water for Otago for the construction and alteration of bores within the region are listed below. The Otago Regional Council must assess the application against these policies.

Regional Policy Statement

- Policy 5.5.5 To minimise the adverse effects of landuse activities on the quality and quantity of Otago's water resource through promoting and encouraging and*
- (a). Creation, retention and where practicable enhancement of riparian margins; and*
 - (b). Maintaining and where practicable enhancing, vegetation cover, upland bogs and wetlands to safeguard land and water values; and*
 - (c). Avoiding, remedying or mitigating the degradation of groundwater and surface water resources caused by the introduction of contaminants in the form of chemicals, nutrients and sediments resulting from landuse activities.*
- Policy 6.4.2 To maintain and enhance the quality of Otago's water resources in order to meet the present and reasonably foreseeable needs of Otago's communities.*

H.1 Is the proposed activity consistent with part Policy 5.5.5 and Policy 6.4.2?

- Yes No

Explanation if no

Regional Plan Water for Otago

- Policy 9.4.14* To require appropriate siting, construction and operation of new groundwater bores, to prevent (a) Contaminants from entering an aquifer; and (b) The contamination of groundwater in any aquifer from the groundwater in another aquifer; and to promote such management for existing bores.
- Policy 6.4.10C* To require appropriate siting, construction and operation of new groundwater bores, to maintain artesian pressure in confined conditions and to promote such management for existing bores.
- Policy 6.4.10D* To require that new bores in the Papakaio and Lower Taieri Aquifers are constructed of materials suitable to resist corrosion and in a manner that enables their complete shutdown.
- Policy 6.4.10E* Unless provision has been made to permanently decommission and seal the bore, to require the structural condition and control mechanisms of all existing bores in the Papakaio and Lower Taieri Aquifers to be certified as being secure against uncontrolled artesian discharge at no more than five yearly intervals.

In situations where more than one hole is drilled but only one bore is constructed, this policy also applies

- Policy 9.4.17* To require new drill holes to be appropriately sealed to prevent contaminants entering any aquifer.

H.2 Is the proposed activity consistent with Policies 9.4.14, 6.4.10C, 6.4.10D, 6.4.10E and where relevant 9.4.17?

Yes No

Explanation if no

1. Why do I have to do an aquifer test?

Aquifer tests are required by the Otago Regional Council as part of the information requirements for a resource consent application to take and use groundwater. This information sheet outlines the Otago Regional Council's minimum aquifer test requirements to support resource consent applications. Aquifer tests are required for two reasons. First to demonstrate that you can actually take the amount of water you are seeking and second for information on aquifer parameters which are used to assess the potential effects of the proposed take.

2. What is an aquifer test?

Aquifer tests consist of pumping a bore at a certain rate and recording drawdown in the pumped bore and nearby observations bores at specific times. There are two main types of pump tests; step-drawdown tests and constant-rate tests.

- A **step-drawdown** test occurs when a bore is pumped at successively greater discharge rates for relatively short periods of time. These tests are used to describe bore performance which is a function of the construction of the bore and aquifer characteristics.
- A **constant-rate** test occurs when a bore is pumped for a significant length of time at one rate and often includes monitoring of groundwater level recovery once pumping has ceased (a recovery test). These tests are used to provide information on aquifer parameters such as transmissivity, storativity and leakage.

3. Doing an aquifer test

The aquifer test must be of sufficient quality to demonstrate to the Council you are able to take the amount of water you are seeking and to provide a reliable assessment of aquifer properties to support an assessment of environmental effects. If the pump test is not of sufficient quality your application may not be accepted.

It is recommended that you discuss your aquifer test with a groundwater scientist and or the Otago Regional Council Resource Science Unit before proceeding.

The aquifer test data should be designed and analysed by a suitably qualified and/or experienced groundwater scientist. It is recommended that they are contacted before undertaking a pump test so that they can advise you on aquifer test design.

If for some reason you are unable to meet the recommended minimum aquifer test requirements, then it is advisable to contact either the Otago Regional Council or your consultant to discuss appropriate alternatives to ensure that your application will be accepted.

4. Do I need resource consent?

Under our Regional Water Plan, aquifer tests are a permitted activity the pumping rate does not exceed 2,000,000 litres per day (23.15 litres per second) and they do not exceed three consecutive days duration. If you are planning an aquifer test that does not meet these requirements you will need to obtain resource consent. However, you can apply for a water permit for the aquifer test at the same time you are applying for your bore permits.

5. Further information

For more information please contact either a suitably qualified and/or experienced person in hydrogeology or Otago Regional Council.

6. References

Aitchison-Earl, P. and Smith, M. 2008. *Aquifer test guidelines (2nd Edition)*. Environment Canterbury Technical Report R08/25, Environment Canterbury, New Zealand.

Kruseman, G. P. and de Ridder, N. A. 1994. *Analysis and evaluation of pumping test data (2nd Edition)*. Publication 47: International Institute for Land Reclamation and Improvement, Wageningen, the Netherlands.

7. Acknowledgements

This document is based on the Aquifer Pump Tests Information Sheet from Environment Southland (ES). ORC would like to thank ES for the sharing of information and ideas.

General requirements

- The pumping rate should be kept constant within +/- 5% and measured to within +/- 5% accuracy. It is recommended that a data logging electronic flow meter be used to achieve these requirements.
- After step and constant rate aquifer tests, recovery should be measured to within 10% of the initial static water level.
- After the start of pumping and during recovery, at a minimum, water levels in the pumping and observation wells should be measured at 30 second intervals during the first 5 minutes, 1 minute intervals between 5 and 15 minutes, 5 minute intervals between 15 and 60 minutes and 15 minute intervals thereafter. It is recommended that data logging pressure transducers be used to achieve these requirements.
- Pumped water should be discharged at a location where it won't cause recharge of the aquifer and influence the aquifer test.
- Aquifer pumping tests should be conducted during stable weather conditions. Significant rainfall, barometric pressure changes, high or variable river flows and other factors may influence the results of your test. Be prepared to delay the test if required.

Specific requirements

Takes less than 250 m3/d	2 hour pumping at the maximum proposed rate. Water level monitoring should include drawdown and recovery in the pumping well.
Takes between 250 to 750 m3/d	<ol style="list-style-type: none"> 1. Static water level to be monitored for at least 24 hours prior to start of test in the pumping and observation wells 2. A step-drawdown aquifer test comprising a minimum of 4, 1 hour pumping steps followed by measurement of recovery. The maximum pumping rate should be equal to the maximum proposed rate. 3. A 24-hour constant-rate aquifer test undertaken at the maximum proposed rate. Water level monitoring should include drawdown and recovery in the pumping bore and in at least one observation bore within the area of localized drawdown.
Takes greater than 750 m3/d	<p>Confined or leaky aquifers</p> <ol style="list-style-type: none"> 1. Static water level to be monitored for at least 24 hours prior to start of test. 2. A step-drawdown aquifer test comprising a minimum of 4, 1 hour pumping steps followed by measurement of recovery. Maximum pumping rate should be equal to the maximum proposed rate. 3. A 72-hour constant-rate aquifer test undertaken at the maximum proposed rate. Water level monitoring should include drawdown and recovery in the pumped bore and at least two observation bores in the source aquifer and one observation well in the overlying aquifer within the area of localized drawdown.
	<p>Unconfined aquifers</p> <ol style="list-style-type: none"> 1. Static water level to be monitored for at least 24 hours prior to start of test. 2. A step-drawdown aquifer test comprising a minimum of 4, 1 hour pumping steps followed by measurement of recovery. Maximum pumping rate should be equal to the maximum proposed rate. 3. A 48-hour constant-rate aquifer test undertaken at the maximum proposed rate. Water level monitoring should include drawdown and recovery in the pumped bore and at least two observation bores within the area of localized drawdown.

Information requirements to be included with the aquifer test results

The following information should be provided with the aquifer test results:

- A map of the site with key features including the pumping and observation bores, surface water features and pumped water discharge location identified
- Coordinates for pumping and observation bores used in the aquifer test
- Surveyed elevations for pumping and observation bores used in the aquifer test and for nearby surface water level
- Bore logs and construction information, including depth and diameter for the pumping and observation bores
- Information on the location of pumped discharge, the method used to measure discharge and the discharge monitoring records in electronic format (Excel).
- Records of measured groundwater levels in the pumping and observation bores in electronic format (Excel)
- Records of measured or observed rainfall, barometric pressure and river flows
- Analysis of aquifer test results to provide estimates of relevant aquifer parameters to support the effects assessment. This should include details of any data corrections used, analysis methods, plotted data, calculations used and discussion of data and analysis reliability